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THE

GARDENERS' CHRONICLE.

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(ESTABLISHED IN 1841.)

VOL. XXII.—NEW SERIES.

JULY TO DECEMBER, 1884.

LONDON:

41, WELLINGTON STREET, COVENT GARDEN, W.C.

1884.

LONDON :
BRADBURY, AGNEW, & CO., PRINTERS, WHITEFRIARS.

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Per
G166 J1-Dec.
1884

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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 549.—Vol. XXII. { New Series. } SATURDAY, JULY 5, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. Post-free, 5½d.

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HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

HYACINTHS, TULIPS, CROCUS, &c. The New Wholesale Trade CATALOGUE is now ready, and will be forwarded Post-free on application. Low Prices to the Trade.
B. J. LOMANS, Bulb Grower, Haarlem, Holland.

African Tuberoses.
WM. RISLEY, NURSERYMAN, Natal, South Africa,
will have ready for shipment in August next, about 200,000 first-class flowering roots of the above, and respectfully solicits Orders direct or through his London Agent,
Mr. WM. G. MACGREGOR, Langbourn Chambers, 17, Fenchurch Street, E.C.
From whom price and particulars may be obtained.

OUR TRADE LISTS, Nos. 68 and 69, just issued, contain all the North American Lilies, Rare Bulbs and Plants, Calochorti, Fritillarias, Heuchera micrantha, &c., Ferns and Cypripedia, to be delivered next autumn, to order, at unprecedentedly low prices; also Lilium auratum, Japanese Bulbs, Maples, Iris, Narcissi, to be delivered in same way. To ensure certain delivery, please order at once.
NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., BULB GROWERS, Hillegom, near Haarlem, Holland.
Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

PRIMULAS.—PRIMULAS.—PRIMULAS. Fifteenth year of distribution.
WILLIAMS' SUPERB STRAIN, 1s 6d. per doz., 10s. per 100.
CINERARIAS same price. Package and carriage free for cash with order. Above are strong and fit for potting into 3-inch pots.
JOHN STEVENS, The Nurseries, Coventry.

NEW AUTUMN TRADE LIST of BULBS, including NARCISSUS, LILIES, SNOWDROPS, CHIONODOXA LUCILIÆ, FREESIAS, LILY of the VALLEY, and a large collection of MISCELLANEOUS BULBS and TUBERS, is now ready, free on application, to
THOMAS S. WARE, Hale Farm Nursery, Tottenham, N.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Helleborus niger (Christmas Rose).
A. RIEMSCHNEIDER, NURSERYMAN, Brandenburg on Havel, by Berlin, having an immense stock of these useful Plants, can offer them at prices per 1000 or 1000 which defy competition. See CATALOGUE, which may be obtained free of
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

Cabbage Plants—Cabbage Plants
S. BIDE can now offer very fine Spring-sown Plants of Nonpareil, Enfield Market, and Champion Drumhead, or Cattle CABBAGE, at 2s. 6d per 100; also very fine Autumn-sown Red CABBAGE, all pricked-out plants, at 5s. per 1000. Packages free on rail for cash with order to
S. BIDE Alma Nursery, Farnham, Surrey.

SALES BY AUCTION.

Valuable Shells and Books.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, TUESDAY, and WEDNESDAY, July 7, 8, and 9, at half-past 12 o'Clock precisely each day, a grand COLLECTION of SHELLS, comprising many rare and valuable species, many of which are unique; together with the two splendid CABINETS of 34 Drawers each, in the best possible condition, made about 15 years ago by a celebrated maker; and the LIBRARY of Conchological and other Natural History Works, including a number of the Ray Society's Publications, Reeve's "Iconica," "British Conchology" (Jeffrey's), &c., the property of a well-known collector.

On view the Saturday prior and morning of Sale, and Catalogues had.

Thursday Next.—(Sale 6688.)

VANDA SANDERIANA, grand importation;
V. HOOKERI.
CYPRIPEDIUM STONEI,
C. NIVEUM

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr F. Sander, on THURSDAY NEXT, July 10, at half-past 12 o'Clock precisely, the finest importation of VANDA SANDERIANA ever yet offered, as far as size and health are concerned. The plants are in vigorous condition, with sound, plump leaves, and fine sound old and new roots. The Sale will also include grand plants of VANDA HOOKERI, CYPRIPEDIUM STONEI, C. NIVEUM, and other valuable importations.

On view morning of Sale, and Catalogues had.

Maule's Nursery, Stapleton Road, Bristol.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, on the Premises as above, on THURSDAY, July 17, at half-past 12 o'Clock precisely, in consequence of the death of Mr. Alexander James Maule, the COLLECTION of ORCHIDS, comprising several plants of the new Aërides Leoni, Cypripedium insigne Maulei, Saccolabiums, Vandas, Aërides, and other well-known varieties; also specimen ERICAS, EUCHARIS, PALMS, CYCADS, FERNS, Indian AZALEAS, YUCCAS, PYRUS MAULEI, &c.; Rustic Terra-Cotta POTS, square BASKETS, and other ORNAMENTAL WORK—a portion of the Nurseries being required for Building purposes, but the Business will be carried on as usual.

On view day prior and morning of Sale, and Catalogues had on the Premises, or of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London, W.C.

Tuesday Next.

By order of Messrs. F. Horsman & Co., of Colchester.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, July 8, at half-past 12 o'Clock precisely, a very fine and valuable importation of ORCHIDS, comprising Epidendrum vitellinum majus (a superior strain with extra large bulbs), Cattleya citrina, Arpophyllum giganteum, Schomburghia tibicina, Odontogloseum Rossi majus, O. Cervantesi, O. nebulosum, O. Dominianum, O. cordatum, Lælia albida, L. autumnalis, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.

CHOICE ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on TUESDAY NEXT, 100 lots of choice established ORCHIDS, amongst which will be found several very fine species; an importation of IMANTOPHYLLUM MINIATUM SPLENDENS from Natal, and various lots of ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA MENDELI. LÆLIA ELEGANS.
LÆLIA PURPURATA. VANDA LOWI.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, July 11, at half-past 12 o'Clock precisely, fine importations, including large and well formed masses of CATTLEYA MENDELI, LÆLIA ELEGANS, LÆLIA PURPURATA, VANDA LOWI, and other ORCHIDS of value.

On view morning of Sale, and Catalogues had.

Established Orchids.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, July 15, the COLLECTION of ORCHIDS formed by N. Wills, Esq., of Clive House, Esher. Also an unusually fine lot of IMPORTED ORCHIDS, by order of Messrs. F. Horsman & Co., of Colchester.

Thursday Next.—Drill Hall, Tiverton, Devon.

Important and totally UNRESERVED SALE of Splendid HOTHOUSE and HARDY ORNAMENTAL PLANTS, SHRUBS, PALMS, FERNS, &c.

MESSRS. AYRE BROS. AND CROCKER are favoured with instructions from Sir John H. Heathcoat-Amory, Bart., M.P., to SELL by AUCTION at the Drill Hall, Tiverton, aforesaid, on THURSDAY NEXT, July 10, at 3 o'Clock in the afternoon, a valuable and attractive Collection of Hothouse Exotic, and Hardy Ornamental SHRUBS, FLOWERING PLANTS, PALMS, FERNS, &c.

The Auctioneers beg to draw the particular attention of the Nobility, Gentry, Professional and Amateur Gardeners, Nurserymen, and the Public generally, to the above collection of Horticultural Gems, which are too numerous to fully describe the many magnificent specimens offered, but would mention that many of the plants offered will be recognised as having aided in obtaining prizes in several shows in the West of England; and will be arranged in the Catalogue to suit all purchasers, there being not the slightest reserve.

On view from 9 to 3 o'Clock on the day of Sale. Catalogues may be obtained one week prior to Sale, of the Auctioneers, Tiverton and Crediton. Should intending purchasers wish to view the Plants before the day of Sale, application may be made to Mr. PEEBLES, Gardener, Knightshayes.

Dated Auction and Estate Agency Offices, Tiverton and Crediton, Devon, June 28, 1884.

Thursday, July 10, at 12 o'Clock.

Within 79, George Street, Edinburgh.

VALUABLE SPECIMEN ORCHIDS.

MESSRS. SMITH AND DEWAR beg to intimate that they have been instructed by John Gair, Esq., The Kilns, Falkirk, to SELL by AUCTION, within their Rooms, 79, George Street, Edinburgh, on THURSDAY, July 10, at 12 o'Clock, a large and choice COLLECTION of SPECIMEN ORCHIDS (parted with solely for want of room), including Cattleya labiata, true autumn-flowering variety; Dendrobium thyrsiflorum Walkerianum, grand specimen, with thirty enormous bulbs; Lælia Wolstenholmiæ, L. elegans Schilleriana splendens, Cattleya Skinneri superba, extra fine variety; Cattleya Wallisii, true; some splendid plants of Cattleya Dowiana and C. gigas, fifty Odontoglossum Alexandræ, good plants and fine varieties, &c.

The Plants will be on view on July 9, after 1 o'Clock, and Catalogues may be had from the Auctioneers, or from Mr. WM. THOMSON, Jun., Clovenfords, by Galashiels, who has charge of the Sale.

SIDCUP HILL NURSERY,
Foot's Cray, Kent.

Miss SIM having considerably reduced the stock by Auction, is anxious to FIND a PURCHASER for the BUSINESS. To any one having a taste for the Culture of Ferns the present is an opportunity seldom met with. Incoming moderate

Apply on the Premises, or to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

Somerset.

To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD, by Private Contract, with early possession, the Old-established BUSINESS (of over 150 years and only changed hands three times) of a NURSERYMAN, SEEDSMAN, and FLORIST, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Princes Street, Yeovil.

The Merriott Nurseries comprise 27 acres of excellent Land, completely stocked with splendid young, valuable, and saleable Fruit; Coniferous, Forest, and Ornamental Trees and Shrubs; and well stocked Greenhouses, &c.

The Residence, Offices, Stabling, Manager's Villa, and Cottages, and a portion of the Nursery Grounds, are the proprietor's Freehold, and may be Purchased or taken on Lease.

The small Hendford Nursery is well stocked, and is provided with newly erected and conveniently-fitted Greenhouses, and other Erections adapted for the business. These Premises may also be Purchased or taken on Lease.

The age and state of health of the Proprietor alone induce him to retire, and he will be prepared to Sell on advantageous terms.

The Yeovil Branch Business could be taken separately if so desired, or the whole affair in its entirety, which would in the latter case afford an excellent opportunity for Partnership.

For further particulars and cards to view, apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or, to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.—June, 1884

To Small Capitalists, &c.

ON SALE, the UNEXPIRED LEASE and STOCK of a ROSE NURSERY, situated in one of the best districts in the North of England—7 Acres of Land, four Greenhouses, and other very useful buildings. Good old-established business. Price £400. Great bargain.

Apply X. 88, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand W.C.

TO BE DISPOSED OF, a FLORIST BUSINESS, near London. Long lease. Particularly suited for any one having a shop in London. Patronised by Royalty. Prettily and newly erected Cottage and Greenhouses, well stocked Garden, and near railway station.

Apply, M. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

One of the most Picturesque Gardens at WEYBRIDGE HEATH

FOR SALE, with moderate-sized House, Freehold. Gardens could not be formed and matched in a lifetime. Kitchen and Fruit Garden, Woodland and Heather (which grows luxuriantly on this dry sandy soil), Ferns and Wild Flowers, and a fringe of fine old Pine Trees.

Messrs. DEBENHAM, TEWSON, FARMER, and BRIDGEWATER, 80, Cheapside, E.C.—(38,116.)

TO LET, a NURSERY, 4 miles from Covent Garden, containing thirteen modern built Houses (about 15,000 feet of Glass), well heated: 5-roomed House, 4-stall Stable, two Van-houses, water on premises. Well stocked with Palms, Dracænas, Ficus, &c. Stock optional or suitable PARTNER would be accepted.

M. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, with Immediate Possession, the NURSERY GROUNDS, late in the occupation of William Corp, consisting of 4 Acres of Land, well stocked with a fine collection of Hybrid Perpetual and Tea-scented Roses, worked on the seedling and cultivated Brier; Pot Roses, &c.; 2 large Greenhouses, Potting Shed, Stable, &c., situate on Cowley Marsh, near Oxford, about 5 minutes' walk from the tramway terminus.

Full particulars may be obtained from Mr. W. KIRTLAND, Chipping Norton, and to view the same apply to GEORGE STREET, at the Nursery.

Abergavenny Nursery.

TO BE LET, with Immediate Possession, the above Old-established NURSERY, consisting of 14 Acres of excellent ground, stocked with Trees and Shrubs. 6 divisions of Greenhouses heated with hot water, a large number of Pits and Frames, large Packing Shed, good Stable and Cart Shed, Piggeries, &c., together with an excellent Residence, and 10 Acres of good Pasture Land joining the nursery. The above forms one of the most compact and desirable business premises to be met with, and has been carried on by the same family for nearly 70 years, and is now to Let owing to the death of the late proprietor and failing health of his successor. Stock and Fixtures to be taken at a valuation.

For particulars apply to HORACE WOODS, The Gardens, Maindiff Court, Abergavenny.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

WIRKSWORTH ROSE SOCIETY.
Affiliated to the National Rose Society of England.

A ROSE SHOW, open to All England, will be held on "The Lees Grounds," Wirksworth, on TUESDAY, July 17, when upwards of SIXTY POUNDS in PRIZES, together with Medals of the National Rose Society, will be offered for competition. The fine Band of H.M. 5th Dragoon Guards will be in attendance.

Admission, 1 to 3 P.M., 2s.; 3 to 5 P.M., 1s.; after 5 P.M., 6d.

A special train will run from Nottingham, Trent, Beeston and Derby (for particulars see bills), and return tickets will also be issued by all ordinary Midland trains, at a fare and quarter for the double journey from Nottingham, Burton-on-Trent, Derby, Sheffield, Chesterfield, &c., to Wirksworth, and from Buxton, Millers Dale, Hassop, and Bakewell, to Matlock Bath.

SHREWSBURY GREAT FLORAL FÊTE, WEDNESDAY and THURSDAY, August 20 and 21. FOUR HUNDRED POUNDS in PRIZES, open to all England. Twenty Plants, £25, £20, £15. Schedules and full particulars from

Messrs. ADNITT AND NAUNTON, Hon. Secs.
Shrewsbury.

WARWICKSHIRE AGRICULTURAL SOCIETY.

A GRAND HORTICULTURAL EXHIBITION will be held on the Show Ground at Stratford-on-Avon, on TUESDAY and WEDNESDAY, September 2 and 3. Open to all England. Entries close Monday, August 18. Schedule of Premiums, Forms of Entry, and all information can be had from

Mr. A. M. COX, Local Secretary,
Stratford-on-Avon.

PURSUANT to an ORDER of the CHANCERY DIVISION of the High Court of Justice, made in the matter of the estate of WILLIAM MILES, deceased, and in an Action, Morris against Miles, 1884, M. 436, the CREDITORS of WILLIAM MILES, late of Cliftonville, in the County of Sussex, Florist, who died in or about the month of February, 1883, are, on or before the 28th day of JULY, 1884, to send by post prepaid to Mr. John Vernon, of No. 36, Coleman Street, in the City of London, the Solicitor of the Defendant, Eliza Miles, the Executrix of the Deceased, their Christian and Surname in full (including those of Partners), their Addresses and Descriptions, the full particulars of their Claims, a statement of their Accounts, and the nature of the Securities (if any) held by them, or in default thereof they will be peremptorily excluded from the benefit of the said order. Every creditor holding any Security is to produce the same before Vice-Chancellor Bacon, at his Chambers at the Royal Courts of Justice, Strand, London, on the 5th day of August, 1884, at 12 o'Clock at noon, being the time appointed for adjudication on the Claims.

Dated this 27th day of June, 1884.

E. LIONEL CLARK, Chief Clerk.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS and COLOUR MERCHANTS, 43, Commercial Street, E.

Double White Primulas.

H. B. MAY offers strong healthy Plants, fit for immediate potting. Price (which is low) on application.
Dyson's Lane Nursery, Edmonton.

TEA ROSES.—Fine Plants, in 48's (Maréchal Niel, Gloire de Dijon, and other best kinds), 50s. per 100.
W. JACKSON, Blakedown, near Kidderminster.

CUT ROSE BLOOMS in variety.—Large quantity to be disposed of weekly, 5s. per 100, including package. Cash with Order.
W. B. ROWE AND CO. (Limited), Barbourne, Worcester.

Perpetual Flowering Tree Carnations.

W. HOWARD, Southgate, N., has a surplus Stock of bushy, short jointed, flowering Plants, grown in the open air, for delivery in September next. Having made Tree Carnations a speciality for many years my Stock only consists of good varieties, and, being the largest grower of them for Covent Garden Market, they may depend on getting the right thing from me.

Ferns—Ferns.

H. B. MAY offers the following varieties, in clean, strong, healthy plants, at 16s. per 100, 2s. 6d. per dozen, packing included (Cash with order):—Pteris serrulata major, P. hastata, P. longifolia, Adiantum cuneatum, Doryopteris palmata, Cyrtomium falcatum.
Dyson's Lane Nursery, Edmonton.

PAUL AND SON, The "Old" Nurseries
Cheshunt, N.,
respectfully announce as now ready for sending out:—
ROSES IN POTS, for planting out or culture in pots, from a stock of 30,000.
NEW ENGLISH ROSE, H.P., Grandeur of Cheshunt (Paul & Son), 3s. 6d. each.
NEW FRENCH ROSES of 1884, 3s. 6d. each.
HARDY FLORISTS' FLOWERS, such as Dahlias, Chrysanthemums, Carnations, Pyrethrum, Pansy, Violas, &c., Hardy Herbaceous Plants, and Rock Plants, at the New Herbaceous Plant Nursery at Broxbourne.
NOTES.—The ROCKWORK at Broxbourne, adjoining Station of Great Eastern Railway, is now most interesting. The ROSES at Cheshunt are now in bloom.
Descriptive CATALOGUES post-free on application.
PAUL AND SON, The "Old" Nurseries, Cheshunt, N., Great Eastern Railway.

OFFERED FOR EARLY ORDERS:—HELLEBORUS NIGER, fine strong Plants, 26 florins per 1000. Strong Tubers of CYCLAMEN EUROPÆUM, 24 florins per 1000; Smaller Tubers, 14 florins per 1000. NARCISSUS POETICUS, 14 florins per 1000. LILIUM MARTAGON, 30 florins per 1000 CYPRIPEDIUM CALCEOLUS, 80 florins per 1000. VERATRUM album, 45 florins per 1000. Seed of HELLEBORUS NIGER, 12 florins per kilogramme. A sample of the most popular and beautiful Alpine Plants, together with packing, and properly addressed, from
CHRISTOF SLEINPOCK, Altlengbach Lower Austria.

LOUISA ASHBURTON CARNATION,

WHITE PERPETUAL.

THE BEST FLOWER FOR PERSONAL ADORNMENT THROUGHOUT THE YEAR.

Plants now ready, 3s. 6d. each. Usual terms to the Trade.

W. J. CROSS AND STEER, 8, CANAL, SALISBURY.

MEDALS—Belfast, 1844; London, 1851, 1862, and (Gold) 1870; Paris (Gold), 1867; Dublin, 1865 and 1872; Belfast, 1870; Philadelphia, 1876.

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BELFAST, IRELAND,

(REGISTERED TRADE MARK)

MANUFACTURERS BY HAND AND POWER OF

Table Linens, Sheetings,
Pillow Linens,
Fronting and Body Linens,
Irish Point Lace and Cambric Handkerchiefs,
Diapers, Huckaback, and Fancy Towels,
Glass and Tea Cloths, Lawns,
Hemstitched Linen Cambric Frilling, &c.

All our Fabrics are made of the best Irish and Courtrai Flax, spun, woven, and bleached in Ireland; and the Patterns woven in our Table Linen are designed by Irish Artists, which have for many years excelled those of any other country.

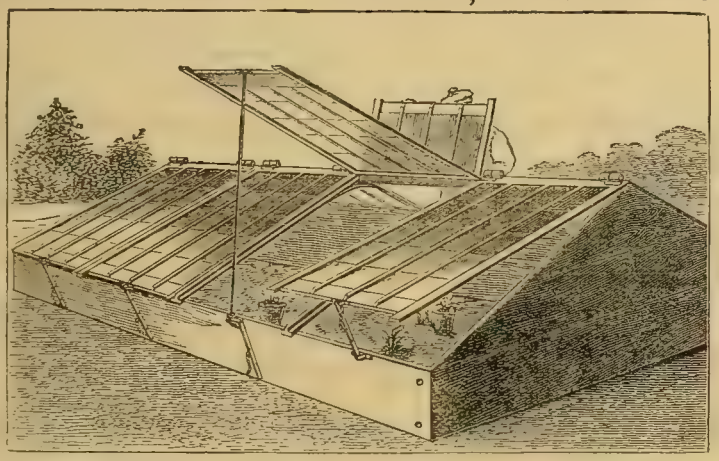
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Purchasers must see that our Trade Mark Ticket, as above, is on each article.

BOULTON & PAUL, NORWICH.

Our GREENHOUSES are erected in every part of the Kingdom.

Best Designs. First-quality Materials. Cheapest Prices.



Send for Estimates, Catalogues and Lists post-free on application.

CHEAPEST BUILDERS of GREENHOUSES in the Kingdom.

PAXTON'S CALENDAR.

THE COTTAGER'S CALENDAR

OF

GARDEN OPERATIONS.

ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

H. LANE AND SON respectfully invite their Patrons and Friends to visit their Nurseries during the present month to view their fine Collection of ROSES, now in full bloom. Purchasers can select from many thousands. Standards, 15s. to 18s. per dozen; Dwarfs, 9s. to 12s per dozen. A choice and immense stock of RHODODENDRONS, CONIFERS, TREES and SHRUBS. FRUIT TREES of all descriptions, extensive ORCHARDS in full bearing. VINERIES of all the leading kinds of Grapes, &c.
The Nurseries, Berkhamsted, Herts.

Daffodil, Daffodilly, Daffodowndillies.
A DESCRIPTIVE CATALOGUE of more than 200 sorts of DAFFODILS free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant.
CATALOGUES gratis and post-free of KELWAY AND SON, Langport.

DANIELS' SEEDS for PRESENT SOWING.

Price List sent free to any address on receipt of post card.
DANIELS BROS., SEED GROWERS, NORWICH.

The 3 Best Cabbages for Early Spring Use.

Daniels' Defiance Giant Early Marrow, 1s. pkt., 2s. 6d. per oz.
Allan's Incomparable Early Marrow, 1s. 6d. pkt., 2s. 6d. per oz.
Daniels' Little Queen, superfine early dwarf, 1s 6d. pkt., 2s.6d. oz.
DANIELS BROS., Seed Growers, Norwich.

The 4 Best Onions for Autumn Sowing.

Daniels' Golden Rocca, fine straw-coloured skin, 1s. 6d. per packet, 3s. 6d. per oz.
Daniels' Giant Rocca, weight 2 to 3 lb., 1s. per oz., 10s. per lb.
Daniels' White Elephant Tripoli, the largest and best Silver-skin Onion known, 1s. 6d. per packet, 3s. 6d. per oz.
Zittau Yellow Giant, splendid quality and long keeper, 8d. per oz., 6s. per lb.

DANIELS BROS., Seed Merchants, NORWICH.

GRAPE VINES.

THE

LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN) LIMITED,
THE VINEYARD and NURSERIES, GARSTON,

have this Season a splendid Stock of Grape Vines suitable for Present Planting. Orders booked now for specially strong Vines for Fruiting in Pots.

Catalogues, with full particulars, on application.

Come and See

THE HOME OF FLOWERS.
The most instructive and interesting display of Flowers in England will be found to comprise such an array of colour as never before seen. BEGONIAS, PELARGONIUMS, ROSES, FUCHSIAS, COLEUS, GLOXINIAS, VERBENAS, BALSAMS, CHRYSANTHEMUMS, PANSIES, VIOLAS, DELPHINIUMS, SWEET WILLIAMS, RANUNCULUS, ANEMONES, &c., and all the best HERBACEOUS and ALPINE PLANTS are now a grand sight, including all the numerous FLORAL NOVELTIES, &c. All supplied at the very lowest Prices, consistent with quality and correctness.
Send for a CATALOGUE.
H. CANNELL AND SONS, Swanley, Kent.

GARDEN REQUISITES.

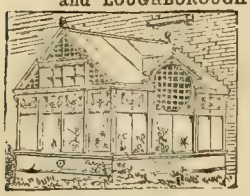
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
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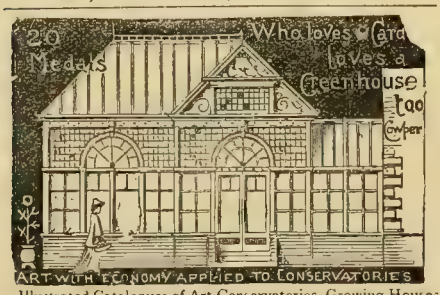


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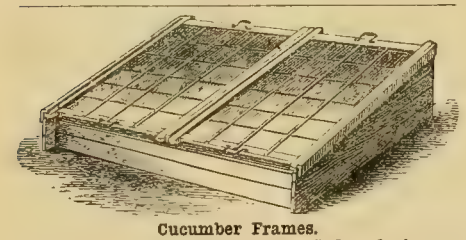
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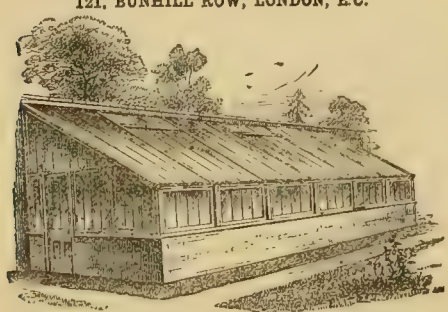
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THE
Gardeners' Chronicle.
SATURDAY, JULY 5, 1884.

HOLLAND HOUSE.

"FIVE HUNDRED travelled people," said Sydney Smith, "had found Holland House, Kensington, the most agreeable house in Europe," and he shared their opinion. The modern fame of this noted residence dates from its restoration by Lord Holland at the period of his return from foreign travels in 1796. As to its earlier history the Manor of Kensington belonged to the De Veres, whose pedigree genealogists have deduced from Noah. Part of the present building was erected about 1607—1610 by Sir Walter Cope, whose heiress married Sir Henry Rich, who was first created Baron Kensington, and then, in 1624, Earl of Holland. During the Civil War in 1648 the Earl, being then a Royalist, was captured, imprisoned in Warwick Castle—the seat of his elder brother, who had been created Earl of Warwick—and beheaded in Palace Yard, Westminster, wearing a white satin waistcoat, and cap with silver lace. The two earldoms of Holland and Warwick were both inherited by the son of the first Earl of Holland, and his son Edward, sixth Earl of Warwick and third Earl of Holland, dying, left a widow, the Countess of Warwick, who married Joseph Addison.

Here the most charming of our essayists, the author of "Sir Roger de Coverley," died of asthma and dropsy, or, as Walpole, the gossip, has it, of brandy!—a story not quite consistent with his sending for the youthful Lord Warwick, and saying to him, "See in what peace a Christian can die!" In 1621, Lord Warwick died, and in 1627, Stephen Fox, the founder of the Fox family, a choir-boy at Salisbury Cathedral, and afterwards the Paymaster-General of the Army, was born. Evelyn said of his great fortune that "it was honestly got and unenvied; which is next to a miracle." We cannot write his history, and must only briefly say that in 1716 he died at his villa at Chiswick, where Charles James Fox, his grandson, died ninety years later. Two of his nine sons were respectively created Earl of Ilchester and Baron Holland, and the former seat of the Rich family passed by purchase to Henry Fox, the first Lord Holland, in 1767.

The modern history of Holland House commences with its restoration in 1796 by the third Lord Holland, that genial and accomplished nobleman, who described himself as the "nephew of Fox and friend of Grey;" and to this house the eyes of the world have been from that time directed. During forty years, from the times of Byron, Fox, and Sheridan, to those of Lords Melbourne, Russell, and Houghton, there was hardly a distinguished Englishman or foreign visitor to this country who did not become the guest of Lord and Lady Holland. With the omission of his own prominent figure, Macaulay has himself painted a striking picture of the society they assembled around them. The grounds of this famous residence now include a park so admirably fenced and

Planted that none would imagine, except for the occasional murmur of traffic, what a world of streets and houses lies near. Their extent has, by necessity, grown smaller. The original manor of the De Veres consisted of 500 acres, but more than four-fifths of this wide space has now been built upon. The site of Little Holland House, worth £20,000 per acre, has been long since devoted to the crop which, at Kensington, exceeds all others in profit. The area of the kitchen garden between the house and Addison Road has been considerably diminished by the erection of a good house called Oak Lodge, whose ample and ornamental grounds occupy, it is said, the site of the old Manor House, with its moats or stew ponds, and of the monastery. The name of Addison Road speaks for itself. That of Melbury Road was derived from the name of Lord Ilchester's chief seat in Dorsetshire; and Lord Ilchester, being the descendant of the eldest son of the founder of the Fox family, will inherit Holland House. It is surprising how secluded the walks and lawns here still are, especially the Green Lane which passes from Melbury Road to Notting Hill, and is a greener lane than is often seen, the grass below being densely overarched by Elms, interspersed with the Maple and Sycamore. On the occasion of the Scottish *fêtes*, which some may remember, the Queen and Prince Consort passed along this beautiful green drive.

The English Elm is here the favourite tree. Mr. Dixon, the excellent gardener, has found that the Holly does not thrive here as an undergrowth to large timber, and he has successfully replaced it with the hardiest of our shrubs, the Elder. The black Italian Poplar has been found to defy the smoke as well as the Plane itself, and has been planted here as a substitute for that tree. On all occasions kings should take precedence, and in describing the grounds, Louis Philippe's Walk should have been first mentioned. That illustrious exile came to Holland House as a friend and visitor, and Queen Amelia resided here in 1862, after the death of Lord Holland. The bust of Napoleon I., near the alcove where Rogers sat, reminds us of Lord Holland's and C. J. Fox's personal friendship with the Emperor, which later members of their family enjoyed in the case both of the third Emperor Napoleon and of the other banished ruler just mentioned.

The house, being a square block, has four sides; the southern, and the best side, is relieved by the wings and arcades, built by the Earl of Holland; and here will be found a columnar specimen of a tree always welcome for its foliage and novelty—the Gingko adiantifolia. The Dutch garden is on the west side, with borders edged with clipped Box in good condition at eighty years of age without having been relaid, in spite of the recent wet summers, which the Box dislikes. On this west side, close to the house, are several specimens of the Judas Tree, which produces its flowers on the old wood before the leaves appear: one of two standards has a girth of 4 feet at 4 feet from the ground. A wall divides this curious old Dutch garden from the north lawn, and is planted on the sunny side, where the poet Rogers loved to stroll, with Peaches, Nectarines, and Plums. It would grieve a strolling poet, this year, to discover no Plums on any of the standards here except on Denyer's Victoria and the Prince of Wales, which are full. The Oranges have suffered from the wet, cold seasons, for the summers that suit our agriculture suit our Oranges as a rule. The Dutch garden is completely secluded by means of another wall, or bank of trees and protecting shrubs on the south side. At the end furthest from the house is an evergreen arcade covered with Ivy, and beyond is a flower garden which has been devoted to the Dahlia, of which the third Lady Holland was one of the introducers, bringing the seed from Spain and sowing it in this very garden in 1804. This is what her husband said on the subject:—

> "The Dahlia you brought to our isle
> Your praises forever shall speak,
> 'Mid gardens as sweet as your smile,
> And in colours as bright as your cheek."

Other accounts say that Lady Bute's first introduction of Dahlias in 1789, as well as Lady Holland's, failed, and that the plant was reimported from France in 1814.

Princess Marie Lichtenstein says, very prettily, in her work entitled *Holland House*, that this picturesque arcade "has a secret which the Ivy is trying to keep," and she then discloses that the stables stood here close to the lawn where the garden parties are held, and close to the refreshment-room, till the third lord partly removed them, leaving only those massive arches which the Ivy now decorates.

The main entrance is on the east side, which is divided from the north lawn by a screen or wall, made elegant by the tiles which fill its panels, and which the late Lord Holland procured in Florence, where he resided as the English ambassador. To reach the lawn on the north you pass a double flight of steps through gates hung on piers designed by Inigo Jones, and here you enter an extensive lawn sloping gradually upward from the house into a hill surmounted by an old and mutilated Cedar tree, which the authoress just quoted pourtrays in her book as one of the shattered veterans of her former home. In the same delightful volumes there are frequent illustrations of the house and grounds, and minute descriptions of the interior of the house.

We have only space to notice further among specimen trees of interest growing here, almost in London, a weeping Ash, with many curious contortions of the trunk, a Catalpa syringifolia introduced at the same time as those at Hampton Court and Sion House, a Liquidambar, a Kentucky Coffee tree, Gymnocladus canadensis, a noble Platanus orientalis, and a Service tree. Pomegranates, grown in boxes like Oranges, are rather novel and very pretty shrubs, used here for terrace decoration. The most remarkable clump of trees is that known as the Cedar Grove, consisting of Cedars of Lebanon of large size, but somewhat damaged by the atmosphere of London, and now more remarkable for age and the associations attaching to them than for beauty. The Cedar is common in the Thames Valley, but this particular group has been honoured probably by the presence of more good company and distinguished men and women, than any other on the Thames or elsewhere. Addison must have strolled beneath them in their youth, as well as most of the great men and writers of the last century, who would hardly fail to visit the spot where the great master of elegant prose had dwelt. Charles James Fox must have looked at them fondly when he came, shortly before his death, to bid the Green Lane and his early home a last farewell. Nelson and Wellington saw them, no doubt—the first in their greener days, and the other hero later on, when the three kings whom he served had been succeeded by Her Majesty, and the Cedar trees, like himself, were stiffening with age. These trees could tell us, had they language, of Byron's beautiful face—the ideal of a poet's countenance, Scott called it.

They could describe the personal appearance of scores of men, whom illustrious painters have idealised on canvas. Lord Beaconsfield attended church in a country village on a cold morning, and the people thought him pinched, yellow, and exceedingly ugly. He stands in bronze outside Westminster Abbey, and in marble within it, untouched by cold and chills, and exceedingly handsome. One would like a little discriminating gossip from the Cedars about Burke and Pitt, Buffon, Humboldt, Count Rumford, Brougham, Washington Irving, Madame de Staël, Metternich, and the other luminaries, English or foreign, who have strolled here upon the turf during the sway of the famous Lady Holland.

One would like to hear them, too, on the subject of the more recent people and events of the Victorian period, and especially one would like a description, if it could but be obtained from them, of the present Lady Holland's garden parties. These aristocratic gatherings are held near them on the west lawn under their shade, and that of several other sorts of trees, as various as the individuals of the distinguished crowd that gathers beneath them; some homely, others ornate; some very useful, others good for nothing, except for show. The site seems to have formed part of an orchard once, and there still remain the Apple, and Walnut, and other old fruit trees, with the Oak and the Ailantus and other specimens. The tent for the Royal family is pitched under some Walnut trees, while the band is placed in an Oak grove. The Cedars, having eyes, might have seen the Queen, on these occasions, a guest among 1200 or 1500 of her most fortunate lieges, who are privileged to attend such *fêtes*. And on this side the gay scene certain Royal children, a few years since, might have been observed enjoying with great delight the special amusements provided for their entertainment. But young people are not alone in their admiration of Punch and Judy, the Marionettes and dancing dogs, and such grave statesmen as Gladstone, Disraeli, Hartington, and Lowe have been observed in this part of the grounds intently watching the fun.

These same Cedars, too, must have witnessed the rambles and the meditations of those more intimate friends who, on quiet days, sought the retirement of these green retreats. The poet Rogers had his favourite seat hard by, within an Ivy-covered alcove, which now bears on its wall the following inscription:—

> "Here Rogers sat, and here for ever dwell,
> With me, the pleasures that he sings so well."

They must have seen, too, Cetewayo and his four chiefs, jovial and loud, a little lamed by their unaccustomed boots, but rollicking and full of laughter, as of beef. Among all the flowers the huge monarch most admired the Salvia patens, that flower of deepest blue which has but one fault, that it stays with us, like the nightingale, only a short time. It is sad to record that all the Cedars have suffered from smoke. There are several in the grounds, notably in the Dutch garden, which have been so seriously shaken by age and London life that strict taste would perhaps condemn them to be felled, but Lady Holland, with kindly sympathy, refuses to pronounce their death warrant. May they still stand many years!

We ought to mention a rapid run through several houses, none very new, where Mr. Dixon grows, with much skill, the large quantity of flowers required of him. *H. E.* [For an illustration of the garden, see p. 17.]

Œnanthe fluviatilis.—This is considered in some botanical books to be a mere variety of Œ. Phellandrium, but is so decidedly different as to deserve specific distinction. The members of the genus are remarkably various in their habit, ranging from those that frequent firm and comparatively dry ground to the present one, which has its foliage more or less entirely submerged in running water. The finely divided leaves with wedge-shaped leaflets together with their dull green colour are so suggestive of a Filmy Fern, that the plant is well worth cultivating by those who can command a running stream. The leaves and stems, especially when bruised, emit an agreeable Parsley-like odour. It is rather a rare plant, being confined to the southern half of England, and perhaps one place in Ireland. There is a figure of it in *English Botany*, t. 2944, and clumps of it occur wild in the brook Colne, Hounslow, Middlesex.

New Garden Plants.

CATTLEYA INTRICATA, *n. hyb. nat.?*

Ah, those dreadful "uniques"! They are the pride of collectors, the despair of poor botanists, who have to name them. The habit of this most recent riddle is that of Cattleya intermedia as I am informed by its actual excellent possessor. The flower makes one think of those of Cattleya intermedia, the narrow sepals and petals being lightest white-rose, the lip is that of Lælia elegans picta, only that the sharp-angled, long side-laciniæ are white, the free blade of the mid-laciniæ with abrupt stalk, of the deepest warm purple. Column light rosy. Pollen of a Cattleya.

The plant has puzzled Mr. S. Low himself, whose eyes are so much accustomed to judge bulbs of our pets. After a long, vexing meditation I cannot but endorse Mr. S. Low's view, that it has the strains of Cattleya intermedia and Lælia elegans. I expect the future possessor of this *rarissima avis* will have less anxiety with it than either Mr. S. Low or I have endured about it. *H. G. Rchb. f.*

CATTLEYA MOSSIÆ ARNOLDIANA, *hort. Sand.*

I have received two very fine flowers of this. Sepals and petals lightest white-rose. The lip is rather narrow, and thus approaches rather that of Cattleya Luddemanniana. Its basilar part shows very dark purple stripes, mid and anterior part, excepting the front part, a light mid-line and very fine orange stripes on a lighter ground, the front part sulphur, with a very few small purple lines, thus presenting the character of Cattleya Mossiæ.

I feel but too happy that the possessor, Mr. R. P. Percival, informs me the plant has a name in Mr. Sander's catalogue of a certain sale. The question is if it is a member of a certain equal staff, or if it is a single individual. It has, Mr. R. P. Percival tells me, ordinary Mossiæ bulbs, and was sold at the same time as C. Reineckeana and C. Wagneri. *Qui vivra verra. H. G. Rchb. f.*

ODONTOGLOSSUM VUYLSTEKEANUM, *n. hyb. nat.*

A grand thing. Take an Odontoglossum mulus sulphureum, give it a lip much dilated at the top, and add the sharp edges of the petals of Odontoglossum Wilckeanum. The whole is sulphur coloured. The few blotches, however, of the odd sepal, petals, and lip are deepest richest dazzling orange, the lateral sepals are of that colour except their base.

I was exceedingly surprised by the extra beauty, and so were my orchidic visitors during the last days. One, however, bitterly complained of Mr. Vuylsteke's not selling his best uniques. I regard this a matter of taste. As to me, I well know this is no botanic species. It is one of those painful riddles we shall be puzzled by till Messrs. Veitch reveal the question by a few thousand flowering mules, produced by Mr. Seden's laborious work and careful notes. As it is, the bright royal beauty wants a name for horticulture. I name it with great satisfaction in honour of Mr. Vuylsteke, of Loochristy, Ghent, who sent so many fine things to the grand exhibition of St. Petersburg, though the greater part did not appear, having been detained by unexpected impediments. *H. G. Rchb. f.*

ODONTOGLOSSUM CRISPUM VEITCHIANUM, *n. var.*

A grand beauty, including and connecting the characters of Chestertoni and fastuosum. Petals and sepals unusually broad, petals toothletted. Both petals and sepals are white, mauve and purple-cinnamon coloured. The last colour is confined to few lobed brown blotches. They lie chiefly on white discs, which are separated from the white borders by a zone of mauve, toothletted outside. And this zone is most curious in the petals, where from the presence of fine darker stripes there is an effect of colour that makes one think of velvet.

The history is short. It belonged to Messrs. James Veitch & Sons. Proud of the beauty they exhibited it as crispum mirabile. Now came Baron von Schrœder, of The Dell, Staines, who appears to have taken possession of the beauty by putting, if not his banner, yet his *carte de visite*, on the plant. Struck by the analogy of this with Odontoglossum Pescatorei Veitchianum the Baron declared it would be well to have it called Odontoglossum crispum Veitchianum: I glady accept this Schrœderian nomenclature—a flattering compliment both to Mr. Harry Veitch as to the everlasting splendour of the grand Veitchian establishment. In this time of eager competition arrives a competitor, Mr. F. Sander, who sends one of the arcana of his firm, a rather well dried wild grown flower, as the same. For me it is quite distinct, since the lobed blotches appear undoubtedly mauve, and the lip is a little acute (not blunt) though very broad, so that it cannot be regarded as Ruckerianum. *H. G. Rchb. f.*

THE FERN NURSERY, SALE.

Perhaps the majority of the horticultural fraternity are more familiar with that modest and truthful notice in the advertising columns of the horticultural papers, "Ferns a speciality," than they are with the most beautiful and varied collection of Ferns which Messrs. W. & J. Birkenhead have now brought together in their nurseries. I had long promised myself the delight of inspecting their collection, and the event came off at last, and although I went with large expectations they were more than fully met with the rich and varied multitudes of ferndom there associated. A veritable Fern world! said one to oneself, all the while filled to overflowing with the joy which arises from a true appreciation of the delicate greenery, and infinitude of differentiations revealed in Ferns. Here they are by the thousand, everything elbowed out of the way, and for the matter of that elbowing each other out of the way, until every inch of available space is replete with interest and beauty. Many old friends are recognised, and many new ones observed; indeed one was immensely struck with the rarities and fresh species and varieties here assembled, each and all forming part and parcel of the life of their fortunate possessors. Come here ye members of the gardening fraternity, and ye who admire Fern life, and confess your ignorance of the numerous gems Dame Nature has been pleased to pass into existence without the adjuncts of floral dress! Confess also, ye members of the fraternity, your lack of taste (forgive me, refined taste I mean), because so few Ferns are grown, when so wide a field of beauty presents itself to select from! The idea amongst gardeners in this utilitarian age seems to be "Ferns for cutting." I would fain urge "grow Ferns for themselves." But I must proceed to mention a few of the best and most striking Ferns noticed during an examination extending over ten hours—a time far too short—but a very rigid selection must be made to keep oneself within reasonable limits, for to mention anything like what is here to be seen would be compiling a huge catalogue—a matter so admirably accomplished by Messrs. Birkenhead in their Fern catalogue, which is a work of art and replete with valuable information, and one was happy to see it duly appreciated in the pages of the *Gardeners' Chronicle* very recently. The utilitarian Ferns are here in enormous quantities, while the enthusiast will find much that is unsurpassed, I venture to suggest, even in our national collection at Kew, which, by the way, one is happy to learn has improved so much of late. Without further appearance of digression I will note the good things seen in the

Home Nursery.—Here are several low, mostly span-roofed houses filled to overflowing, and let us first walk through the propagating-house, and just fancy what meets you—countless multitudes of sporelings in all stages of infant happy growth!—what a host in thimble pots, other hosts in pans, others not pricked off, while multitudes are in their humble prothallic condition working out the reproduction of the Fern world! "Hidden and unseen," cryptogamic or "obscurely wedded" members they of the green world, as the sagacious Linnæus' name suggests. Here broad masses of Adiantum macrophyllum, cuneatum, gracillimum, fulvum, polyphyllum, Asplenums, Gymnogrammas, Nephrodiums, Cheilanthus, Gleichenias, Pteris, the new and very striking Selaginella grandis, meet you on all sides, and beneath good batches of Gleichenias are being raised from spores. A most charming lot of G. flabellata was especially attractive, while many varieties also find a congenial home.

It seems well-nigh impossible for one to write systematically regarding this collection, for the forms which arise before one's vision are so numerous—each deserving mention. It will be best perhaps to pass the primary genera in review, and begin with the Maidenhair Ferns (Adiantums). A. Luddemannianum is especially attractive, with its agglomerated pinnæ and dark slender stipes—perhaps the most distinct Adiantum of hybrid origin; it does best in an intermediate temperature. A. dolabriforme, grown in baskets and pyramids of pots inserted one in the other, is extremely pretty, with its crescent-shaped pinnæ and elongated fronds bearing at the extremities young plantlets, which under proper conditions will speedily form pretty colonies. A. caudatum is another species admirably adapted for baskets, also producing plantlets. A. neo-caledoniæ, one of Messrs. Birkenhead's introductions, is very distinct, with deltoid tripinnate fronds. This was fully described, I think, in the *Gardeners' Chronicle* by Mr. Moore. A very fine batch of A. Victoriæ, so dwarf and handsome, with broad, cuneate pinnules, quite distinct, was especially noticeable, while the rarer Henslovianum was also in good order. A. Seemanni and peruvianum were well represented, as well as A. princeps, velutinum—a magnificent species—Wilsoni, amabile, rubellum, venustum, pellucidum, Williamsii—these three being stepping-stones one to the other—Lathomi, the rare reniforme, sulphureum, aneitense, speciosum, and a host of others, were all in excellent health, and mostly in strong force. Before leaving the Adiantums, I must not forget the charming little A. Capillus-Veneris daphnites, of which there is a large lot of most beautiful plants; also the North American A. pedatum, of which there are two distinct forms, one of which may be regarded as normal, having flat pinnules, while in the other the pinnules are distinctly curled upwards, and if one may be godfather I would propose that it should be named crispum. Adiantopsis radiata is so much like a Maidenhair Fern that one may be pardoned for naming it with them, but really it belongs to a section of Cheilanthes. It is a charming Fern, and never have I seen it in better condition than at Sale, all the plants being in the best possible health, with their pretty radiating fronds. Being a native of Tropical America, this plant is grown in stove heat.

The Spleenworts also muster in strong force both as regards the number of varieties and plants. There are several South African forms which are by no means satisfactorily identified, and it is quite likely some fresh species may turn up. A. affine and species or varieties clustering round it are especially worth attention. There is also an excellent variety of A. furcatum, named laceratum, which is very graceful in appearance, and is certainly one of the best cool-house Spleenworts in cultivation. A. bulbiferum is a very scarce plant; the plant usually supplied as such is A. bifolium, which is here largely grown; and a most useful subject it is. A. luxum, resectum, Fernandezianum, and flabellifolium, are also temperate Ferns of the first merit; while too much praise cannot be levied upon A. rutæfolium, which we have never seen so abundant anywhere as at Sale; handsome plants in all sizes plainly reveal its decorative and most useful character. I quite think this will ultimately prove itself one of the most useful of all Ferns. Nice batches of the rock Spleenwort (A. fontanum) and the Pyrenean A. fissum are attractive; the latter is a very pretty species, while septentrionale, germanicum, and the queer little Seelosii are represented, with many other hardy or frame Ferns. Glancing at the stove Aspleniums we notice the graceful alatum also the old and much too seldom seen A. Belangerii. Here, too, are A. abscissum, Baptistii, cicutarium, formosum, heterodon, longissimum—excellent for baskets or mural pockets—and the charming viviparum, the latter one of the best case Ferns in cultivation—all of which are most attractive kinds. The Bird's-nest Fern, A. nidus, and the charming little A. obtusilobum are also well grown; the latter is arranged in pot pyramids, and very pretty it looks.

Cheilanthes, Nothochlænas, and Pellæas constitute a most interesting series, and it is when amongst these gems that the blood of the enthusiast reaches fever-heat. I mention these together because, in my opinion, they should be grown together, and further, because I regard them as a beautiful group. Of the former genus there are many kinds. Fancy the exquisite beauty of the "Lace Fern" (C. elegans), as it droops over the shelf upon which it stands, each frond a picture of beauty; this species is especially well suited at Sale. Other species of Cheilanthes we

admired and made note of are gracillima, tenuis, viscosa, alabamensis, californica, Clevelandii, the very rare Eatoni and Fendleri, lanuginosa, and the extremely scarce Lindheimeri (a most charming species), multifida, Sieberi, tomentosa, viscida, and Wrightii; these, with others, formed a most interesting series, which might well engage one's attention for a much more extended period. C. Eatoni is a very pretty species. Accommodated with them was a charming batch of the rare Gymnogramma hispida with its triangular woolly fronds; also a few plants of the rarer G. vestita from the Indian hills, and some of the Californian G. triangularis. The species of Nothochlæna are also numerous; especially noticeable was a fine batch of the little golden-fronded N. flavens, and the silvery N. nivea; also Eckloniana, rufa, sinuata—a very lovely species, with the underside of the fronds densely clothed with silvery scales; while well worth mention are candida, dealbata, Grayii—a very rare and and pretty species—Lemmonii, the charming S. European Maranta Newberryi, and the very scarce Parryi, which perhaps is scarcely found in any other collection. The Pellæas are also well grown, and numerous; indeed it would be difficult to know where to find such another lot. Take the more familiar European P. atropurpurea, or the Bird's-foot Pellæa (P. ornithopus) from California as examples; here they are in good numbers, and quite happy, and the same may be said of the charming P. calomelanos, andromedifolia, densa, the rare and very charming Bridgesii, Breweri, geranifolia, intramarginalis, and the ever-graceful ternifolia with its pretty arching fronds, the stipes of which pass through the glaucous pinnæ, while that very scarce North American, P. Wrightiana, is quite at home, producing excellent fronds; and we must not forget a handsome variety of the old P. rotundifolia named cordifolia. The pinnæ are oblong, cordate at the base, and well developed plants are most attractive.

A house is devoted to filmy Ferns, and here in the greatest luxuriance are the Todeas, excellent specimens of superba, Fraseri, and pellucida—the latter extremely beautiful. Several species of Trichomanes and Hymenophyllum are in excellent condition; the Killarney Fern is charming, especially the variety dissectum. The curious and pretty T. reniforme is also well grown, also the rare little T. Petersii of Carolina, and auriculatum, crispum, venosum, and Luschnathianum. Among the Hymenophyllums demissum flexuosum, pulcherrimum, Tunbridgense, &c., a frame outside of the latter planted out is in admirable condition, also frames of Todeas, which were out during the winter and subjected to frost, which, however, had no prejudicial effect upon them.

Davallias are largely grown, and one met with many good things. The useful D. fijiensis is largely grown, but as a decorative species this is superseded by its variety plumosa, which produces larger, broader, and more copiously divided fronds, and is in every way a more vigorous grower. One very distinctive characteristic Mr. J. Birkenhead pointed out was the peculiar disposition of the very scaly rhizomes to grow perpendicularly, or nearly so, and not prostate, as in the normal form, hence good plants are attached to portions of stems. D. Kunzei and D. solida are also well grown, on blocks of cork fastened with copper wire. The rare little D. parvula and D. heterophylla are also very happy, as well as D. hirsuta, D. chærophylla, and D. bullata. D. Mooreana is largely grown in all stages.

Space will not permit me to specialise any other genera, but some other varieties can scarcely be passed over without notice, and first there is the distinct and beautiful little Aspidium mohrioides—a veritable little gem, a picture even of Fern greenery, with its deep green oblong-lanceolate fronds with densely imbricated segments, coming to us from Patagonia and the Cordilleras of Chili, and which is a cool-house or case Fern *par excellence*. While with the Shield Ferns I may mention an Indian form of A. falcatum, approaching, but quite distinct from A. caryotideum; the pinnæ are broader across the base, the terminal one especially, and more deeply lobed; the apices of the lobes and lateral pinnæ are elongated, almost caudate—it is a most effective kind, but not yet offered for sale. Lastrea Richardsii multifida is a very effective Fern, and grown in quantity. Polypodium glaucophyllum is a very handsome species, the back surface of the fronds being very glaucous. A most striking Fern exists under the name of Pleopeltis fossa, producing very variable fronds, some simple, others sparingly lobed, while others are freely lobed, the plants presenting a very distinct appearance. P. pictus is very handsome, and the rare little Drymoglossum piloselloides is very happy grown on blocks. Gymnogramma Wettenhalliana is very pretty, and abundantly grown; and we saw the handsome decomposita and the silvery peruviana in the best condition. Sadleria cyatheoides and pallida are both rare small Tree Ferns. Dicksonia davalloides Youngi is a very handsome large growing variety, admirably adapted for the embellishment of a large rockery. Doryopteris sagittifolia alcyonis is a very distinct and striking Fern, the fronds being curiously divided. A Nephrodium under the name of N. molle Sangwelli, is we believe quite new even to literature—it certainly has some affinity to molle, but the fronds are broadly deltoid, and superficially the plant is quite distinct from molle; a large number of molle corymbiferum are grown, a very handsome Fern, reproducing itself from spores. One is always reminded of a trite saying, which is accredited to Mr. Baker when first examining this form "Dear me!—molle is gone mad!"

HARDY FERNS.—These are mainly grown in a branch nursery, but one's time was far too short and nothing more than a cursory glance was enjoyed, but sufficient to know the collection is very rich, composed of thousands of the best varieties, including the North American Osmundas, in grand condition, Struthiopteris germanica, broad masses of the Oak Fern, in the happiest luxuriance, the Beech and Parsley are also strongly represented. Almost countless are the forms of the Lady Fern, Scolopendrium, Polystichum, Lastræa, and Polpodium. Several houses and frames are crowded with them, while broad quarters are planted out beneath small trees. Indeed this as well as the other nursery is a real Fern world where countless differentiations are to be seen and admired. But I must leave and draw this imperfect sketch of one of the richest collections of Ferns to a close; by strongly urging all Fern lovers to avail themselves of the treat afforded at Sale; it feeds the most finely strung enthusiasm, a treat greatly enhanced by the hospitality of the Messrs. Birkenhead. I may mention a curious instance of Ivy growth to which my attention was drawn by Mr. William Birkenhead: a strong shoot found its way from the outside, through the wall, into the sitting-room, where it was encouraged, and has made excellent growth, being trained inside the window. If memory serves well I think it has been inside two years. By what method of growth was the shoot thus forced through the wall? Why did it leave the air and sunshine? *Pteris.*

CARNATION SOUVENIR DE LA MALMAISON.

A SUPERB lot of this beautiful plant is now in bloom in Mr. Leopold de Rothschild's well appointed garden at Ascott, where they present a most lovely sight, and give, perhaps, the best example of what can be done with it which has ever been heard of. The whole of a span-roofed house 42 feet in length and in two compartments is entirely filled with stout bushes of this Carnation, every one of them furnished with stout flower-spikes, each bearing many buds and blooms, the latter varying from 3 to 4½ inches in diameter, and giving off the most delightful odour. The sight which meets the eye as it glances over the enormous uplifted heads of delicate blush blooms is indescribable, and the beauty of the flowers is well shown up by the stout healthy foliage of the plants, which is also assisted by a neat edging of Isolepis gracilis. Nothing in its way can compare with the beauty of this plant when it is well grown, and few plants are more remunerative to grow for cut flowers with those who cultivate it successfully, but unfortunately by far the greater part of those who attempt it fail; we are therefore glad to be able to give Mr. Jennings' method of treatment, as similar proceeding should ensure a like result, and such a result leaves nothing to be desired in connection with Souvenir de la Malmaison Carnations.

In the first place, Mr. Jennings propagates fresh stock every year, only saving the old plants until sufficient young ones are obtained; thus the grand show now to be seen in plants from 1 foot to 1½ foot across, is from plants not yet quite a year old. In the second place, Mr. Jennings always gets his young stock from layers. Beginning in the first week in July, all the plants which have done flowering are plunged, pots and all, in a cold pit, in rather fine soil composed of loam, peat, and sand, and the grass is at once layered in it. The lights are left off the pit, but are kept ready to put on in case of heavy rains, as too much water is found to be detrimental to the free rooting of the layers, and causes them to die off. In about a month the layers are ready, and those which are not ready are not of much use, as the slow rooting ones are always stubborn. The whole of the bed is therefore gone over about a month after layering, and the good layers potted into 60-size pots, and are still kept in cold pits. During the summer they are potted on as they require it until the month of September, when the last shift is given into 32's, 24's, and 16-size pots, according as the prospect of each plant may seem to indicate. The compost used on each occasion is turfy loam about two-thirds, and peat and sand one-third, with a dash of soot added to the whole: this last is a great check to the wireworm, which often plays such havoc with this plant. At the close of the summer the lights are put over the plants, and they are kept in the cold pits throughout the winter and removed to the houses in April, there to remain until their blooms are over.

Several new forms of Malmaison Carnation have been introduced, of which a few are grown here, but there appears to be only one of them tolerable—the pink one, and that can well be done without. A sight of the wonderful display which Mr. Jennings' skill has conjured up at Ascott would set any one eager to grow Souvenir de la Malmaison Carnations; let us hope that this note of his mode of treatment may be useful to many who have been vexed aforetime with it.

THE SILVER FIR.

AMONG the most useful, and at the same time ornamental, of our timber trees must be ranked the Silver Fir. Its dark green foliage, noble boles covered with bark of so pale a colour that it has given the name of Silver Fir, and its irregular branching head give it a distinct appearance. The silvery character of the bark is especially obvious when the bark is wet with rain or dew. A ride through the forests of Eastern France, even in a railway train, will enable the traveller to form some idea of the noble proportions and shining colour of the tree. Our illustration (fig. 1) is taken from a photograph by Mr. Vernon Heath of a Silver Fir growing in the Duke of Argyle's grounds at Roseneath, Dumbartonshire, probably the one which at the date of the publication of Loudon's *Arboretum* was 124 feet high. It shows one character which, though by no means uncommon, yet always seems to excite surprise even among foresters. We allude to the growth of erect branches like leaders from some of the horizontal limbs.

Some Firs are much more prone to this than others, particularly the Menzies Fir and the beautiful Ajanese Fir, Picea ajanensis. If these be examined in spring it will frequently be found that small shoots spring in an erect position (⊥) from the branches. On the ordinary shoots the leaves are arranged principally into two rows, as may be shown thus —O—, the circle indicating the branch, the lines the leaves; but on these erect shoots the leaves, instead of being all twisted so as to form two rows, retain their original character and diverge on all sides, ✳. Such shoots as these usually either fall off, or they become horizontal like the rest, and then the leaves likewise become more or less two-ranked. It will be remembered that this two-ranked arrangement is only a seeming one, for the leaves originate on all sides, but some of them become twisted so as to form two rows. On the leader shoot the leaves are not twisted, and come off on all sides. These little erect shoots, as we have said, generally disappear or lose their character, but sometimes they persist, and then produce the appearance such as is shown in the fine tree in our illustration.

The timber of the Silver Fir, especially when grown singly, is softer than that of the Spruce or Scotch, and hence is less valuable for building purposes where durability is required, but for ordinary indoor carpentry work, charcoal, &c., it is well adapted. In this country it prefers a moist, but not too stiff soil, and a damp shady situation. Nevertheless, it is somewhat spring-tender when young, and is very subject to lose its leader. It is of slow growth, and is in perfection as a timber tree when it arrives at

100—120 years of age, but Grigor mentions many instances of trees of 110—120 feet high in various parts of England and Scotland, which have produced 200 cubic feet of timber at seventy years of age. It is said to have been introduced into this country in 1603, by Serjeant Newdigate, who planted them at Harefield, Middlesex, where they were seen and noted by Evelyn.

The Nordmann Fir, Abies Nordmanniana, is probably only a geographical variety of the common Silver Fir, and from its hardihood, robust character, and rapid growth, bids fair to be superior as a timber tree to the common Silver, and to be handsomer also. In fact, there are few if any trees known to us, which, from the few data we have at command, are more promising than this, but we are at present absolutely without information as to the value of the timber.



Fig. 1.—Silver firs at Roseneath, Dumbartonshire.

NOTES ON PÆONIES.—IV.

Subgenus II. Pæonia proper.—Stems herbaceous. Root a cluster of fusiform fibres. Disc not produced into a cup.

Section 3.—Follicles tomentose, spreading when mature from the very base.

17. *P. corallina*, Retz., Obs., iii., 34; Anders., Monogr., No. 6; DC., Prodr., i., 65; Reich., Ic. Germ., tab. 128, fig. 4745; Engl., Bot., tab. 1513, 3d edit., t. 50. P. mascula, Miller, Gard. Dict., edit. vi., No. 1.—Tubers of the root fusiform. Stem 2—3 feet long, glabrous, never more than 1-headed. Leaves 5—6 to a stem, glabrous on both sides, moderately firm in texture, dark green above, pale green beneath, the lower simply biternate, with nine distinct oblong acute segments, the side ones 1—1½ inch broad, the end one sometimes 2 inches broad, and reaching a length of 3—4 inches. Peduncle short, so that the flowers do not much overtop the leaves. Outer sepals foliaceous, lanceolate, simple; inner obtuse. Petals 6—8, obovate or suborbicular, 2—3 inches long, crimson or rose-red. Follicles 3—4, rarely 5, spreading from the base when fully mature, decurved, densely villose, 1½ inch long; stigma small, scarlet, folded together, recurved.

Spread as a wild plant across Europe from France to Asia Minor. Not so well known in gardens as P. officinalis. In company with Russi and triternata it may be known from all the other species by its leaves, the segments of which, casual exceptions apart, are quite distinct from one another at the base, and nine in number in the fully developed lower leaves.

18. *P. Russi*, Bivon, Man. Sic., iv., 12; DC., Prodr., i., 66; Gren. and Godr., Fl. France, i., 52.—Stem 1—1½ foot long, always 1-headed. Leaves thin in texture, green and glabrous above, pale green and densely pubescent beneath, the lower exactly biternate, with nine ovate or oblong distinct acute segments, 1—2 inches broad, the end one 3—4 inches long. Flower like that of P. corallina. Follicles 3—4, finely pubescent, spreading from the base when mature, finally 1½ inch long.

A native of Corsica, Sicily, Sardinia, and Algeria. Scarcely more than a variety of P. corallina.

19. *P. triternata*, Pallas, Nov. Act. Petrop., x., 312; DC., Prodr., i., 65; Ledeb., Fl. Ross., i., 73. P. corallina var. triternata, Boiss., Fl. Orient., i., 97. P. daurica, Andr., Bot. Rep., t. 486; Bot. Mag., t. 1441; Anders., Monogr., No. 7.—Root-tubers thick. Stem 1½—2 feet long, glabrous, never more than 1-flowered. Leaves 5—6 to a stem, glabrous, pale green above, glaucous beneath, with broad oblong or obovate leaflets, obtusely rounded at the apex, with a small cusp, not confluent at the base, the side ones often 2 inches broad, and the end one obovate or orbicular, 3—4 inches long and broad. Outer sepals foliaceous; inner obtuse. Petals 6—8, obovate, rose-red, 2—2½ inches long. Follicles 2—4, densely tomentose, spreading from the base when mature; stigmas small, ovate, folded together, recurved.

A native of the Caucasus, Asia Minor, and the Crimea. It is a near ally of P. corallina, with which Boissier now unites it. The name daurica, under which Anderson describes it, was given to it under a mistake as to its native country. Anderson remarks upon it, "Though in general habit a good deal resembling P. corallina, it is nevertheless essentially distinct from that species in having the leaves always rounded, partially cordate, oblique and much undulated; whereas those of the former are more or less pointed, and nearly flat, the spherical, brownish-black, reticulated seeds, and the yellow tint of its leaves, stalks and germens, would otherwise characterise it. Its leaves are diposed to wither at the points, and to remain longer on the stalks than those of the others. Its flower is of a pleasant pale rose colour. Amongst seedlings it is seen to vary in the degree of undulation of its leaves, but retains its essential character throughout."

20. *P. aristina*, Anders., Monogr., No. 10; DC.,

Prod., i., 66. P. tartarica, Miller, Gard. Dict., edit. vii No. 5 (Icones, t. 199). P. cretica (Clusius), Sabine; Lindl., in Bot. Reg., t. 819. P. lobata, Reich., Ic. Germ., t. 123, fig. 4741 *a*, *non* Desf.—Stem 2—3 feet long, hairy upwards, with never more than a single flower. Leaves 5—6 on a stem, green and glabrous above, pale green, or rather glaucous and pubescent beneath, the oblong or oblong-lanceolate segments copiously confluent, and not more than 1—1½ inch broad, about thirty in the fully developed lower leaves. Corolla dark red in the type, 4 inches in diameter. Follicles 3—4, densely tomentose, ovoid, spreading almost horizontally from the base, when mature 1 inch long, ½ inch diameter; stigma small, dark red, recurved.

This is well-known in gardens, but it is not distinct from peregrina in a broad sense, and no doubt is included under that name by Boissier and other authors of Floras from the various regions of Southern Europe. Miller's figure just cited represents excellently the ordinary garden form of the plant. P. cretica is distinguished from the type by "its dwarfer habit, flesh-coloured flowers changing to nearly white, and shining coriaceous flat blistered leaves, which are very glaucous beneath."

21. *P. decora*, Anders., Monogr., No. 9; DC., Prodr., i., 65; Boiss., Fl. Orient., i., 98.—Stem 2—3 feet long, glabrous, not bearing more than a single flower. Leaves 5—6 to a stem, pale green or slightly glaucous, red at the margin, glabrous, or slightly pilose beneath, the segments numerous and very confluent, 30—40 to the fully-developed leaves. Outer sepals broad and foliaceous. Petals 6—8, crimson, 1½—2 inches long, and not more than an inch broad in our wild specimens. Follicles 2—3, tomentose, ovoid, very thick, diverging widely when mature.

The alliance of this is with P. arietina. I have not had the opportunity of studying it alive, and it has not been figured, but it is maintained by Boissier as a distinct species. Both the end and lowest side segments of the fully developed leaves have five divisions, which run together so as to form a broad wing all the way up the midrib. Our wild dried specimens came from Anatolia and Servia. Anderson identifies it with the Pæonia byzantina of Clusius (*Hist.*, p. 279), and says of it:—"It is remarkable for the elegant stateliness of its habit, each stalk, accompanied by its horizontal leaves, diminishing as they ascend, and terminated by its flower (which is rather smaller than is usual in the genus), supported on a long peduncle, exhibits somewhat of a pyramidal figure. Its leaflets are constantly more or less longitudinally inflexed or concave; in this respect it resembles the last described (humilis), but differs from it in the leaflets being broad and obtuse. The follicles are less pubescent than those of the three following species (arietina, peregrina, and paradoxa), but more so than those of the preceding. They are very large, and at maturity diverge widely."

22. *P. Broteri*, Boiss. et Reut., Diag., 4; Willk. et Lange, Fl. Hisp., iii., 975. P. lusitanica, Miller, Gard. Dict., edit. ii., No. 6? P. officinalis, Brotero, Fl. Lusit., ii., 299.—Stems glabrous, 1-flowered, 1—2 feet long. Leaves 6—8 to a stem, glabrous on both surfaces, bright green above, glaucescent beneath, the terminal oblong acute segment 1—1½ inch broad at the middle, the fully developed lower leaves with about 20 segments, scarcely at all confluent at the base, but the upper side ones cuneately decurrent on the rachis. Outer sepals very foliaceous. Petals 6—8, obovate-cuneate, about 2 inches long, crimson or rose-red, rarely white. Follicles 2—4, densely pilose, 1½ inch long, spreading horizontally from the base when mature.

A native of the mountainous and subalpine regions of Spain and Portugal. It is intermediate in general character between officinalis and corallina, neither of which are admitted by Willkomm and Lange as natives of the Iberian peninsula.

This concludes the series of known species. *J. G. Baker.*

THALICTRUM AQUILEGIFOLIUM. — This fine herbaceous plant was cultivated by Philip Miller more than a century and a half ago. There are two distinct forms in gardens now, one with purplish stamens, and the other with the filaments snow-white. Both are equally handsome, and are well worth a place in every herbaceous border. The foliage is bolder and more striking than that of perhaps any other Thalictrum usually found in gardens, and the flowers are decidedly more showy than those of the vast majority. It grows about 2 feet in height, and in a wild state the species is widely distributed throughout Central and Southern Europe.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF CLERODENDRONS.—Among the many kinds of plants useful for decorative and other purposes the Clerodendron holds a place, and the increase and culture of this beautiful plant merits more attention and labour than is generally bestowed upon it. Although the cuttings of some species do not readily root, the scope of the propagator is not too limited by being restricted in some cases to grafting and seeds; and it will be found that these methods will yield an ample success if properly carried out. It is a good plan to select a few good varieties, which we intend to do, giving the methods of propagation and their culture.

CLERODENDRON SPLENDENS.—Of climbing Clerodendrons C. splendens is remarkable as one of those sorts the cuttings of which will not root freely, but there are two means of grafting them which can be employed. In grafting on roots those of C. Thompsoni are the best. From the side of each of the roots which have been selected a piece an inch long and one-eighth of an inch deep should be cut out to receive the graft, which should be shaped to fit the cut. The graft must be carefully bound to the root with a strong piece of matting. When potting them up the top of the root-graft should be placed level with the surface of the soil. Before potting it is of the greatest importance to have the soil well damped, in order to sustain the grafts, which must not be watered for a week after potting. The soil best adapted to the Clerodendron grafts or cuttings is composed of half peat, a quarter loam, and a quarter silver-sand, the whole well mixed together, and sifted or rubbed through a ¼-inch sieve. The root-grafts should be placed on a gentle bottom-heat in a cutting-case, and require ventilation for an hour during the morning, and also shading to protect them from the fierce rays of the sun. After a week has elapsed, and whenever the cuttings become dry, they require to be well watered. As soon as the grafts have united, which will be in about eight or nine days, they can be removed from the cutting-case and stood upon an open bottom-heat for five or six days. At the end of that time they should be potted into large 60-sized pots, in soil made up of half turfy loam, a quarter of good leaf-soil, and a quarter river-sand, well mixed together and sifted. It is well to support each graft with a stick, to which it should be tied in one place only. It is necessary to replace them upon the bottom-heat until they become sufficiently strong to necessitate their being potted into larger (48-sized) pots.

There are also two methods of grafting upon the stem or stock, and C. Thompsoni, C. Balfourianum, C. speciosa, and C. Rollissoni, afford the best stocks upon which to graft C. splendens. One method is, if the plants are very strong, to cut them down, so as to leave 2 inches of the stem above the soil. What is termed a "clean" cut should be made at the top of the stock, from the side of which a piece 1 inch long and one-eighth of an inch deep should be cut out. The cut will be in shape like the letter V, and the graft must be made to fit it. It is of importance that the bark of the graft should be made to meet the bark of the stock, the former being carefully bound to the latter with strong matting. In the other method of grafting one-half or more of the shoots are cut off the stock, leaving only a sufficient number to carry the sap, and all the eyes at the bottom of the stem are rubbed off to prevent the plant sending out shoots after it has been grafted. A slip an inch in length is cut off the side of the stock, to which the graft, after having been properly shaped, is carefully bound with strong matting. The grafts should be made as near the soil as possible.

The stock-grafts must be placed in the cutting-frame, which should be ventilated for an hour in the morning, and shaded while the sun shines. After the grafts have united they must be removed to another frame, where air is always kept on; this will harden the plants, and prepare them for the open bottom-heat, upon which they will remain, outside the case, for five or six days. By that time they will have become sufficiently hard, and can be potted up; each plant being supported with a stick by a single tie.

CLERODENDRON THOMPSONI, C. SPECIOSUM, C. ROLLISSONI, C. BALFOURIANUM. — These varieties root so freely from cuttings that it is not necessary to graft them. The cuttings should be taken at the time the wood is hardening, and they should be strong pieces, with four or six leaves attached to each piece. It is not necessary to cut them off to a joint. Having cut the bottom of the cuttings with a sharp knife they can be potted up into long thumbs, and pressing the soil tightly round each cutting. They require to be watered before being put in the cutting-frame, and when they are in they should never be allowed to become dry. They also require air for an hour in the morning, and shading from the rays of the sun. When they have rooted they can be taken out of the case and placed upon open bottom-heat for seven or eight days. At the expiration of that period they can be potted into large 6's, placing a stick to each cutting, watering them, and then replacing upon the bottom-heat; they can be potted into 48's as soon as they have rooted through.

C. BALFOURIANUM FROM SEED. — It is very handy to have a few seedlings of this plant, seeing that it makes such a good free stock upon which to graft C. splendens. As a rule it seeds very freely of its own accord, but in order to ensure success it is advisable to fertilise it, which is soon done with a camel's-hair brush. When the seed is ripe separate it from the husks and sow in pans, each seed to be about half an inch apart, and cover them with a quarter of an inch of soil. After watering them, place them in a cutting-frame till they have grown about 2 inches in height, when they can be placed outside the case for a few days. Afterwards pot into thumb-pots, support by little sticks, water well, and replace upon bottom-heat. They can be potted into large 60's when they have rooted through, and repotted as necessity dictates.

CULTURE. — When the Clerodendron has been potted into 16-sized pots it will not be necessary to repot it for several years, and it will only require a little strong soil on the surface year by year. When in flower they are very useful for decorative and other purposes in the conservatory and elsewhere. They will live in a temperature as low as 45°, and in summer-time they will stand a high temperature with plenty of air.

In training them six Bamboo canes, or three 4-feet laths, each split into two parts, and painted green, should be placed around the edge of the pot at equal distances, and at the top each stick should be tied to a ring of wire running around them; the plants can then be trained round the sticks. Place the plants in a good growing house; keep them well syringed and ventilated. When the plant has covered and reached the top of the trellis, every four shoots it makes should be pinched back to two. By thus continually pinching the plant back it matures into a semi-shrubby state, and causes the plant to flower very freely.

C. Balfourianum will become a fine plant when trained under the roof over the pathway of the house. For this purpose it should be potted into a No. 1 pot, and placed in any convenient place for training to the roof. Four wires of the required length should be fixed along the roof about a foot from the glass. The plant must be trained over the pathway because, as it requires so much syringing, the continual drip of water would injure the plants below.

The plant should be stopped when it has grown the required length, and at the time it is out of flower the side-shoots should be cut back to two leaves. This will keep the plant in a free flowering state. *T. O.*

DROSERA CAPENSIS. — Independently of the beautiful rosy-purple flowers of this species, the foliage alone would constitute it a desirable plant for cultivation. The long linear strap-shaped leaves are clustered or aggregated at the top of short erect stems, and densely covered with red gland-tipped hairs that glisten at all times with a viscid excreted juice, giving them the characteristic appearance now so familiar to most people in this interesting class of plants. The flowers expand one at a time only from the upper angle or knee of the curved flower-scape, but as several flower-scapes are produced on the plant, and a long succession maintained, it possesses a double interest for the cultivator. It is of comparatively recent introduction from the Cape, and is figured in the *Botanical Magazine*, t. 6583. Several other species equally or even more showy and interesting are found at the Cape, the introduction of which is extremely desirable. The present one may be seen in the cool porch adjoining the Orchid-house at Kew.

A PEEP INTO SOME JERSEY GARDENS, &c.

MANY of our readers probably enough may be visiting Jersey during the present summer, and as strangers in a strange land may like to know where best they can get a peep at those places of gardening interest which the guide books cannot, and do not, for patent reasons, deal with. We are therefore, in this and another article, about to tell them whither they should hie in order to see to perfection the floricultural and one or two other agronomic industries for which this island is far-famed; premising, however, that as the spots to which we shall direct their steps are private property, so permission must be previously obtained before attempting entrance, for most, if not all, their occupants have a rooted objection to "droppers in," and, figuratively at least, have posted over their gates :—

"Let me have no intruders here—
Above all, keep the tourist from my sight."

BEAU SEJOUR.

The first homestead we shall suggest our friends to visit is Beau Sejour, Rouge Bouillon, the residence of Charles Godfray, Esq. Rouge Bouillon is upon the outskirts of the town of St. Helier, and but an easy stroll from almost any part of it. Upon entering its frontage, notice two of the largest and healthiest specimens in the island of the Cedrus Deodara growing on the lawn, and thickly and gracefully spreading their lower branches over it. They have been planted for many years, are thoroughly acclimatised, and are in truth magnificent trees—none to be seen better anywhere out of their natural habitats. Close beside these Cedars stands one of Lebanon, also a good and handsome tree, but paling in size and in beauty before its twin brethren of the Himalayas. From the lawn now pass into the conservatories, where Mr. Godfray will show you with well merited pride a large and valuable collection of Orchids, of which he is a most successful amateur grower. His list is much too numerous to give as a whole, but we may just mention that when we had the pleasure of inspecting the houses there were in splendid bloom Masdevallia chimæra, Cattleya citrina, Maxillaria luteoalba, Masdevallia Wagneri, Cypripedium lævigatum, and many others, including Vanilla planifolia and aromatica. This gentleman's speciality is the Orchidaceæ, but still he devotes attention to choice flowers generally. Let us try and recall to memory, hap-hazard, a few he possesses. For instance, a glorious specimen of Medinilla magnifica, upon which we counted no less than forty-eight bunches of its rich deep pink flowers, all well developed. Then he has some Anthuriums worth looking at, particularly so one A. Warocquianum, the long green velvety leaf of which measured more than 3 feet. Close beside this, and contrasting well with it, is an excellent growth of Impatiens Sultani, which since June of last year has never ceased to bloom in more or less profusion. Mr. Godfray's Gleichenias are remarkably good, the very best admittedly in Jersey. Of the G. semivestita and G. flabellata, when found, take a note of, for you will not see a better in your rambles among conservatories at home or abroad; and while noting, jot down also a few first-rate Clerodendron Balfourianum and some equally good Chrysophyllum macrophyllum, one of these latter particularly, in which the under-side of the Brobdingnagian foliage is about the richest dead gold in colour you may ever set eyes upon. The Bromeliaceæ, too, which will be pointed out to you, are many and super-excellent, with A 1 specimens among them of Æchmea, Bilbergia, Nidularium, Tillandsia, and others; and if you be lucky enough to find a choice plant of Rudgea macrocephala in flower, do not omit to include it among your memos. It is a thick pearl-white, waxy, quaint-looking flower, shooting out from the top of the plant, and looking not very unlike a diminutive Cauliflower. If you have never seen the Monstera deliciosa you have now the opportunity of inspecting two good healthy specimens of it in fruit, and which will put you in mind a little of the Bread Fruit of the West Indies and some parts of Ceylon, bar that the produce of the Monstera is conical instead of being globular or ovate, and that it is neither so large nor so nodulated. Like the Bread Fruit it is edible, but mawkishly sweet and more buttery-like in consistence. Mr. Godfray says that some of his gardeners appreciate its flavour immensely, but that he cannot touch it, nor indeed the generality of persons to whom he has offered it. It will be quite superfluous to enlarge upon the Pelargoniums, Cinerarias, Achimenes, Caladiums, Coleus, Convolvulus, and other flowers and plants Beau Sejour's master has on view; enough to say that they cannot be bettered. Nor can the Chinese Bananas be outdone anywhere, for from one was cut last year a bunch of golden luscious fruit which weighed between 60 and 70 lb. Mr. Godfray's greenhouses contain Date and other Palms in good growth, Coffee bushes in flower when we saw them, Cocoa, Tea and other plants entering into domestic economy, and last, though not by any means least, a young Durian (D. zibethinus) from Singapore—that delicate fruit, so offensive to the smell, so delicious to the taste, and concerning which we said something in a recent article. If you stroll into the kitchen garden you will observe trained against a wall a monster Pear tree (Beurré d'Aremberg), the largest in Jersey. The old Spanish adage has it—

"Quien no ha vista Sevilla
No ha vista Maravilla."

Let us be permitted to parody it and say—

"Gardeners who have in Jersey been,
And charming Beau Sejour not seen,
In truth have failed the best to see—
Of gardens in that isle that be."

MAINLAND.

The next place the visitor we write for should go to is Mainland, the residence of Moses Gilaut, Esq., in the parish of St. Lawrence. It is a pretty and by no means a long walk from Beau Sejour, through St. John's Cemetery, down the Bellozanne Valley, and so either across country or by the St. Aubyn's Road. Very far and very wide are the grounds of Mainland noted for their Camellias, that flower being Mr. Gilaut's speciality. He has Roses in multitudes; he has choice Gloxinias and Pelargoniums, but he does not seem to care much about them; Camellias are his particular vanity. He possesses some sixty or seventy named varieties of the flower, does this *l'homme aux Camellias*, so to call him, of all colours and tints and variegated shades, not growing, mark you, under glass, with one or two rare exceptions, but "all a growing and a blowing" out-of-doors, in clumps, in rows, in thickets, here, there, everywhere—a perfect forest of the tree, for some have attained such very respectable sizes that they may well be dignified with that name. To see this garden in the month of March, when every bush is a blaze of well-shaped, large, brilliant-coloured flowers, is to see a sight few of us get the opportunity of gloating over—*quoque ipse jucundissime vidi*, to alter Virgil a little; but you, friend, visitor aforesaid, coming in the summer-tide, will find no blooms, and will have mentally to picture what existed a month or two ago. *H. L. C.*

(To be continued.)

BOXLEY HILL, MAIDSTONE.

IT is frequently asserted that Kent is the Garden of England, and if the area of land under cultivation is referred to, the allusion is a pretty correct one. The traveller, as he wends his way along the dusty roads, and crooked lanes surrounded by hedges, cannot fail to be impressed with the luxuriant fields of Wheat, Onobrychis sativa, Trifolium pratense, and T. incarnatum, and the frequent occurrence of Hop fields, bristling with stakes now more than half covered with the twining stems. Each field, or number of fields, is attended with their quota of curious cone-topped kilns for drying the Hops. The cottage gardens are extremely gay everywhere with flowers of every hue, while the air is redolent with the perfume of Roses, Pinks, and Philadelphus. The hedges are well stocked with their usual flora; but amidst all this the botanist fails to discern what would meet with a keener welcome from his scrutinising eye, namely, the rarer and choicer members of the British flora. These have to be sought for on land unmolested by the ploughshare, which unfortunately is of rare occurrence in this part of the country.

A little to the eastward of Maidstone is a range of hills or downs, extending nearly from Rochester, in a south-easterly direction to Dover. On this we find the remnants of a rich and varied flora that has been chased hither by encroaching cultivation. A prominent and conspicuous part of this range, known as Boxley Hill, well clad with copsewood in many parts, and deeply scarred here and there with chalk-pits, may be taken as representing the bulk of the most interesting flora, and typical of the other parts of the range.

The number of species, and the very limited area on which they can all be picked up is alike wonderful and interesting. It points to the agreement of a number of conditions requisite for their welfare, amongst which may be mentioned that of soil, climate, shelter, and immunity from the disturbing influences of cultivation which extend to all (including the flat top) except the steepest slopes of the downs.

Orchids, although not numerically strong in species, nevertheless crop up wherever the nature of the ground and the copsewood offers the requisite conditions. Amongst these are Gymnadenia conopsea, Orchis maculata, Listera ovata, and the beautiful Ophrys apifera. Rosa spinosissima is very plentiful in open places, flowering profusely when only a few inches high, and filling the air with the fragrance of its white or pink tinted blossoms. Rosa canina and R. tomentosa also crop up occasionally. Viola hirta and Iris Pseud-Acorus are not in season, but very plentiful. The latter seems altogether out of place, but flowers and fruits under the shade of low trees and bushes, as is evidenced by the remains of last year's fruit with showy scarlet seeds. [Is not Iris fetidissima meant? ED.] Its tenacity of life, and the varying conditions and circumstances to which it can accommodate itself are very well shown by the wholly dissimilar and sometimes unlikely habitats it frequents. In shallow running streams, on the moist banks of ponds, brooks, rivers, or in boggy places it luxuriates and flowers with great freedom. On the other hand, when growing as it is is here, growth is more wiry and starved in appearance, but healthy withal. The intricate mass of wiry interlacing roots accounts for this power the plant has of adapting itself to its surroundings. In gardens its behaviour is well marked in a dry season, compared with other species, especially in a stiff clay soil. While others are killed outright, this will thrive and even flower.

Viburnum opulus, with its rayed Hydrangea-like inflorescence, is now in full beauty, while V. lantana is over or passing into fruit. The former is notable on account of its stipulate leaves, thus breaking down one of the most valid distinctions between the two natural orders Caprifoliaceæ and Rubiaceæ. Poisonous plants are well represented by Atropa belladonna, Daphne laureola, and Helleborus fœtidus. The first mentioned is just expanding its solitary unattractive flowers, while the two latter are in fruit. All are rare plants and frequently grown in gardens, the Belladonna being used for medicinal purposes, while the Hellebore is grown for its highly ornamental and finely divided foliage. The Daphne is sometimes planted in shrubberies for the sake of its low bushy habit and evergreen foliage. Lithospermum officinale affects the same habitat as a number of the other plants just mentioned, namely, in copses or bushy places. It is by no means a conspicuous plant, but interesting on account of its rarity and relationship with its beautiful blue-flowered congeners in gardens. Associated with these is the small red-fruited Fragaria vesca, now ripening its fruit, and peering from amongst the bushes as if to greet the sunshine.

On the margins of the low tangled scrub, and sufficiently protected from the sun, Asperula odorata revels in perfect freedom, displaying its white flowers and graceful fragrant foliage, that seem more attractive than they are under cultivation. Lysimachia nemorum and Melampyrum pratense affect the clearings where the rays of the sun may be modified but not obscured. In grassy open places fully exposed to the sun, Lotus corniculatus and Hippocrepis comosa cover the sward with broad patches of yellow, tinged to a varying extent with rich brown. Spiræa filipendula with its pretty foliage disputes the ground with Poterium Sanguisorba, while Chlora perfoliata and Anthyllis vulneraria are much less plentiful. Polygala vulgaris and Helianthemum vulgare are common weeds that adorn the turf everywhere. Silene inflata, Centaurea scabiosa, Scabiosa columbaria, and Peucedanum sativum frequent places somewhat similar to one another on the outskirts of the underwood where the soil is more broken and loose, affording free scope to their grosser herbage. The two latter are partial to a limestone soil, and are by no means common plants. If cultivated on the more exposed parts of rockwork, the true wild form of Scabiosa columbaria is really a neat and attractive plant. Some forms grown in gardens under this name are

inferior to the type, both in the size and colour of the flower. The Peucedanum has been cultivated in Britain since the time of the Romans, and seems hardly recognisable in a wild state, being of a much duller green and more hairy than the cultivated plant. Reseda lutea luxuriates on the barren sides of chalk pits, where nothing else apparently can find a subsistence. In open pastures on the more or less cultivated parts of the hill, many interesting or even ornamental plants are to be found scattered about in tolerable abundance. Amongst these may be mentioned Briza media, a very graceful grass indeed; Primula veris, Anagallis arvensis, Tragopogon pratensis, Rhinanthus crista-galli, and the great white Ox-eyed Daisy, that in many places proves itself the pest of hayfields as Papaver Rhœas does in cornfields, and likewise present here. Chenopodium Bonus-Henricus still clings to its old habitats near human dwellings. It is a dull, Dock-like plant of no beauty whatever, but possessed of some economical importance as a pot-herb, and used in the manner of Spinach. It is a familiar acquaintance by the sides of streets in old-fashioned country villages, and seems to have outlived the knowledge of the modern inhabitants as to its uses. *X.*

COLONIAL NOTES.

Royal Botanic Garden, Calcutta. — The planting-out of the Palm-house, the erection of which had been completed during the previous year, was the most noticeable work carried out in the garden during 1883-84. For this purpose, plants that had outgrown the limits of the former low-roofed conservatories were transplanted, while the interspaces between the larger plants were filled in by lower-growing species of various kinds—Aroids, Marantas, Selaginellas, and the like. The Palm-house already presents a handsome appearance, and the general effect of it will be greatly enhanced as the plants continue to grow.

The economic plants which engaged the Superintendent's attention during the year were the Sabai-grass (Andropogon involutus), the Paper Mulberry (Broussonetia papyrifera), the Cinnamon plant yielding the Cassia bark of commerce, and the Soy Bean. The Sabai-grass was extensively distributed in various parts of the province, and its suitability as a paper fibre has been established beyond doubt. The bark of the Paper Mulberry, which has an easy and rapid growth, was reported on by a paper manufacturer and pronounced to be "an admirable paper material." Dr. King believes that the plant is capable of producing one of the very best paper fibres known—a fibre at once strong and fine, and requiring very little bleach. A further consignment of the Cinnamon plant was received from Hong Kong during the year. The plants, though healthy, are quite young; and as they seem to grow slowly, it will be some time before their suitability to the soil of Bengal can be ascertained. The Soy Bean, of which Dr. King had arranged for a supply from Japan, was distributed during the year among planters and others for experimental cultivation. The result, as was anticipated, has been a failure.

Owing to the insufficient accommodation afforded by the old herbarium, it had not been possible to arrange and name a large collection of dried plants received during the past few years; but since the completion of the new building this work has made considerable progress under Mr. Brace's supervision. The interchange of seeds and plants went on actively during the year; 23,809 living plants and 3716 packets of seeds were distributed, the principal recipients being, as usual, station committees, cantonment magistrates, and superintendents of hospitals and gaols. A considerable number of plants was also sent to the International Exhibition in Calcutta. On the other hand, 9179 plants and 1038 packets of seeds were presented to the garden by various contributors. The receipts from the sale of surplus plants amounted to Rs. 1345-11-9, while the whole of the budget allotment of Rs. 70,350 was spent.

For the third year in succession, the Lloyd Botanical garden at Darjeeling suffered from the ravages of the cockchafer grub. Specimens of this grub and of the beetle into which it developes have been sent to a specialist in London for identification and report, but no answer has yet been received. Dr. King proposes to suspend all distribution of living plants from the garden, in case the grub shows itself again this year. A similar grub, it is stated, has proved very destructive in Ceylon to Coffee planted in "patana" or grass-land. Fortunately the Darjeeling grub has not as yet displayed any partiality for Tea. *From the Report of the Garden for* 1883—84.

DISEASE OF LILY OF THE VALLEY.

Lately an obliging correspondent of the *Gardeners' Chronicle*, Mr. Thomas Hebden, forwarded leaves of Lily of the Valley badly infested with the fungus named Æcidium convallariæ, Schum, and new to Britain. The examples were found on one of the small islets of Windermere, where the plant and its fungus were extremely abundant. [Mr. Plowright also mentions its occurrence near Scarborough. Ed.]

It is to be sincerely hoped that the parasite will keep where it is, and not travel to gardens, where the Lily of the Valley is such a valued ornament in the spring and early summer months. There is, however, every reason to expect that if the new pest has not already appeared elsewhere in Britain it will now speedily be seen in various quarters. It is not likely that the parasite will confine itself to the Lily of the Valley; there is every probability of its invading Liliaceous plants belonging to the genera near Convallaria. Whether it attacks the Fritillary, Tulip, &c., on the Continent we are unable to say, for our own books are at the moment not at hand, and on applying to the obliging officers of the British Museum we found that their books were, some at the binders', and others not at the moment easily accessible. Our time, too, has been limited, and the heat of the sun unlimited. Under these circumstances the account of the Continental distribution of the plant and its host plants abroad must be reserved for another time.



Fig. 2.—Disease of Lily of the Valley.

The fungus has a decided preference for the primary leaf, but in a few instances it affects the secondary leaf sparingly. Our illustration at fig. 2 shows one pair of leaves suffering from the disease. The fungus causes large spots to decay on the leaves, and these decayed patches fall out, leaving holes in the leaves. The fungus is, no doubt, more secure from injury on the dead leaf fragment, on the moist shaded ground, than on the living leaf.

Different members of the genus Æcidium have at various times been described in the *Gardeners' Chronicle*; the most familiar and notorious is the Æcidium of Barberry blight, often associated with the mildew of corn. All Æcidia are not alike in form and habit, and the one before us differs sufficiently from the type to make it worthy of illustration, not only for itself botanically, but as a novelty and a new plague to be dreaded by horticulturists. When a diseased place on a leaf is examined with a strong lens, numerous little yellow cups are seen; each cup is less in size than a pin's head. The cups are arranged in small circles less than a quarter of an inch across, like extremely minute Fairy Rings. In the middle of the ring a considerable number of very small dark coloured dots are seen, each dot being about the size of the point of a needle. Most of the cups and dots burst through the looser under-surface of the leaf, but in some few instances they grow on both sides, and a few cups and dots of erratic habit may be seen in various places outside the circle of the miniature Fairy Rings.

With a magnifying power of fifty diameters we see the cups as at A (fig. 3), the broken irregular edges of the cups turning outwards: these are the Æcidium cups of botanists. At B five of the much smaller dark coloured viscid dots are shown; each of these is furnished with a little central mouth, and from the mouth a few highly attenuated sticky threads emerge as illustrated. The minute dark coloured dots are the spermagones, and, as many botanists think, male organs of the Æcidium.

At C we have a section through a fragment of a leaf of the Lily of the Valley, with the Æcidium cups and spermagones in section; C is the upper surface of the leaf, and two Æcidium cups are seen cut through at D D; the cups have a bark or peridium as shown, it consists of a single row of transparent cells. The cups are usually full of small globular spores, but for convenience we for the present show them empty. Three spermagones embedded in the leaf are seen at E—one is thrusting its attenuated little tentacles out of the upper side of the leaf, one on the lower, and one is protruding the fine hair-like growths from both the upper and under surface. The leaf of a Lily of the Valley is extremely thin when compared with some other common leaves.

A section through a spermagonium is shown at F (fig. 4), enlarged 300 diameters; it is shown embedded in the constituent cells of a fragment of the leaf. Near F a larger leaf-cell may be seen full of the common little needle-like crystals termed raphides. Other rod-like crystals, very much larger in size, occur as isolated examples in different parts of the leaf.

It will be noticed that the mycelium of the fungus which runs amongst the intercellular spaces of the leaf weaves a sort of globular investing mesh of mycelium which forms a loose soft coating round the central threads, which in infancy all point towards the centre of the spermagonium. As maturity is reached the spermagonium bursts at its apex, and then the threads which till this time had all pointed to the centre, turn up, and grow out of the orifice as shown. When these threads have once emerged they become attenuated into long points of almost inconceivable fineness, and the extreme ends (as growth is continued) break up into atoms of the very smallest size. Both the points and the atoms are glutinous, but when placed in a film of water the little atoms become loosened away from the point, and they then oscillate with an animal-like motion round the apex of the protruded thread. The oscillating atoms are shown at G; these microscopic bodies are termed spermatia, and it is supposed that they have a function similar with that of pollen. The slightest current in the film of water carries them from one part of the glass to the other. The spermagones, the protruded threads, and the oscillating spermatia, differ somewhat in the species before us from the bodies of the same class often seen with other species of Æcidium. The observations above recorded are our own, and we are responsible for them. No illustration of a spermagonium with its spermatia could be more feeble and incorrect than the one which usually does duty for this subject. We refer to the venerable illustration and description, as reproduced in Sachs' *Handbook*. We will now ex-

amine the Æcidium cup; as this is a much larger body, a magnification of one half the power of the spermagonium will be sufficient. A cup is seen in section enlarged 150 diameters at fig. 5, the letter J shows the transparent shell, or, as it is termed by botanists, the peridium, composed of one row of cells; the thickness of the Lily of the Valley leaf is shown at H K, with its upper and lower colourless epidermal cells. The lower cells, it will be observed, are burst aside by this growth of the fungus cup. The spores of the fungus hang from the open mouth of the cup in chain-like or necklace-like fashion, as at L; and as the spores drop out of the cup they are continually renewed by the chain forming new spores at the part of the cup which is immersed in the leaf. The leaves of the Lily of the Valley, of course, grow in a perpendicular fashion, and so the spores, on being discharged from the cups, do not all fall to the ground, but a large number remain on the little inequalities of the leaf.

The reader must now imagine that the leaf of the invaded plant has become moist after a fine summer rain, or in the mists of morning or evening. The slightest film of moisture, of course, sets all the little glutinous oscillating spermatia in motion, and in their movements large numbers become attached to the spores from the cups. When the spermatia attach themselves to the Æcidium spores the latter probably become fertilised. The spore may be roughly compared with an ovule, and the spermatia to pollen grains. The act of fertilisation commonly takes place on a more or less decayed part of the leaf, and, as we said at the commencement of this paper, the decayed patches, with the spores, fall to the ground and hibernate or rest. A single spore with spermatia attached is shown at M (fig 2, p. 12), near the base of the pair of leaves. There is a difference of opinion amongst botanists as to whether some germinating Æcidium spores can by their germ-tubes enter a host plant of the same nature as the plant which originally bore them, and there at once reproduce an Æcidium. Certain botanists, according to their proclivities, think that some, or all, Æcidia have a Uredo stage (known or unknown), like the familiar red rust of corn, but other observers, the writer of these notes included, respectfully consider that the facts which are brought forward as proofs are very unsatisfactory, and capable of a different interpretation.

With the Æcidium we have just described our correspondent found an abundance of Puccinia betonicæ, DC., a familiar fungus on Stachys Betonica, Benth., a fungus known to have been in this country ever since fungi were properly studied. It is given in Hooker's *British Flora*, 1836. In the classification of the Uredines as manipulated by Schröder, and altered and modified by Messrs. Winter and Plowright, Puccinia betonicæ, DC., is termed a Micropuccinia, *i.e.*, a plant in which only the ordinary Puccinia spores are known.

We have a Uredo on Lilies, named U. Prostii, and an ally of this, if not the same plant, grows on Onions; there is also U. alliorum, DC., on Allium, and there is a Puccinia named P. asparagi, DC., on Asparagus, and P. mixta, Pl., on Onions, as well as Æcidium allii, Grev., and Uromyces alliorum, DC., on Allium, and Uromyces concentrica, Lev., on Hyacinths. We forbear entering into any discussion as to possible heterœcism or metōācea (as it is termed —alternation of generations, or dimorphism, is not correct enough) in the parasites of the Liliaceæ. It would be an act of cruelty to the readers of this paper. Wherever Æcidium convallariæ is seen it should be immediately gathered and burnt. *W. G. Smith.*

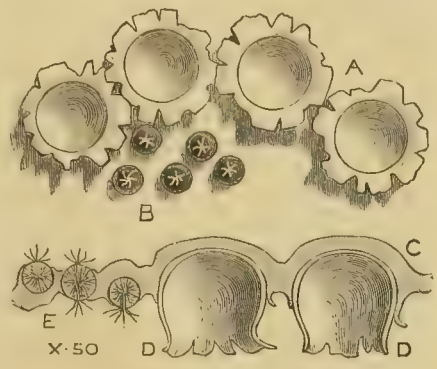


Fig. 3.—Æcidium convallariæ, Schum.

Cups, A, and spermagones, B, seen in elevation and section. Enlarged 50 diam.

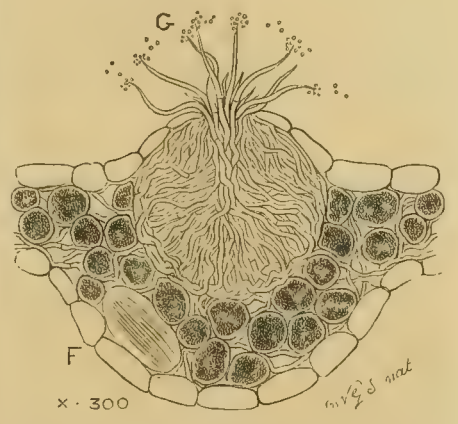


Fig. 4.—Section through a fragment of Lily of the Valley leaf,

Showing a spermagonium and spermatia of Æcidium convallariæ, Schum. Enlarged 300 diam.

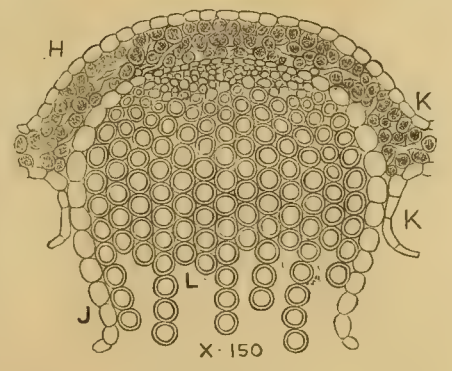


Fig. 5.—Section through fragment of Lily of the Valley leaf,

Showing cup of Æcidium convallariæ, Schum. Enlarged 150 diam.

Notices of Books.

Etude Générale du Genre Pommier et particulièrement des pommiers microcarpes ou pommiers d'ornement, &c. Par E. A Carrière. Paris: Libraire Agricole, 26, Rue Jacob. (Ornamental Crab Apple Trees, &c.)

This is a little treatise devoted to ornamental Apple trees, more especially to a group of small-fruited Apples or Crabs, many of which are so conspicuously beautiful in our shrubberies and plantations in spring. These are divided by M. Carrière into groups according to the nature of the fruit. Thus in his caducous group are included those in which the fruit rots on the tree and ultimately falls to the ground leaving the stalk still attached to the branch. Here are included Malus Torringo, oxyacanthoides, floribunda, tenuiflora (Ringo), baccata, luteola Kaido, and turbinata, of all of which descriptions are given. Unfortunately, we in this country have little opportunity of testing the value of M. Carrière's classification for, partly from climatal reasons, partly from other causes, we rarely see the fruits of these forms except in such cases as the Siberian Crab and a few others. M. Carrière's second group includes species which do not blet or rot on the tree but do so in the fruit-room. M. cerasifera, chrysocarpa = (Malus Kaido, or M. Ringo major, hort. Van Houtte) M. sulfurea, robusta, pisiformis ochroleuca, cratægicarpa, jucunda, violascens, Bertinis, patula, splendida, Kermesina, rutilans. In a third section, characterised by the fruits remaining on the branch for many months (twelve or more) in a dried state, M. Carrière enumerates M. microcarpa præcox, purpurea (M. prunifera and purpurea, hort.), serotina, eburnea, macrantha. The fourth section comprises those in which the fruits are mealy, they do not rot or shrivel, but become mealy; herein are comprised M. cœrulescens cinnabarina, Ringo, lucida, depressa = (cerasifera), coccinea = (cerasifera), fallax, aurea, fulvicarpa, insignis, lutescens, fastigiata, sphærica, pulchella, truncata, spectabilis, spectabilis grandiflora, expansa, translucens, ampla ornata, atropurpurea, formosa, mirabilis, flava, rubicunda, pallida, nigra, apiosa, heteromorpha, Jennensis, longifolia, flavida. A fifth group, called Intermedia, contains plants with green fruits, often with "grit," and with reddish anthers; among them are enumerated coronaria and sempervirens.

We have thought it well to place these names on record, for, doubtless, many of the plants will, as some have already done, find their way to our gardens. We ought to add that M. Carrière keeps us the genus Malus as distinct from Pyrus, and that all the forms above enumerated fall under his Malus microcarpa, though, for brevity's sake, we have omitted repeating the specific epithet on each occasion. Some sort of condensation is indeed desirable, in view of such names as (Pyrus) Malus microcarpa spectabilis grandiflora. Many of these forms are quite unknown to us, and are probably—indeed, it is so stated—merely seedling variations from better known forms.

When we have recalled to the reader the extreme beauty of some of these forms, we have said as much on that point as we can do in writing, but there are other matters of interest in M. Carrière's book to which we may appropriately call attention. First, as to ths distinction between Apples and Pears: Linnæus included both under one genus, Pyrus; others thought the Apple as distinct as the Pear, and adopted accordingly the two genera, Pyrus and Malus. Bentham and Hooker reverted to the Linnæan practice, which brought out a protest from no less an authority than the late M. Decaisne. Alluding to these matters, M. Carrière shows that in Pears (Pyrus) the anthers are orange-red, the fruits contain deposit of woody matter ("grit") and no malic acid. Apples (Malus), on the other hand, have yellow anthers, no grit to the fruit, and abundance of malic acid. But none of these characteristics are absolute. M. Carrière points out that Malus coronaria and sempervirens have reddish-orange anthers, M. microcarpa sempervirens has grit like a Pear, and the character derived from the presence or absence of malic acid is not constant. These facts and the circumstance that Apple trees not very rarely produce pear-shaped fruits, and *vice versâ*, while P. malifolia has the fruit of the Pear and the foliage of an Apple, might be taken to support Linnæus' view and that of Bentham and Hooker as to the existence of one genus only. But in everyday life we have to take things as we find them, without reference to scientific propriety, and perforce prefer expediency to strict accuracy, and hence we think M. Carrière has done well, from his point of view, to preserve the distinction between Pyrus and Malus—Pears and Apples—even although in some cases, (relatively extremely few), there are exceptional forms which nullify the arrangement of the botanists. M. Carrière terminates his book with some remarks on culture and propagation, and throws out a hint which we hope some of our cultivators will adopt, viz., that of grafting the plants on small plants of the Paradise or the Doucin stock, with a view to pot culture under glass, in the same way that beautiful varieties of Cratægus are often treated in this country.

Introduction to the Study of Modern Forest Economy. By John Crombie Brown, LL.D. Edinburgh: Oliver & Boyd.

Dr. Brown is indefatigable. He never seems to miss an opportunity, and now, of course, he has found an excellent one in the opening of the great Forestry Exhibition in Edinburgh. By persistent "pegging away" Dr. Brown hopes to promote the development of the Arboretum in Edinburgh, and more especially the formation of a School of Forestry in Scotland. On both these points we are in hearty sympathy with him. Much of what Dr. Brown lays before the reader in these pages he has published previously in one or other of his many books on the same subject. To a large extent, indeed, the present book may be considered in the light of a summary of what is contained in the previous volumes, and we must say that, in our own opinion, the process of condensation has been very advantageous to the reader.

A brief indication of the principal contents of the work will give the reader a general notion of its contents, while as to the way in which Dr. Brown has dealt with them it must suffice to say that the author has collated most of the principal treatises on forest lore on the Continent and in India, and has added many observations as the result of his own experience in South Africa and elsewhere. First we have a brief statement as to the area and extent of forests in Europe, followed by an account of their gradual destruction and the evils, climatal and as regards failure of supplies, consequent thereupon. The second and third parts deal with practical matters, and show how the forests of the Continent are managed and administered. It is to be regretted, we think, that Dr. Brown should not have found some English equivalents for the French terms he employs. Surely replanting or planting is to the full as expressive as "*Reboisement*," management as intelligible as "*exploitation*," clearance as "*Sartage*," selection as "*jardinage*," rotation or cropping for "*la methode à tire et aire*," coppice for "*furetage*" and "*taillis sous futaie*." Were these English terms, or any other which may be considered more expressive, made use of it would become apparent to the most conservative of wood-reeves that there was nothing radically different in the Continental systems of management from that which any British forester cognisant of his business, and not untrammelled by the exigencies of game preserving and the necessities of his master's balance-sheet, would recommend, and which he does, in fact, follow, much less systematically it is true, but as far as the circumstances of the case admit. This is really an important point, for once convince the British forester that he has been, like M. Jourdain, talking prose all his life, and that all that is desired is that he should in future talk (or act) to better advantage, and his natural insular dislike to foreign ways will vanish. It is, indeed, the different circumstances under which forestry is practised here and on the Continent which constitute the essential difference between the two methods. The foreign plan is scientifically exact and adapted to Government and autocratic establishments, but it could not be adopted satisfactorily in the case of private estates unless in exceptional cases. Still the scientific principles are necessarily the same in any case, and the intelligence of the well-trained forester might safely be trusted to make the necessary adaptations, and adjust the inevitable compromise. In India and the Colonies the circumstances are often widely different, and in addition to scientific principles and practical details of management the forester must possess to a considerable degree the characteristics of an equity judge to ensure that the rights of the natives be duly regarded, and those of a statesman to promote the present welfare and future advantage of the country at large. These evidently involve questions of first-rate importance, and for their successful handling demand not only practical experience in routine work, but an amount of trained intelligence which can only be secured by natural ability fostered and developed by adequate instruction such as a properly organised forest school can afford.

Orchid Notes and Gleanings.

MESSRS. BACKHOUSE'S UNSHADED ORCHIDS.—Another season's experience at the York Nurseries in growing Orchids without shade goes to confirm the opinions previously entertained as to the benefits derivable from the practice with such species as are found able to bear full exposure to the sun, and it may be well to add, with those that have been previously grown under conditions that make them capable of bearing the solar rays without injury, for in viewing a matter of this kind which has so important a bearing on the cultivation of these plants it is well to repeat what I have always urged when either speaking or writing on the subject, that not only is it necessary to be careful in submitting only such species to the treatment as are naturally benefited by direct sunlight, but also those which are in a state to bear its unrestricted force; without the latter of these conditions, as well as the former being present, failure will be the result. The inhabitants of the Soudan through usage are able to bear the full force of the cloudless Egyptian sun with scarcely a scrap of clothing to shield them from its burning rays, but a European, through the opposite usage of always having his body and the greater part of his limbs covered with clothes, would be in a sorry plight if placed under like conditions to the Oriental. It is similar with Orchids, even such species as naturally produce leaves of a texture that enables them to withstand the sun, when they have been subjected for a length of time to close shading and an over-moist atmosphere, are no more capable of standing it unshaded than the habitually clothed European. The big span-roofed house with clear glass in the roof is now not shaded in any way; in it are an immense number of Cattleyas in the best possible condition, they comprise most of the leading sorts, such as C. Mossiæ, C. Mendelii, C. Trianæ, C. gigas, C. Gaskelliana, C. Warneri, and others in thousands, as well as the two-leaved kinds, all with big, fat bulbs, and leaves as thick and tough, and in most cases larger than in the strongest imported examples. Of those in flower are C. gigas and the distinct variety C. gigas Sanderiana, of which there are now blooming several grand forms; it differs from the type species in having the sepals and petals of a darker colour, the leaves also differ, being of a redder shade, especially on the edges. An almost white form of C. Gaskelliana was in flower. In addition to the pure white sepals and petals the lip has only the faintest shade of purple in front of the large lemon-coloured interior blotch. Several fine varieties of C. Warneri were also blooming. The two-leaved section of Cattleyas do equally well under this exposed treatment; a small plant of C. Leopoldi has four spikes of bloom with from a dozen to sixteen flowers on a spike. Lælia elegans is here wonderfully strong, as also Lælia purpurata. The effect that this exposed treatment has on such things as Vanda teres is shown by the way in which little short growths of it bloom, producing as many flowers as are usually seen on growths 3 or 4 feet long. V. cœrulea is at home without shade, and also Epidendrums, such as E. nemorale, the growth and profuse flowering of which are such as is not usually seen. Cymbidium eburneum is evidently suited with like conditions, the growth being unexceptionable, the plants blooming profusely. The thicker leaved Dendrobiums all appear to revel in the sun, such kinds as D. Dalhousianum and D. calceolare bloom freely from every bit of growth they make. The same may be said of the many other Orchids here located in addition to those mentioned. Another matter connected with their blooming is that the flowers have more substance in them, enabling them to last considerably longer than they do when the plants are much shaded. In the adjoining span-roofed house the glass is not clear as in the preceding, but no shade is used. Large quantities of Cattleyas are in the grandest health; amongst them are numbers of C. Mendeli in bloom, showing the great variety this fine species presents. Here also are thousands of Lælia anceps and L. autumnalis, including the lovely L. autumnalis atro-rubens; one mass of L. autumnalis last year bore forty spikes of bloom, many of which carried from six to eight flowers. Sobralia macrantha does beautifully, making short growths which flower abundantly. The unsold remains of the immense stock of Odontoglossum vexillarium that was in this nursery a few years back are now in this house, strong, full of vigour, and blooming profusely; O. Phalænopsis, a ticklish subject as most growers can testify, is being tried in this house, and so far succeeds. Speaking collectively of the large and varied stock of Orchids in these unshaded houses they are remarkable for their rude healthy condition, the big shining bulbs are so plump that they look as if the stem was ready to burst, the leaves are large, and of a thickness rarely met with; as might be expected, the older leaves that have been formed some years are yellower in colour than where shaded, especially at this time of the year, but they get greener in autumn. By those who can appreciate a healthy, vigorous condition in the plants that enables them to keep on thriving for time indefinite, a little absence of colour in the leaves will not be reckoned of much account, and the defect is much more than balanced by the additional quantity of flowers produced. In one of the other long span-roofed houses was the finest mass of Vanda Sanderiana ever imported; it has eight leads, and is a picture of healthy growth, with the leaves all fresh and plump. This distinct and magnificent species has hitherto been a very difficult plant to import, but the York specimen looks as if it would repay the long figure (200 guineas) which it cost. Quantities of Cypripediums of the leading kinds and other heat-requiring Orchids are here in good condition; amongst them may be named a number of plants of the true Comparettia macrophylla; it bears branching spikes of flowers, lilac in colour, and much like the old Zygopetalum intermedium; it is a winter bloomer, lasting about three weeks. *T. B.*

LÆLIA DOMINIANA ROSEA, shown by Baron Schrœder at the last fortnightly meeting at South Kensington, and deservedly certificated by the committee, is worthy of something more than a cursory notice, not alone from the splendid character of its flowers, but also as an evidence of the long waiting which hybridisers of Orchids have in some cases to endure. It is one of the many magnificent crosses effected by Mr. Dominy in Messrs. Veitch's establishment, and is, we understand, a seedling from Lælia exoniensis, crossed with the pollen of the first flower that opened of Cattleya Dowiana, and plainly shows the influence in form exercised by the male parent in its very large flat lip, which is whole-coloured, and of the deepest ruby-crimson shade, with that peculiar velvety appearance which the flowers of Orchids of this colour often have; there is a little orange colour perceptible at the extreme base of the lip; the sepals and petals are in form like those of Lælia purpurata; in colour they may be described as like claret freely diluted with water. But ere this grand hybrid deigned to show its lovely flower it imposed a serious tax in the matter of time on the raisers: fifteen years elapsed before it unfolded its first bloom. One other plant only was the outcome of the cross, both of which we believe have passed into Baron Schrœder's hands at a figure which would be looked on as enough to stock a range of houses by many of those who look upon a flower as a flower, and only grow plants because they happen to be fashionable.

HARDY SHRUBS.

SOME time since the neat Daphne rupestris flowered here. It is a dwarf evergreen shrub with small dark green leaves and is of compact growth. It flowers very freely, in fact the whole plant was quite covered with blooms. The flowers are of a very delicate rose colour, of rather strong substance and deliciously fragrant. Everybody was struck by its beauty and sweet odour. Another point worthy of mention is, that it is quite hardy even in our climate. Another beautiful Daphne, better known than rupestris, is Daphne Blagayana. It is evergreen and perfectly hardy, but is a stronger grower and flowers earlier. The flowers are pure white and delightfully scented. The plant is quite at home in a shady damp corner of the rockery.

Styrax japonica is another fine flowering shrub of small dimensions, which ought to find a place in every collection. The foliage, which is very neat and pretty, much resembles that of a Euonymus. The flowers are white, with large yellow stamens, pendulous and produced very freely. It is flowering here just now.

Flowering for the last three weeks, and still in full beauty, is Viburnum plicatum. The foliage is much like that of Viburnum lantana, but the flowers are much more beautiful. They are large, snow-white, in clusters, like a Hydrangea; the clusters are produced in abundance, and as the flowers last a considerable time in full beauty, make the shrub very desirable for every garden. Aralia Maximowiczi and Echinopanax horridus are perfectly hardy, and very ornamental plants. Both are deciduous, and, as it appears, do not attain large dimensions. The leaves of A. Maximowiczi are seven-lobed, very deeply cut, in general appearance much resembling those of Aralia leptophylla, light green, with long dark brown stalks. The lobes are elegantly drooping, and the whole plant has an elegant and noble appearance. The diameter of the leaves is about 10 inches, but as the plant is still small I trust the leaves will in course of time increase in size.

Echinopanax horridus is a curious looking thing: the leaves are not deeply cut—at first sight much like those of Gunnera scabra, but a great deal smaller. They are not drooping, but erect, and the leafstalks and ribs are thickly covered with strong yellowish spines. The leaves are but 10 inches in diameter; but, the plant being still small, we may hope that the leaves will increase in size. The plant is flowering at present, but the flowers are quite small and inconspicuous. *C. Wissenbach, Royal Gardens, Wilhelmshöhe, near Cassel, Germany.*

Fruits Under Glass.

Strawberries.—Where an adequate number of runners to meet requirements for forcing, with a surplus for the allowance for blind or weak ones, together with a sufficient number to plant out for the purpose of yielding a supply for next season has not been obtained and layered in small pots, there should now be no delay in securing them. The utility of plunging the pots in the mulching material is amply manifested this dry, sunny season by the saving in watering, and the benefit the plants derive from the roots being thus preserved in a more uniform state of coolness than it is possible to keep them in when the pots are fully exposed to the sun and air. Keep the parent plants as well as the young ones free from superfluous runners, and see that they are properly watered and are syringed over each fine evening towards sunset, until the balls of soil are well netted with roots, when the young plants should be cut away (choosing a dull day for the purpose), and removed to a bed of ashes, either in a cool frame, where they can be shaded from scorching sunshine, or in a shady situation out-of-doors, but not under trees, there to remain until they have recovered from the check, when they should be placed in their fruiting-pots. The size of the pots we employ varies from 5½ inches to 7 inches in diameter, the smallest being used for early forcing, such as Vicomtesse Héricart de Thury, while President and later varieties, which mature their crops in spring and early summer, are potted in the latter. In potting thorough drainage should be insured by clean potsherds covered with a thin layer of dry moss, which should be coated over with soot to make it distasteful to worms. The compost should be pressed or rammed more or less firmly according to the character of the soil, for although Strawberries need firm potting, the ramming of heavy soils is sometimes carried too far, with the results that the plants become waterlogged and greatly damaged thereby. A shady situation should be found for the plants for a few days after potting until they can endure the sun, when they should be placed on beds of ashes in open quarters a distance from high walls, and be well syringed daily. With regard to soil, that most desirable is a moderately heavy one derived from an old pasture, and stacked sufficiently long to decay the herbage; it should be well broken up and placed in an airy shed when tolerably dry, where it should be turned and mixed with old cow-manure or dried horse-droppings, with a little soot added. We are not particular about the nutritious qualities of the manure, and always use horse-droppings, because our soil is rather close and heavy; the aim is to induce the plants to produce an abundance of active roots ready to feed upon nourishing liquid when administered.

Vines.—We are induced, notwithstanding the necessity of repetition, to impress upon cultivators who have not been favoured with welcome thunder showers, as we have recently been, the great importance of giving to all borders, both outside and in, containing the roots of Vines laden with advancing crops, timely and copious drenchings of tepid liquid-manure and mulchings of short manure, for we do not remember a season when closer attention was demanded in these particulars, and it is not only beneficial to the Vines in supporting them with nutriment, but is productive of good by keeping the roots near the surface, and therefore in the warmer part of the border, especially where the borders are resting upon a cool subsoil and unconcreted bed. Attacks of red-spider may be expected to be prevalent this season, and on its first appearance in a house sponging with soapy water must be resorted to and persevered with. A painstaking and patient hand is required for this operation, for the slightest rub against a bunch mars its appearance, and the brittle footstalks of the leaves readily snap asunder. Houses in which ripe fruit is hanging should be kept cool, and the fruit preserved in good condition by a constant current of air and light shading; this latter must not, however, be used to the extent of preventing the natural ripening of wood and foliage, and should always be removed when the sun declines. The principal crops of Lady Downes' Seedling and Alicante will now be entering upon the stage when their berries are liable to scald; the latter is not exempt from this defect, while the former is more susceptible to it than any other variety, and requires the treatment advised for Muscats at p. 739 of the last volume to be rigidly carried out, particularly when the weather is sultry and changeable, as then the effects are more to be guarded against than during the continuance of bright sunshine; this kind is, however, well worthy of extra pains being taken with it, as it is undoubtedly the best keeping Grape in existence, and so highly is it prized here on that account, that a house is entirely devoted to it where it can receive special treatment, which it is as much entitled to as are Muscats or Hamburghs. Late Hamburghs may now be brought on without fire-heat, except during spells of cool weather, when sufficient to warm the pipes and prevent a check should be made use of.

Pines.—In situations where the night temperature for fruiting plants can be kept up to 70°, and that for young plants to 65°, without fire-heat, it may be shut off until a change in the weather takes place. The early Queens being relieved of their fruits, their roots should be well watered, and a free circulation of warm air with daily syringings overhead afforded them to bring on suckers, well furnished with broad sturdy foliage. We like to depend upon a second batch of Queens for a supply of suckers, because through not being fit for potting until late in August or the beginning of September they do not become pot-bound before winter, and are on that account in a better condition for shifting into their fruiting pots in February than those more early are; and to show there is nothing gained by a long season of growth, we may mention that some of the best fruits we have ripened this season were produced by plants which were ordinary sized rootlesss suckers in February, 1883. Smooth Cayennes and Charlotte Rothschilds for supplying ripe fruits during the late summer and autumn months we like to propagate in February, and for affording a winter and early spring supply in July and August. By this way of rooting batches at frequent intervals a constant supply of ripe fruits may be kept up without difficulty. In dealing with suckers pot them firmly in well drained 6-inch or 8-inch pots in good fibrous soil, and plunge in a bottom-heat of about 85° in a moist pit or low house that has a night temperature of 65°, where they can be kept moderately close and rather heavily shaded until the roots are formed, when thinner shading will suffice and more air should be given; give water sufficient to moisten the balls through after plunging and as dew overhead each afternoon. Suckers that are affected with brown or white scale should be cleansed before being potted. The former can be removed by syringing with water heated to 130°, or by sponging with soapy water; the latter is, however, not so easily dealt with. When we took charge here we found the collection infested with it, and after trying various remedies without success, we destroyed the plants, thoroughly cleansed the structures, and procured a clean set of suckers; and this is the only means of eradication we can confidently recommend. Perhaps there is no better way of annihilating mealy-bug than by effectually syringing with a mixture of paraffin, soft soap, and rain-water, used in the manner so frequently recommended in these columns for the destruction of insects upon other subjects. Happily we have had no experience with it upon Pines, and we are particularly careful not to introduce it or white scale into the houses devoted to their cultivation. *Thomas Coomber, The Hendre Gardens, Monmouth.*

Plants and their Culture.

Stove and Greenhouse Ferns.—The remarks made in our preceding Calendar (p. 803, June 21) will, when carried out, allow more room for the exotic Ferns during the next two or three months. A good collection of these is indispensable in every large establishment—and where much Fern is required for cutting, a good stock of the well-tried sorts is quite necessary. With a supply of such always at hand, a better appearance will be imparted to the floral embellishment—not that it is necessary or desirable to rely absolutely on cut Fern to use in association with cut flowers, far from it, but still a healthy stock of suitable kinds should always be grown for constant use. Adiantum cuneatum is one of the best that can be grown. To have a healthy stock of this Fern, it should not receive either excessive heat or moisture combined with shade, as under this treatment the fronds will be of a deep green colour, large in all their parts; but this is not the kind of growth to last long after being cut, often fading the same day—an occurrence which is very disappointing, especially so on occasions of importance. The best plan with this Adiantum and other species of this genus is to cultivate them in a cooler temperature, with more air admitted, and nearly fully exposed to the sun, using shading of the thinnest kind, and then only in bright weather. The fronds thus produced will be pale green in colour, and much smaller in the pinnæ, as well as more rigid in texture, therefore far more durable when used in a cut state. In potting them a liberal quantity of good friable yellow loam should be used in preference to any great amount of peat. The larger the plants the greater the quantity of loam and *vice versâ*.

For supplying cut fronds plants in large pots are not the best, rather the reverse, by reason of the more crowded state of the fronds, and the liability to damp off in the centre. Pots 8 or 9 inches in diameter are most suitable for such purposes, supplying a greater amount of foliage in a given space, as well as being more convenient to move from place to place. The present is a good time to overhaul a good proportion of the stock of this Fern and of any other kind that is relied on for supply. Probably some of the plants have been cut rather hard of late, these should be rested for awhile, and induced to make a vigorous growth during the next two or three months, in order to be in readiness for the autumn. Two batches at the least are necessary, and three are even better, each in its turn. We have stated before, when treating of Ferns, what an invaluable supply we draw from a quantity of the British Maidenhair (Adiantum Capillus-Veneris) that has grown spontaneously on the back wall of a lean-to stove. It has much extended itself in the last year or two, so that now we can cut a hundred or more fronds without their being missed; several square yards of wall are now clothed with this pretty species, where at one time there was only a dirty piece of wall: its rhizomes cling to the wall, and require no soil or other aid whatever beyond occasional waterings when the heating apparatus is much used. We have now started another lot on a similar wall that was also unsightly, and hope to get them to succeed. Next to the Adiantums the smaller growing forms of Davallia rank among the very best of Ferns either in a cut state or on the plant. No genus among all the Ferns in cultivation surpasses them in their adaptability in unfavourable circumstances. The Aspleniums are among the best, too, but not equal to the Davallias, by reason of their fading so quickly when cut for use in that way. D. bullata, D. elegans, D. dissecta, and D. Mariesii are all valuable kinds, and ought to be in every collection of importance. They are as easy to cultivate as any Fern we could name, and are readily increased by division.

Give attention to any seedlings that may be springing up of their own accord, and either prick them off into pots or pans, or pot them singly, if of sufficient size; they will have plenty of time to become established before winter, and then be found useful, as they are in small pots, for decorative work, or to succeed that portion of the stock that may have become exhausted. Examine such as are in need of a shift, and see to repotting without delay, so that the plants get well rooted before the dull season. If excessively pot-bound during the time of sharp firing, one oversight in the way of watering will soon be apparent, and is not easily remedied. Healthy growing young stock of Tree Ferns should have particular attention in this respect. Young plants of Cibotiums, Cyatheas, and Alsophilas will quickly make specimens of handsome proportions when carefully attended to. The same course, too, should be followed with the seldom seem Marattias (at least, in private collections); this is a handsome genus of Ferns, not so much grown as they deserve to be, and taking some few years before becoming of unwieldy proportions in a private garden.

During hot weather especial care will be necessary with all Ferns in baskets in respect to watering; in some cases they may need attention twice a day. The beautiful effect that they impart to any arrangement will amply repay the extra labour. The genus Platycerium, too, will need more attention in the same direction, as, though not showing outward signs of suffering, they nevertheless do in many cases feel the want of more frequent waterings than they receive. The Nephrolepis also do not flag so readily as many Ferns, but afterwards they show the signs in the premature dropping of the pinnæ. At this season of the year both black thrips and brown scale will be found to increase somewhat rapidly among Ferns; a liberal use of the syringe will keep in check the former insect, and judicious thinning of the older fronds will rid them of the latter pest to a certain degree; but on those fronds that it is not deemed expedient to remove the tedious process of poking them off with a stick may have to be used when an insecticide is not applied. *James Hudson, Gunnersbury House, Acton, W., July 1.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	July 7	Brockham Rose Show.
TUESDAY,	July 8	Royal Horticultural Society: Meeting of Fruit and Floral Committee, at 11 A.M.; Scientific Committee, at 1 P.M. Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. Farningham, Ludlow, and Vale of Evesham Rose Shows.
WEDNESDAY,	July 9	National Rose Society's Show at Salisbury. Ealing, Acton, and Hanwell Horticultural Society's Show. Royal Caledonian Horticultural Society's Show (two days). Lee and Blackheath Horticultural Society's Show (two days). Floral Fête at Mapperly Park, Nottingham (two days).
THURSDAY,	July 10	Sale of Imported Orchids, at Stevens' Rooms. Highgate Horticultural Society's Show. Oxford Rose Show. Wirral Rose Society's Show.
FRIDAY,	July 11	Sale of Imported Orchids, at Protheroe & Morris' Rooms.

THE Scottish Arboricultural Society, in promoting the INTERNATIONAL FORESTRY EXHIBITION, that was opened by the Marquis of LOTHIAN on Tuesday, have wisely recognised that theory and practice should go hand-in-hand, and that there can be no opposition between what is taught by true science and by well founded experience. If exhibitions have any value, it is as a means of disseminating the teachings of science and experience derived from all quarters, and the Lord Provost, Sir GEORGE HARRISON, was probably right when he said that universal exhibitions were less attractive than more special ones, because they were simply bewildering to our limited intellects. An ideal International Forestry Exhibition should comprise all the forest products of the world, with means for estimating their quantity, their modes of production, and their uses, the theory of their growth and manufacture, and means to increase or improve them.

A descriptive catalogue of such an exhibition would be an encyclopædia of forest science. The programme issued by the committee for the Edinburgh Exhibition was carefully considered, and at once exhaustive and well defined, and, upon the whole, they are to be congratulated upon the large measure of success which they have obtained. It is to be regretted that many countries that yield most important timber and other forest produce should not have responded to the invitation to exhibit; that the Eastern United States, France, Germany, and other countries should be absent. But, on the other hand, there are but few objects in the Exhibition which have not an obvious and practical bearing upon forestry. The Indian section is, in the present incomplete state of the Exhibition, by far the most important, its description occupying nearly half the official catalogue. Though, as the Marquis of LOTHIAN said in his opening remarks, it is true that in 1846 the natives of India were ignorant of the fact that by the reckless felling of their forests they were rendering their country liable to drought and famine, it is equally true that in Europe the necessity for forest conservation, though better understood, was but little acted upon; so that Colonel MICHAEL—who when only a lieutenant acted as the pioneer of the practical work of conservation in Madras—was fully justified in saying that no Government has done more than that of India for the advancement of forestry. One result of their wisdom, as pointed out by Sir GEORGE BIRDWOOD in an admirable introduction to the Indian section of the catalogue, is already visible in the gradually increasing rainfall in the North-west of India.

The committee have been reluctantly obliged to adopt a geographical classification, instead of one based upon their prospectus, and we have accordingly brought together in the collection displayed by Colonel MICHAEL, the timbers, forest implements, fibres, resins, dyes, tanning materials, and other produce of the whole of India, a great scientific value being given to the whole by the accompanying maps and large-scale working plans, prepared and exhibited by Major BAILEY, and by the various publications of the Department that accompany the collection. The scientific names of the various plants have all been carefully ascertained—a point in which some other countries have been less solicitous. The Danish Government sets an equally good example in the carefully compiled statistics as to its forest produce that appears in the catalogue; and our own Commissioners of Woods and Forests, through Sir JAMES CAMPBELL, exhibit most instructive series of woods from the Dean, Windsor, and New Forests, with tables showing the nature of soil and subsoil and the rate of growth; a set of forest account-books; tools of local design and manufacture, economical methods of fencing, and illustrations of defects in timber-trees.

Owing to those delays which inevitably beset a first attempt—and there has been no previous International Exhibition of forest produce—many most important series, such as that from Japan, have not yet arrived; but British Guiana, the Cape Colony, Mauritius, St. Vincent, New Brunswick, and Johore, have sent very complete representations of their timber, fibres, and other productions. The specimens illustrating the well-known Greenheart and Mora timber of the first-named country, the hard-woods of the Cape, possibly including some substitute for Boxwood, the multiplicity of fibres from Mauritius, and the Camphor and Gambier of Johore, must attract the attention of all who take a wide view of the question; whilst an enormous log of Teak, over 52 feet long, from Burmah, and a section of Californian Redwood, 13 feet in diameter, illustrate the immense importance to the world at large of the supply of individual species. Unfortunately, residents amid tropical luxuriance are hard to convince as to the necessity for conservation. The Scottish Arboricultural Society and its individual members exhibit many useful scientific instruments, such as rain-gauges, theodolites, and dendrometers, and there are numerous series of microscopic sections of wood, so that hardly any department of scientific forestry is unrepresented.

The importance of pure and correctly named seed for forest planting has been fully recognised, as is witnessed by the unique collections of Messrs. VILMORIN-ANDRIEUX & CO., and JAS. VEITCH & SONS, the latter remarkable for its accuracy of nomenclature, and the Commissioners of Woods and Forests, Mr. MCCORQUODALE, and other Scotch foresters abundantly illustrate the defects arising from bad pruning, squirrels and insects, though the collection is at present rather weak in forest entomology. A splendid series of woodpeckers is, however, in the series, and rather too many merely curious specimens of fantastic knots and inarchings. Of special importance to our national foresters are the various compounds recommended to protect trees from ground game, and to act as substitutes for creosoting underground structures, whilst the hardiness, rapid growth, and considerable durability of the Douglas Fir, perhaps entitle it to rank as our forest tree of the future. The specimens from Balmoral, shown by Mr. MICHIE, demonstrate, however, the admirable return in sound timber, with a large proportion of heart-wood of great durability, which the Scotch Fir will yield even on the most barren sands and gravels. It is a pity that France has not sent something to represent the growth of Pinus maritima on the Landes of Bordeaux, which affords a valuable illustration of both the direct and the indirect advantages of timber planting. Space only permits a passing reference to many instructive exhibitions of well-designed forest tools and labour-saving machinery, among which DE CANVILLE'S portable street tramway must certainly take a high place, or to that rapidly increasing industry, at present almost monopolised by Norway and Sweden, the manufacture of paper-pulp from wood, more especially from that of the Pine and the Aspen. This is abundantly illustrated in the Exhibition.

A valuable library is in process of formation, and it is certainly much to be hoped that some of the more instructive part of the Exhibition may not be dispersed, but may form the nucleus of an educational institution that may take away from us the reproach of being the only country of importance without a forest school, whilst we own more forests than any other Goverment. Meanwhile, the success of the Exhibition must in a great measure depend upon the support of the public; and while congratulating Dr. CLEGHORN and the committee upon the results of their labours, we may say that the Exhibition is itself so highly educational, that no one interested in trees or their produce should fail to visit it, and to do so in a teachable spirit. In another column we give some further details relating to this unique Exhibition, and to which we expect to have further opportunities of referring.

—— FRUIT AND THE CHOLERA.—An outbreak of this deadly epidemic so near to us as France, naturally provokes amongst timid people some alarm, a state of mind that seems always to be productive of evil. It is to be feared that the report industriously circulated that the cholera at Toulon originated with the free eating on the part of some of the population, of unripe Apricots, may lead to a fanatical outcry against the eating of fruit in any form during the present season. It is true we have here no great abundance of that product, but still there is some to dispose of, and market growers have been so badly hit that any addition to their misfortunes by raising a foolish cry against the use of fruit would be as unfortunate as it would be stupid. There is no proof that unripe fruit had any connection with the cholera outbreak at Toulon, and it does not seem certain whether the disease prevalent is of the dread Asiatic form, or is of the sporadic order. With the prospect before us of a hot summer it is possible, nay, even probable, that this epidemic will visit our shores, and if it does it will be well if it find us prepared to meet it without alarm and surrounded by the best sanitary conditions. Fruit growers will do well to send to market only ripe fruit, and that which is in a perfectly sound state. It is not, however, so much from the growers that any danger of that kind will arise. It is rather from dealers who are not too careful as to the places in which they store their unsold fruit or to the condition in which it may be. However, fruit is perhaps less injurious, if at all, when sound than many other articles of food, and rightly used may help to promote the public health rather than bring to it any danger.

—— THE HEALTH OF GARDENERS.—At a recent Conference held at the Health Exhibition, it appeared from some statistics collected by Dr. ORD that gardeners had a better chance of life than any other class out of some eighty specified classes of workers, with the exception of clergymen. If 1000 be taken as the average standard number of deaths within a given period among all classes taken together, then the number of gardeners who die during the period is barely more than half the average, *i.e.* 559; that of clergymen, who have the best chance of all, 556; agricultural labourers, 653; farmers, 675; medical men, 1125. The highest death rate is among persons engaged in hotels, 2205; innkeepers, 1521; brewers, 1361—significant figures these! The proportion of medical men who die in a given time, though above the general average, is less than might have been expected from the harassing life they mostly lead, and the special risks they run.

—— "AMATEUR GARDENING" speaks for itself. It announced its intention of doing so when it first appeared—it has done so, and will, we hope, long continue to do so, because, when it speaks it is with the object of being "generally useful." It recognises the fact that, for hardy Englishmen, at least, idleness is not pleasure, and that to get recreation, change, refreshment out of a garden—which is what amateurs want a garden for—they must work. "Work will be as pleasant to good people as honey to the bee." In the spirit of this philosophy, as sound as it is pleasant, *Amateur*



The Gardeners' Chronicle,] FIG. 6.—HOLLAND HOUSE GARDEN: FROM A PHOTOGRAPH BY MR. VERNON HEATH. (SEE P. 5.) [July 5, 1884.

Gardening starts in the race among the low-priced gardening periodicals. There is abundant evidence of work—genuine work, not mere paste and scissors business—about this publication, ample proof that the requirements of the amateur have been well considered, and full assurance that they will be met. We need say no more, unless it is to apologise to our youngest contemporary for having, from sheer inadvertence, deferred our notice of this useful publication till it has cut its teeth—we mean, issued its second monthly part. We regret this the less as first numbers rarely give so good an idea of the scope of a work and the way it is likely to be treated as those that come after, and so we have now a better opportunity of judging than we had on the receipt of No. 1.

—— Darlingtonia californica keeps on growng freely, planted out at the York Nurseries in a two-light frame facing south, in sandy peat. The lights are kept close shut down all day, however sunny it may be, through the growing season, but are drawn off completely in the night, with plenty of water. So treated they make splendid large pitchers, hat colour beautifully as they approach maturity.

—— Rose Notes from Paris.—M. Bergman nforms us that at the last meeting of the French Horticultural Society, held on June 26, M. Margottin, père, of Bourg-la-Reine, showed a new hybrid perpetual Rose, which he has named Raoul Guillard (after his grandson). The colour is between that of Général Jacqueminot and that of Louis van Houtte, and very bright. The flower is full; the plant has fine green foliage, and it is a very free bloomer, with a strong perfume. M. Emile Gobereau, 106, Route Nationale, St. Cloud, sent to the same meeting a dozen or so of white Roses, to which, by a chemical process, he had given a fine pale blue tint, not violet, but real pale blue.

—— Nepenthes sanguinea.—In the stove at the York Nurseries is one of the best grown examples of this Nepenthes we have seen; the pitchers are quite a foot long, and of the deepest crimson colour. This is one of the gems of this singular genus, and deserves a place wherever there is a warm moist stove at command.

—— Aloe Bainesii.—A letter from Cape Town, dated June 4, states that Aloe Bainesii was then coming into flower in the Cape Town Botanic Garden.

—— The Phylloxera Laws at the Cape.—A Cape Town correspondent writes, that an ill-timed and ill-managed attempt to relax the Cape Anti-Phylloxera laws has resulted in the downfall of the Scanlen Ministry. It was recommended, in face of the strong feeling shown by the wine farmers, who are a compact political body, to relax only so far as to admit tubers and bulbs in a dry state. This would probably have led to no harm, and would have contented the anti-Phylloxerists of extreme type. But the Ministry being previously almost moribund, an easy victory was snatched, and the old stringent regulations were re-enacted. We hear that one gentleman who tried to get in a large parcel of Roses between proclamation and proclamation—failed, and all the plants were burnt by the Customs.

—— Tacsonia insignis, planted out twelve months since, and trained against a sheltered wall of one of the offices in the York Nurseries, is now making growth. It has stood 12° of frost; how low a temperature it will bear yet remains to be seen.

—— The American Association.—The *Botanical Gazette* states that the notable English botanists who may be confidently expected to attend the American Association at Philadelphia are, so far as now known, Sir J. D. Hooker, Prof. MacNab, Mr. John Ball, Mr. Alfred Bennett, and Sir John Lubbock. The preparations for the entertainment of botanists at the Philadelphia meeting are steadily progressing. Among the special excursions decided upon is one to the Bartram House and garden at Kinsessing, and another to the Pine barrens of New Jersey.

—— Todeas at the York Nurseries.—In the lean-to north house, 80 feet long, in three divisions—hot, greenhouse, and cool—filled with Filmy Ferns, the plants, of which there are some thousands, are in beautiful condition; none are confined under glasses, all having the full air of the house in which they are grown. Where only a few of these plants are grown, in company with other things, their beauty is only imperfectly seen; but where the collection is complete the varied forms, contrasting as they do with each other, are seen to advantage. There are many specimens of Todea 3 feet across.

—— Delphiniums.—These fine herbaceous flowers, which are now indispensable in the herbaceous border, are to be found in great variety, their colours exhibiting almost every shade of blue, violet, and purple. We received from Mr. T. Ware, Hale Farm Nurseries, Tottenham, a rather numerous assortment of them, from which, as more distinct than some others, we select the following:—James Helme, a cœrulean blue, with a slender long spike having smallish blooms closely set; Madame Rougier, similar in colour, with the addition of a silvery sheen; Leonie Barbe, a pale blue, but of a different shade, and with a massive truss. Madame Stenger, Pulchrum, and Azureum reckon also among the finer light blue-tinted flowers. Of deeper shades of blue are Lifeguardsman, with a long moderately dense spike, the blooms being large and of a pure colour; Conspicuum is nearly of the same tint, but with white anthers of a large size, and massive much branched spike; Madame Joigneaux, a dark purplish-blue, with blooms that expand well; Hendersoni, still one of the best of the deep blue section; Madame Le Bihan is a semi-double metallic blue, having a strong spike of great length; Madame Richalet is a moderately large flower and spike; Protee, a dark flower of smallish size—very pretty and compact; Alopecurioides, a very charming dark blue variety, the blooms having the shape of rosettes that are close and neat. These last three are double-flowered varieties, and are very distinct.

—— English and Spanish Iris.—Thanks to Messrs. Veitch & Son, and others, some idea could be entertained of the beauty of these handsome hardy flowers at the last meeting of the Royal Horticultural Society The collection from the Chelsea nurseries was in the form of large and showy bunches of cut flowers, well set up, and really very instructive. A selection of the best varieties would give the following:—Hope, deep purplish-blue; Mungo Park, maroon; Apollo, blue; Lady Ann, rich purple; Formosa, mottled purple and white; Julia, pale blue; Penelope, white, with featherings of pale purple—very pretty; Aurea perfecta, golden-yellow; Mont Blanc, white; Miss Wild, deep purple; Miranda, a very distinct and beautiful variety, the ground suffused with delicate blue, and flaked with reddish-purple; and La Dame du Lac, the lip rich golden-yellow, the crest pale blue flaked with dark blue. The Spanish Iris were showy because of the rich golden-yellow seen on the lip. What were named German Iris appeared to be smaller flowered types of the English Iris, but mostly with white and blue or lilac striped flowers. For border purposes these Irises are very showy and useful at this season of the year; and it would appear from what was seen on this occasion that the varieties grow in number rapidly. Those named would make a charming collection for any one to commence with, but whether they are to be found in plant lists generally, or are varieties solely in the possession of Messrs. Veitch & Sons, we cannot say, but at most nurseries a selection of good varieties is cultivated.

—— Open Spaces in London.—A meeting of the Metropolitan Public Garden, Boulevard, and Playground Association was held lately at the residence of Lord Brabazon, 83, Lancaster Gate, Mr. Ernest Hart in the chair. It was stated that the "playground" at old Horsemonger Lane Gaol had been offered as a free gift by this Association to the local vestry, subject to a ground rent of 5*s.* a year, payable to the Surrey magistrates. This Association have spent over £300 in improving this ground. The Metropolitan Board of Works had been asked on June 19 to lay out and maintain as an open space a disused burial-ground situated in the vicinity of the Royal Mint, formerly belonging to St. Botolph, Aldgate, but now their property, and offered for sale as a building site. Part of it is sold, and is about to be used as such, which action they were asked to prevent. The Marquis of Northampton was willing to allow the Association to open to the public as a recreation ground Spa Fields, Clerkenwell, and there was every probability of his giving his consent in the case of three other squares in the neighbourhood. The opening of the garden of Clifford's Inn and that of the south-east extremity of Blackfriars Bridge had occupied the attention of the Corporation, as supported by this Association, with every prospect of success. The laying out of Marlborough Square, Chelsea, and the churchyard of St. Luke's, Chelsea, was certain to be carried out by the local vestry, on the suggestion of this Association, which has asked the Limehouse Board of Works to take over under the Metropolitan Open Spaces Act of 1881 the disused churchyards of St. Dunstan's, Stepney; St. James', Ratcliff; St. Anne's, Limehouse; and St. Paul's, Shadwell; the estimated cost of laying out these four grounds as public gardens would amount to £2200. Half of these amounts would be furnished by the Metropolitan Board of Works. The Association are about to initiate a movement for the acquisition of a magnificent park bordering the northern suburbs of London, 300 acres in extent. A vote of thanks to the Chairman brought the proceedings to a close.—The St. George's burial-ground in Wakefield Street, Gray's Inn Road, was formally thrown open to the public on Tuesday by the Princess Louise, Marchioness of Lorne. The work has been taken in hand by the Kyrle Society, with the understanding that things should be kept in order by the vestry. Asphalte paths, with a seat here and there, have been laid down, and the remainder of the ground, except where a small bed has been let in, has been sown with grass. A fountain ornaments the centre of the garden, and for the most part the tombstones have been taken up and placed against the walls.

—— Clematis.—We have not seen any of the light coloured Clematis grown in a position where the flowers were so well shown off as they are trained thinly round the old dead trunks of a couple of Dicksonia antarctica standing at each side of a walk in the York Nurseries. The black colour of these gigantic Fern stems brings out the form and colour of the flowers remarkably. The dead trunks of this Fern appear to be very enduring. These have been stood out here twenty-five years, and they look as fresh as if they had not been dead so many weeks.

—— The Dunmow Verbenas.—Mr. W. H. Stacey's persistency with the Verbena is meeting with the fitting reward of having his work recognised. It is needful that certificates be awarded to new varieties of this flower with care, but the Floral Committee are not slow to recognise what is of undoubted merit. Thus Striata, awarded a First-class Certificate of Merit on the 24th inst., possesses much distinctness of character and novelty of marking, the lavender-pink and white quarterings being regular, and the pip stout and of fine form. Fantastic is another pretty striped variety, having pencillings and flakes of bright crimson on a white ground; in the case of a pale form of this variety the pencillings were slight, and of a pink colour. Hamlet is a fine orange-crimson variety; Orion, fine in colour and bold in the truss; and Ophelia, rich pucy-rose, very fine both in pip and truss. Lilacina is of a pale lilac-mauve colour, very pretty and distinct also. It is gratifying to observe that the Verbena is not the neglected plant some had feared it had become.

—— Incidents of the Drought.—No doubt the greater portion of the pleasure-loving public think the weather we have had of late to be the most delightful and enjoyable imaginable. It is, of course, a pity that fine weather should do any harm, but that is just what does follow upon so long and unwonted a spell of it as the present season has afforded. The fruit growers who saw with dismay the imperative ruin of their top crops last April certainly solaced themselves with the reflection that bush fruits were fairly plentiful and Strawberries full of promise. But already the drought has in dry soils practically settled the latter crop ere it had given one-half its promised abundance, and only where water could be given liberally has there been anything like an average yield. Raspberries, too, are small and greatly suffering, and Currants are exceedingly blighted. The poor birds, also driven by stress of drought, are almost ravenous after soft fruits, and the rooks play havoc with Peas, and scratch out the young Potatos, because of the absence of moisture and ordinary food. Peas, too, are hard and dry eating. They have little

flavour, and the crop is hardly one half the customary yield. The getting out of winter plants, and specially Brussels Sprouts and autumn Cauliflowers (a pressing necessity), can only be done with the aid of the water-cart, and the prime necessity of all life is far from plentiful. Generally the Potatos yet look well, but the root-produce is greatly suffering, and every week of drought now will render the prospect of a good root crop exceedingly uncertain. The disease will have a poor prospect of working mischief, and so far that is satisfactory; but some good rains for the Potato would be much less an evil. If long delayed vegetable, as well as fruit growers, must look for a disastrous season.

—— Pterostyrax hispida.—Mr. Gumbleton obligingly sends us a specimen of this very ornamental hardy shrub, which has much the appearance of a Deutzia, though widely removed from that genus. We propose shortly to give a figure of this valuable plant, which is as yet little known in gardens. From Mr. Gumbleton also, as well as from the Cambridge Botanic Garden, and from other correspondents, we have received various species of Philadelphus—popularly, but erroneously, called Syringa. These are among the most lovely of flowering shrubs, but as usual there is much confusion as to their names.

—— Gardeners' Royal Benevolent Institution.—Whether regarded from a financial or social point of view, the forty-first annual festival of this Institution, held on Wednesday evening, under the presidency of George Lambert, Esq., was a great success, the financial results especially being of the most satisfactory character, the sum collected being, with two or three notable exceptions, the largest amount raised at any of these gatherings. The Chairman, we are glad to say, was well supported by nurserymen and gardeners, and the decoration of the tables—always a prominent feature at this festival—was never carried out with better taste than on this occasion, by Miss Williams, of Holloway. Mr. B. S. Williams, Messrs. Veitch, Messrs. Charles Lee & Son, Messrs. Cannell, Messrs. Paul & Son, Cooling, Bath; Cranston, Smith, Fisher Holmes, and others, were heartily thanked for their floral contributions, the donors of fruit also not being forgotten. The usual loyal and patriotic toasts having been duly honoured, and "The Services" responded to by Colonel Shadwell Clarke, the Chairman gave "The Gardeners' Royal Benevolent Institution—long may it continue its usefulness," and in so doing commented upon the pleasures and delights which business men enjoyed, either from the practice of the gardener's art themselves during what little leisure time they had, or as partakers of the luscious fruits, the toothsome and wholesome vegetables grown for them by the gardeners—the cause of the unfortunate among whom it was his mission and his great pleasure that evening to plead. There was nothing like gardening to rub off a little of the cash-book and ledger, to which "we Londoners" seem to be chained for the best part of the day, whether it was in the pure air of the country or even in the less salubrious dust-holes dignified with the name of gardens in towns. It ameliorated the troubles of the business man, and materially helped to lengthen his days. As to the professional gardener—he was a man who worked early and late, in extremes of heat and cold, and it was the frequent and sudden transition from one of these atmospheric conditions to the other that made him a prey to many disorders, and tended to bring on premature decrepitude. It was to help deserving men of this class who in the evening of life found themselves in want of assistance, that this admirable Institution had been founded, and conducted for so many years with an amount of success that all must admit was remarkable. He appealed to those before him to do their utmost in the cause of this charity; to consider their wealth as not their own, but as trust-money of which they had the dispensing, and of which he hoped the gardeners would always get a good share. For his own part he would be always glad to help them, and he hoped that so good an Institution would root and branch flourish for ever. The toast was feelingly responded to by Mr. John Lee, the father of the Institution, after which Mr. Shirley Hibberd gave "The Corporation and Guilds of London," which was responded to by Mr. Alderman De Keyser; and Mr. Collingridge, the Master of the Horners' Company. The Treasurer, Mr. Tidswell, in proposing the "Health of the Chairman," announced the financial result of the gathering—over £1000. The Chairman's list, which included 100 gs. from himself, amounted to £330. The announcement of these figures was received with the usual signs of approbation, and the Chairman thanked them all for their kindness in making his tenure of the Chair so beneficial to the Institution, and so pleasant to himself. Several other toasts followed, including "The Secretary," who, it was said, had the "Institution on the brain" night and day, and who was never so happy as when doing his best to help the needy gardeners.

—— Watering in Hot Weather.—Watering pot plants is an operation that is frequently supposed may be done by any one, and that if only enough is given, provided the drainage in the pots is in a condition that admits of the water passing freely through it, all will go right; yet a more fallacious notion could scarcely exist, for not only is there great difference in the more or less moist condition the soil needs to be kept continually in through the growing season with different kinds of plants, and which needs to be understood by those who have this work to carry out, but it is equally necessary for the operator to know the different degrees of dryness the soil should be allowed to get to with plants that are different in their nature before water is given them. As instance, although the soil in which a Hydrangea or a Chrysanthemum is growing may be in no moister a condition when newly watered than that of a large-flowered or a fancy Pelargonium after water has alike been applied, still if the soil of either of the last named plants is not allowed to become much drier before being watered than is needful with the former, the roots will very soon be irreparably injured. The same holds good in respect to such things as Genistas and Acacias, on the one hand, as compared with Heaths and Epacrises on the other; with the latter the soil needs to be permitted to get all but dry before water is given—in fact, so dry that it would cause the former to flag if carried so far in their case. The different treatment required by the plants above instanced only serves to illustrate the wide difference that exists in the moisture requirements of the large number of plants now subject to pot-culture, the necessary acquaintance with which can only be fully learnt by practice, and attentive observation in noting the varied wants of different species and varieties. It is scarcely needful to say that in hot summer weather more attention and judgment require to be brought to bear on this important operation of watering, for plants of all kinds will not only bear, but require, correspondingly more moisture present in the soil when, in addition to their being in full growth, they are surrounded by a drier atmosphere that fast sucks the moisture out of the open pores of their young soft leaves. The healthy condition of pot-plants to some extent depends on the time of day they are watered: morning, and well on in the evening, are often said to be alike suitable; but morning is much to be preferred; the work then is less likely to be hurried through, and odd plants missed. If with a given set of plants the work is always carried out by the same hand, it is much more likely to be done satisfactorily. Plants, like animals, do not usually like a change of attendants, providing those who attend to them are fond of them, without which in both cases they often fare badly. Watering in the middle of the day under a blazing sun is so proverbially wrong as to scarcely require alluding to; but if a plant of any kind, however common or insusceptible of injury, is found dry, and perchance flagging, it should be shaded before it is watered, letting the shade remain over it a couple of hours until it has had time to recover. There is no cause more likely to produce sudden death than giving water to a drooping plant under the full force of the sun.

—— Plant Shades.—The hot suns of summer, when we get them, do our flowering pot-plants no good, in fact, if we expose them, either out-of-doors or keep them in glasshouses—that are carefully shaded—the time we can enjoy them is woefully shortened by a period of real warm weather. There are Rhododendrons, of the hybrid arboreum kinds, especially the latest blooming ones, Sikkim species—Roses, New Holland Boronias, Aotus, early Fuchsias, Pelargoniums, and Odontoglossum Alexandræ, Cypripediums, &c., which would enjoy life under some fixed kind of shading. Here they would be benefited by the cool air of night and by its dews, and owing to the direct rays of the sun being passed between some opaque material, the flowers would not fade prematurely, and the foliage would not get burnt or changed to unpleasing shades of colour As theorising is considered to be dangerous by our practical gardeners, the recorded observations of one of themselves will be more likely to find listeners. The structure seen was put up by a Continental nurseryman, now deceased, for the purposes indicated above, and being the property of a plant grower who could not afford unnecessary decorative detail, the structure was conspicuous for its severe simplicity. The form was that of a span-roofed greenhouse, minus the sides and ends, which were quite open. The roof was made of tiling-laths, placed diagonally across the light rafters, that were made of deal, 1½ inch thick, by 3 inches in depth. The laths were quite 2 inches asunder, and the rafters that carried them were 5 feet apart. This roof rested on squared posts of 5-inch stuff, with champfered edges, and were securely fixed in holes in the soil. The height at the eaves was from 5 feet to 7 feet, so that a person could enter conveniently, and large plants be put in without unnecessarily tilting them over. Through such a lattice roof, which may be painted green, and so rendered inconspicuous in the garden, the sun's rays penetrate sufficiently to avoid spindling of the growth, and to preserve the perfectly healthy look of all foliage: if there is no overcrowding of the specimens. Plants do not scald, as the shadows from above are constantly shifting, and the air keeps in slight motion always. The sides may be left open or may be enclosed with flowerless shrubs, or be planted round with tall herbaceous plants, as Dahlias, Hollyhocks, Castor-oil plants, Cannas, &c., or be closed with canvas, mats, or lighter lattice-work movable screens. If it rains there is no drip, and when there are dews the plants benefit likewise.

—— Elms.—The danger of being under these trees on still, hot days, was well shown on the occasion of the flower show at Chislehurst, a large limb falling from a great height without any preliminary crackling of the wood, as would be the case in less brittle timber. Fortunately the visitors were resting under an Oak in the neighbourhood of the band-stand, no one being near the Elm at the time, so that there was no accident to spoil the enjoyment of the gathering.

—— The Jersey Potato Crop is, we (*Jersey Gardener*) hear, likely to turn out an unusually good one this season; and although the earliest crop did not yield over well, the later ones have made amends, and the total export will probably exceed 45,000 tons, and realise over £300,000.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 30, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been cloudy over Ireland, but generally fine and bright in England and the greater part of Scotland. Towards the close of the period, however, the weather over England became temporarily unsettled, with local thunderstorms, and some heavy falls of rain. The temperature has been about equal to the mean in "Scotland, N.," and the "Channel Islands," but from 1° to 3° above it in all other districts. The maxima, which were recorded on the 27th or 28th, varied from 71° in "Scotland, N.," and 75° in "Ireland, S.," and the "Channel Islands" to 81° in "England, N.W.," and "Ireland, N.," 83° in the "Midland Counties," "England, S.," and "Scotland, W.," and 84° in "England, E.," and "England, S.W." The minima were registered on the 26th, and in "Scotland, N.," and "England, E.," were as low as 39°, while in other parts of the kingdom they varied from 41° to 49°. The rainfall has been a little more than the mean in the "Midland Counties" and the "Channel Islands," and about equal to it in "England, S.," but less elsewhere. Bright sunshine has been less prevalent than during last week over our south-western districts, but considerably more so in all other places. The percentages of possible duration varied from 62 in "England, N.E.," 59 in "England, E.," and 58 in the "Channel Islands," to 29 in "Ireland, S.," and 24 in "Ireland, N." Depressions observed.—Barometric pressure has been generally high and uniform over the whole of our area, the only depression observed being some travelling north-eastwards over Scandinavia during the earlier part of the period and a few local "thunderstorm" disturbances over England towards its close. Light or moderate breezes from the westward were general during the first few days of the week, but subsequently variable airs or light breezes from the eastward.

DINNER-TABLE DECORATIONS.

Exhibitors of these efforts of good or bad taste have some reason to complain of the eccentricity which seems to govern judges in making their awards when dressed vases, epergnes, or similar objects are concerned. Indeed, we may well go a little farther, and include in the list of exhibits which now and then call forth strange decisions such popular subjects as plant groups. One who has long been a prominent exhibitor in all these subjects but the other day remarked that "You never knew where you are, for in working out the most favoured designs of one class of judges you certainly fall into discredit with others, and it is impossible, even if seeming to follow the best canons of taste, to be sure you are right." There are many things in flower shows which judge themselves, and in reference to which the most obstinate censor can hardly go wrong; but when decorative efforts, the which can only be judged in accordance with the taste shown in their production, come under consideration, decisions prove to be all abroad. But a few days since, at a prominent suburban show, where table decorations are always well done and largely shown, we saw with pain some singularly beautiful stands either passed over or put low down, because the judges favoured others that were more densely loaded—indeed, were so crowded with material that they presented objectionable obstacles to social intercourse at any dining table. It might have obtained for the rejected stands some consideration that they were the products of some of the most experienced decorators of the day; but perchance the judges knew not of that. Still, it is evident that when the best professional talent is brought to bear upon such objects that ordinary judges may well pause, and ask how far they have qualifications that entitled them to censure the outcome of educated professional experience. It is very obvious that the training of a good plant grower, or any ordinary gardener, or even of a successful nurseryman, hardly qualifies for the judging of objects of taste or of art, and it is pitiful when, through the want of fitting capacity, mistakes are made that might well make angels weep.

That there is some tendency to utilise stands of a much lighter character now for floral or table decorations than we have long been accustomed to is evident. The old March stand, with its two or three dishes, one above the other, and rendering variety in dressing impossible, is now becoming obsolete. To that design there followed one of more pleasing character, in which the centre stem rising from out a vase dish, was supported by three side cornucopias, and one on the top completed the stand. These are now pronounced to be too heavy, and wanting in elegance and taste. Nay more, they are too short as a rule, for in the newest forms of stands, or epergnes, we see a small stem bearing a small vase rising to a height of from 20 to 24 inches from out a single dish, and the decorator is enabled by using a simple fastening of wire to add small side vases or glasses as he likes, and at what elevation seems desirable. Thus we saw in two sets of these stands shown the other day—all very lightly, elegantly, and tastefully decorated—that whilst in one case the decorator had affixed movable side vases to his centre stand only, the other had movable vases to his two end stands. In the latter case there was, however, one defect in the stands, and that was that the height of the three was almost uniform, whilst of the other three the two end ones were at least 3 inches shorter than was the centre one. This avoidance of uniformity in height gave to the stands in question considerable advantage. Without doubt also stands of this pattern admit of more variety and of taste in dressing than do the older forms. Specially pleasing are they that, when dressed, they offer no obstacle to conversation across a dining-table, and do not admit of that tendency to overload which marks so many amateur decorators. Some pleasing effects are obtained by utilising shoots of the climbing Cissus discolor, or of the climbing Fern, for dressing the stems, for the object of the decorator should be, not to absolutely hide the stem of the stand, but rather to shape its nakedness with some suitable clothing. Grasses of the coarse field form are now less employed than formerly, but the pretty Barley-grass is made to play a pleasing part in decorative effects. To say what flowers look best is to say that which would be absurd, simply because the decorator must always use the material to hand. Still, it is just as well not to introduce too much variety, and specially to avoid intense hues. It is not an uncommon objection to some yet very charming arrangement that the flowers used would be unsuitable for artificial light, but we rather take it that the decorator is justified in considering the conditions of light under which his stands will be judged, and not troubling about conditions that will not exist. Flower show committees might ofttimes render to exhibitors of these stands more justice in the matter of space, for too often the stands are crowded together, much to their injury. One condition ought to be affixed to all these decorative competitions, and that is, that all should be dressed in the show by the real competitors. The lack of such stipulation sometimes leads to results that are the reverse of honest.

HEALTH EXHIBITION.

This seems to be inexhaustible. The sight-seer who, from repeated visits, has familiarised himself with the main galleries, will nevertheless find himself coming upon some previously overlooked nook or corner, containing something of interest. One such is the Anthropometric laboratory, in one of the supplementary corridors. Here, for a fee of threepence, the visitor may test the relative excellence of his eyesight in judging the distance and positions of objects, the correctness of his sense of colour—an important point for florists—the keenness of his hearing, the force and rapidity of his blow, the extent of his breathing capacity, his height, weight, and a variety of other particulars of first-rate importance to the individual himself, and also valuable as furnishing materials for the statistician, statesman, and medical man. In another nook we came across a horticultural exhibit which had escaped our notice previously, and to which, strangely, our attention had not been called—we allude to a display of cordon fruit trees, trained obliquely on walls, or as espaliers, and, prettiest of all, on wire arches. The space is too limited for many to be shown, but the sample is good, and the effect pleasing. We have only to add that the exhibit in question is that of Messrs. Cheal & Sons. How to find it at the "Healtheries" without a map we do not know, so we may add that Messrs. Cheal's addresss is Lowfield Nurseries, Crawley, Sussex.

A considerable amount of useful and entertaining literature may be had by simply making a collection of the handbills and circulars offered to the visitor. Before us is one advocating the virtues of Quillaia. The botanist will know that this is the bark of Quillaia saponaria, the Soap-bark of Chili, a Rosaceous tree. The bark contains much Saponin, so that the virtues claimed for Quillaia on the handbill as a means of removing grease and dirt, may readily be admitted. We demur, however, to the statement that it has never before been introduced into this country. Marvel of marvels!—there is no name or address on the handbill, and so we cannot tell the reader where to procure this really useful article. We cannot say so much in favour of roasted acorns for coffee—acorns are but acorns even when roasted—and no amount of torrefaction will mix their starch with the fragrant nerve-restoring caffein. Dried Chestnuts displayed as such, and not made into coffee, are good honest starch and sugar-yielding productions, which may heartily be commended.

There is something to be said in favour of the Bread Reform League, who advocate bread reform, and few things to our taste stand in greater need of it in this country, where bread is usually either as dry and tasteless as sawdust or as digestible as sponge. The whole of the meal, including the outer gluten-cells—often entirely discarded, though really containing the most important food product of Wheat—is uniformly ground into the finest flour.

Indian and Ceylon Teas were noticed in a former number. To keep tea hot, or preserve ice from melting, and for a variety of other purposes, Silver's Housemaid's Friend and Norwegian cooking apparatus may be strongly recommended. Their cost, however, seems so large as to be likely to be a check to their use.—Hullett's canteen, being a good thing for soldiers, tourists, and sportsmen, why should it not be equally good for the workman or labourer, who often has to get his meals at a distance from home how he can? Will not Messrs. Hullett contrive some less expensive article which would meet the wants of the class we allude to?—The City of London Sanitary Association, 61, Cannon Street, provide a kettle without a lid, without a bottom, without a spout, and, if we do not place too literal an interpretation on the words, their statement may be accepted as fact. In truth the kettle is a modified saddle boiler, and every gardener knows how useful they are.

In an out-of-the-way corner, where, if the visitor find his way, he stands a chance of being watched to see that he is not about to deposit dynamite and blow up the dairy and the kitchen of Messrs. Bertram & Roberts, Messrs. James Carter & Co. have a series of samples of named grasses, &c., in growth. These are amply worth inspection, while their "Explanatory Guide" to their remarkable "exhibit" in the South Gallery, already referred to—a copy of which has just reached us—is worth keeping as a permanent record of much valuable information, accessible enough to those who have libraries at command, but not so easily obtainable to those whose books are necessarily few.

HOME CORRESPONDENCE.

Chrysanthemum segetum. — Farmers around here are incredulous when I tell them that this plant often receives favourable notice in the gardening papers, and that the flowers are sold in London for decorative purposes, as some of the fields on this estate are so full of this Chrysanthemum that the tenants regard it as the most troublesome weed they have to deal with, for, like most of the Compositæ, it seeds profusely, and soon covers the ground. If the farmers could only sell the flowers, even at a very cheap rate, they would make quite a fortune, but they cannot get an offer, as I persuaded one to send a hamper of them up to a salesman at Covent Garden to see what could be done, and he sent to say they were no use, which quite disappointed my friend, who began to have visions that his weeds would bring him a profit, and that farming had taken quite a new turn. When I meet him now he slyly asks me if there is any demand for Boodle blooms—Boodle being the name he knows the Chrysanthemum under, and I tell him that he and others grow too many, as the fashion for them has only just set in. Ox-eyed Daisies, according to some accounts, are now sought after, and with wild grasses they really dress well, and only want a few coloured single Pyrethrums to mix with them to make a fine show. *J. S.*

Tulipa Gesneriana.—In the *Archives Italiennes de Biologie* of April, 1884, Dr. Emile Levier has an article on the origin of Savoyard and Italian Tulips, and there, speaking of the different Tulips which are described as Gesneriana, proposes the name of Tulipa connivens for the Gesneriana of Parlatore, of which the Tulip figured in the *Botanical Register*, vol. xxiv., plate 46, is said to be a garden form, as it has, according to the author, nothing to do with the Tulips described as Gesneriana. I am able to say something about the probable origin of the name Gesneriana, given to that garden form figured in the *Botanical Register*, and which may interest the readers of the *Gardeners' Chronicle*. The Gesneriana of the *Botanical Register* is doubtless the same Tulip that was cultivated for years under that name in the Dutch collections, although there are various other red Tulips in Holland as Gesneriana which, however, are there not considered to be the true sort. The true Gesneriana of Dutch gardens (the same as that of the *Botanical Register*) was first cultivated by the late Mr. Vincent van der Vinne, a famous Tulip as well as Hyacinth grower, and a descendant of the family of painters of that name, of whom some were known as possessors of Tulips 150 years ago. The above-mentioned Gesneriana Tulip was received by Mr. van der Vinne from the south without name, and he applied to it the name Gesneriana, as it seemed to him to be the most appropriate. The plant figured in the *Botanical Register* is most probably taken from a Tulip derived from this stock. The remaining stock of this T. Gesneriana, after it had been already in commerce for a long period of years, was sold by public auction in 1863, when Mr. van der Vinne gave up cultivating these plants. Then also a great number of seedlings were sold for the first time, among them four hundred sorts of late mother Tulips or selfs, 100 also the following sorts offered as seedlings of Mr. van der Vinne, which are usually classified among miscellaneous Tulips, viz., elegans, maculata, major, retroflexa, fulgens, fulgens variegata, vitellina, flava, carinata rubra, and carinata violacea. As for the parentage of these Tulips nothing was ever published. Among these is T. fulgens, which has been considered to be the same as T. Gesneriana, *Botanical Register*. This is not the case, as the true Dutch Tulipa fulgens is that originally from Mr. van der Vinne's collection, and it differs from the true Dutch T. Gesneriana, which came from the same source. Very often all the varieties which are called in Holland Duc Van Tholl are considered to belong to Tulipa suaveolens, of which the common

single Duc Van Tholl is the cultivated type. This is not at all true; among these Dutch-called Duc Van Tholl Tulips there are some which certainly had another origin. So the now so generally grown scarlet Duc Van Tholl, figured among others as a variety of T. suaveolens in the *Flores des Serres*, t. 1223, belongs to the common early single Tulip (T. pubescens, Willd.). It was cultivated formerly in Holland among this class, under the name of Dolphyn, but, although a very fine Tulip, it did not sell, so the owner changed the name and offered it as scarlet Duc Van Tholl. This name made it popular, and that it deserved to be so is proved by the fact, that now it is sent out annually by the million, and it will always remain one of the most popular bulbs for growing, as well as for bedding-out. *J. H. Krelage, Haarlem, June* 24.

The Double White Rocket.—A rooted cutting of this good old plant, brought to me from a cottage garden two years last April, is now a plant 2 feet 9 inches high and 3 feet through, with twenty stems rising from the base carrying flower-heads 9 inches long. The donor has had it for years, and makes it a practice of inserting a few cuttings annually, which is a safe method of preserving the plants with certainty. His practice is to cut off the flower-heads just when they are on the wane from an odd plant or two, and later on, as the buds are pushing, he takes the portions of flower-stems left, and cuts them into pieces about 4 inches long and inserts them where they are screened from the mid-day sun, under the east side of a Gooseberry bush being his favourite spot. My method of propagating has been to cut the shoots off to within 3 or 4 inches of the base, and when the young shoots were long enough to remove them with a heel and insert them under hand-glasses. The flower-stem cuttings are the least trouble, and are equally certain to form roots, but to secure them involves the sacrificing of the flowers from the desired number of plants, for it will not do to allow them to remain after the first symptoms of fading. As one of your correspondents has already remarked, I found the plant short-lived in the neighbourhood of London, and very rarely to be met with. When I formed the herbaceous garden at Peterborough House, Fulham (which contained the best private collection near London at that time), I received two plants from Mr. Parker, of Tooting, in the spring of the year, and they did very well, but perished during the winter; but the cuttings secured from them survived, and were planted in holes well lined with cow-dung, with the view of keeping them cooler during the summer, but only one lived over the winter, and I was disposed to attribute the failure to an atmosphere heavily laden with moisture and smoke, in which everything was enveloped sometimes for days. We have here what is termed the purple variety, and I am suspicious of the sportive tendency of the white to become that colour, as I have observed spikes heavily tinted on some of the plants. Soil, climate, and probably culture, exercise considerable influence in deciding the character of the plant, and any one seeing the plant near London, for instance, may be pardoned for concluding that it is a distinct kind to that grown some distance off. *W. Roberts, Cuerden Hall, Preston.*

Aërial Roots on Vines.—I have read Mr. Bishop's remarks on this subject, and am of opinion that their growing on Vines is no sign that such Vines are suffering from ill-treatment, or are in any degree in an unsatisfactory state, notwithstanding what Mr. Thompson says in his work on Vines to the contrary. For the last sixteen years I have had charge of vineries in England, Ireland, and Scotland. I have had new vineries, old vineries, and middle-aged ones to manage during that time. I have always extracted abundant crops from them, with hardly an exception, and I may say that I never was free of these aërial roots during the time we were forced to keep the houses moist until the bunches started colouring, when, of course, we kept them dry. These roots then soon shrivelled and disappeared. I never detected that they in the slightest degree weakened or injured the canes so affected, and I can guarantee they were on some of the best. Hence I have come to the conclusion that they are caused or brought on by the heat and moisture which necessarily must be in vineries in the first period of growing Grapes, and that they will come no matter how well borders and ventilation are attended to. *A. Macdonald, The Gardens, Royal Asylum, Cheadle, Manchester.*

A Cure for Gumming in Cucumbers.—I have been a Cucumber grower for years, and, like most others, have at times experienced a good deal of trouble from attacks of gumming. The usual remedies have been resorted to, viz., boring the stem, keeping the stems dry, dusting with dry lime, &c.; but the gumming continued, and the plants eventually died, and I don't remember a single instance in which any of the methods adopted was of any avail. This season I planted two houses in the usual way. For bottom-heat I put in about a foot deep of old Mushroom manure, horse-droppings, and shoddy mixed, and the soil used was from an old meadow. The plants set off and got to such a degree of vigour as to excite great hopes of a fine crop; but presently they showed signs of gumming, and several went off, and considerable uneasiness was felt as to the fate of the rest, as several showed unmistakable signs of the dreaded disease. Between hope and desperation, however, I set to work by removing the soil from the stem, and with a pocket-knife scraped off every particle of gum until the stem looked fresh and clean; in some instances the stem was quite half gone. I then got some potting sand and put round the stem, afterwards covering up with some nice fibry soil, taking care that the wounded part was completely covered with the sand and the soil packed up the stem an inch farther. And now as to the result. A week afterwards the stem was examined and found to present a healthy appearance, being covered with white dots, as if new roots were being formed, and a week later proved that such was the case; and now from and above the wounded part roots are being freely formed in the soil, so that I believe the remedy is in my own hands. It would be interesting to your Cucumber growing readers, as well as to myself, to know the result of such treatment as tried by others. *U. J. A. Bruce, Chorlton-cum-Hardy.*

Foxgloves.—Undoubtedly these are fine things for shrubberies or the backs of herbaceous borders, or as I saw them last summer at Heythrop, the seat of A. Brassey, Esq., in immense beds by the side of the coach road. Owing to the dry weather these will be rather shortlived this season. I have a pure white strain without a spot of any kind, which I brought from Hampshire a few years ago, and which, entwined with purple Rockets, are very telling in the distance. Any of your readers desiring to obtain this variety can do so by sending me a stamped envelope as soon as the seed is ripe, which will be in a few weeks. *J. Corlett, Fawley Court, Henley-on-Thames.*

Anchusas.—There is generally a great scarcity of blue flowers, both indoors and out, but by growing the Anchusas there need be no lack of that desirable colour to ornament borders at and before this season, as both A. italica and A. capensis come into bloom very early, and lovely things they are in their rich shades, the first-named being equal in depth to the much-admired Gentian, and the latter rivalling the Forget-me-Not in its delicate tone. To see A. italica at its best, it should be planted well back in the border, as in good soil it grows to a height of 4 or 5 feet, and when at either of those sizes produces a bold and striking effect. The way to raise plants is to sow seed, which sets and ripens in abundance, and an increase may also be effected by division of the crowns, which is best carried out in the spring, as then the severed parts soon heal, and the crowns quickly start into growth without feeling much check. A. capensis, being a little more tender than the other, requires a sheltered position, and is well adapted for semi-wild places, where, if favoured in the way referred to, it establishes itself and spreads in a natural way. *J. S.*

Annuals becoming Perennial.—This seems a paradox, or a privileged Irish bull, but it is nevertheless true. For instance, two of the most useful and not the least showy annuals I had last year in the mixed borders, were Chrysanthemum coronarium fl.-pl., both alba and aurea, and Marigold Meteor. Some of these are much better than others—generally the dwarfest in growth, like Stocks and other annuals, turn out the finest in bloom. Observing this, I left in the ground last winter a selection of each, and, probably owing to the mildness of that time, they slowly grew away, and have now been in bloom for the past month. I must not be understood as saying they had not previously flowered—this is the second season of their doing so. The same thing evidently applies to other annuals in mild winters, and points the moral that the line of demarcation between annuals and perennials is not so distinctly marked as it may seem. *W. J. Murphy, Clonmel.*

Rhododendrons and Hardy Azaleas.—Although these suffered from the dry winds just when their buds were expanding, the rain came in time to enable them to open their blossoms, and in districts where the soil suits them bushes have been quite a sight, as they were literally laden with flowers. No doubt, much of this was due to the favourable season last year, as during the time plants were making their growth we had moist cool weather, and they therefore developed plenty of young wood, which ripened well after, and nearly every shoot set a bloom-bud at the end. It cannot be expected that the bushes will do this again quickly, unless they have some assistance, which may be afforded by picking off the seed-pods, the bearing and maturing of which are very exhausting—far more so than carrying the flowers, as may quickly be seen by any one at all observant, for plants soon show what a burden such a crop is to them in the distressed look they present. As the plants burst their wood-buds very soon after the blooms die away, the pods should be picked off at once, when the work may be carried on speedily without hurting the young shoots just emerging, if ordinary care is exercised in breaking the seed-heads out. The easiest and best way of doing this is to take the whole bunch in the hand and bend it sharply and suddenly on one side, giving a pluck at the same time, when it will snap off at the base, that being the weakest part, or where there is a sort of joint at the crown of the wood. Not only will the picking of the pods greatly relieve the plants, by freeing them from a burdensome load, but it will make them look neat and tidy for the rest of the season. With the pods off, a mulching should then be given, as the great thing with Rhododendrons is to keep the roots shaded and cool, which can only be done by covering the soil under the bushes with some sort of litter, and if this is carried out the plants will be enabled to bear the heat and drought of the summer without suffering or failing to make plenty of wood and set a fine lot of bud. Some advocate manure for Rhododendrons, but though it may do good on some soils, I think, in the majority of cases, the plants are better without it, and if they have any at all, it should be that from a stableyard containing a good deal of short strawy matter, which kind of material forms an excellent mulch, as the straw lies light and loose, and is non-conducting, which makes it valuable for the purpose referred to. *J. S.*

Watering and Mulching Combined. — If there are many districts, similar to this, where there has not been a heavy shower of rain, nor even a good dew, for the past two months, then at present there is no subject of equal vital importance for gardeners. All this time, too, there has been a somewhat tropical heat, and, as a rule, unclouded skies. The temperature in the shade with me, as noted by three Fahrenheit thermometers, varied little under 66° or over 70°. I am particular in noting this, as your correspondent's return is different from the "South of Ireland." In trying to keep my flowers alive, I have, in this case, the misfortune of growing them on a southern incline, where, as a rule, water does not lodge, and the further shortcoming of being obliged to use hard water, much impregnated, especially with lime. Exposure to the sun considerably "softens" the water; and while on this point I would like to ask, Is the action of the sun in softening the water chemical or mechanical, or both? The water, too, is not plentiful, and has to be forced by machinery underground a very considerable distance. These personal references are not peculiar, as I know numbers of gardeners and amateurs worse off, but I mention this last for the purpose of coming to the above heading, while saying at the same time, for these and other reasons, watering, under the circumstances, is only desirable when it cannot be helped—that is, when your plants would suffer if you did not water. The question as to when to do it involves a number of considerations, and would require more space than I can give it here, but some of these considerations are, whether the plant, or plants, are established or not, surface or deep rooting, the past or probable action of the sun, loose or retentive soil, and so on, that will strike any thoughtful person. These circumstances compelled me long since to consider how I might water to the best advantage, and I shall conclude by referring to the matter briefly, hoping others may add their quota to a subject that during the summer and autumn months is second to no other. I use guano and other artificial manures in special cases, but my mainstay is fresh horse manure. If I had the oozings from a heap of farmyard manure convenient, or a tank in connection with a cowbyre, as we had at Glasnevin in my time, under certain circumstances I might give them a preference; but in gardening, either for amusement or duty, as in other things, when one cannot have what one wants or wishes for, the point then is to utilise what one has. I put the fresh horse-droppings, with artificial manures sometimes added, into a large vessel of water until tolerably thick, and then use all combined, both as a watering and mulching. Roses delight in this treatment, so do Dahlias, Pansies, Asters, Stocks, zonals, Chrysanthemums, and Gladiolus; in fact, they would be pigmies without it. This obviates watering for some time, and no amount of sun-heat penetrates through the soil to injure the surface fibrous roots. Appearances and too rapid evaporation are consulted by a boy following with a vessel of dry loam and scattering it wherever the water mulching has been done. This year, though it may not suit others, the plan has been very useful to me. *W. J. Murphy, Clonmel.*

Potato Disease. — According to Mr. Jensen's researches upon the time at which the dreaded Peronospora makes its appearance, we were led to believe this (1884) would be an early year, and that the fungus would do a proportionate amount of damage —"weather permitting." We have had, however, such a long period of drought, that it seemed to me

to be a hopeless task up to the present time to search for it systematically. I thought that such an absence of rain as we have had would prove an absolute bar to the development of the fungus, in short, that this year the weather was "not permitting." On June 18 at Hunstanton I gathered one or two very suspicious-looking leaves, but as they had no conidia upon them visible to a pocket lens, I did not further examine them, for June 18 is a date far too early for the disease in this locality. I have little doubt, however, now, that these leaves were attacked by the fungus, for Mr. Smith received specimens of it from Bedford on the 23d ult., only five days later, and from Worcester on the 22d, only four days later. There can then be no doubt that this is an early year, and that the alternation between a late and early outbreak occurring annually is a fact. Of course the actual number of diseased leaves is at present but small, but if we get a day or two of rain we shall hear about fields succumbing in a night. At present the disease centres are small and easily overlooked, but they are numerous enough to produce a very serious outbreak of the disease in the event of rainy weather. Fortunately there is every prospect of this not taking place. Mr. Jensen informs me that he found the first diseased leaf in a Potato field near Neuilly on June 17, and others in different fields on the 18th and 19th. Last year, it will be remembered, that in the same place he did not find the disease in the fields until the last week in July, although he had artificially produced it in his garden some weeks sooner. *Charles B. Plowright, King's Lynn, July* 1.

Oaks in the Ardennes.—A short but very pleasant trip up the Rhine and Mösel disclosed a vigorous growth on the Vines; they appear in robust health, and, as far as I could see, promise a fruitful vintage; so let us hope to hear of plenty of "good Rhine wine" by-and-bye! But I noticed, in travelling through a part of the Ardennes, that the Oaks had all the appearance of having been burned; the leaves being either partially destroyed, or gone altogether; unfortunately I could not make my steam-horse wait for me to examine closely, but I fear some caterpillar has attacked them, as, some few years ago, the Oaks of Windsor were attacked. Have you received any report on this subject, or have you any correspondent in the vicinity of Namur who could elucidate the matter? *Charles Noble, Bagshot.*

Delphiniums.—Few, if any, plants do more to brighten and enliven herbaceous borders at this season than the perennial Larkspurs, of which there are now many varieties, and these will no doubt increase rapidly, as, like most other soft-wooded subjects, they cross and seed freely, and may be quickly raised and got into bloom. D. formosum, although one of the oldest, is still one of the best, as besides being of free branching habit and exceedingly floriferous, the blooms are larger and present more contrast than any of the others, that is, when a good strain is secured, as the outer petals are of a lovely bright blue, and the lip nearly pure white, which colours not only harmonise well but show up to advantage. A most pleasing and striking effect may be produced by planting this kind thinly among beds, or around plants of the 'Acer Negundo variegata, and allowing the two to mix or commingle together, grown in which way the branches and twiggy shoots of the Acer form a support to the Delphinium, and the leaves a rich contrast to the deep shade of the flowers. Another great favourite among the Delphiniums is D. belladonna, which is a very distinct sort, having finely divided foliage, and somewhat spare branching stems running a yard or so high, that bear delicate pale blue flowers in the greatest profusion. D. cardinale is a beautiful species, having bright scarlet blooms, very like those of D. nudicaule, which is more difficult to grow and keep, and seems more delicate, and often dies away in the winter. Although there are a great many other named single kinds worth having, it is a good plan to be constantly raising seedlings and picking out from them, as any that are inferior come in for growing till they can be replaced by better, in some wild places, and the tall good ones in the backs of borders in the foreground of shrubs, where they are most conspicuous, and form noble objects, towering up, as several of ours now are, 6 feet to 8 feet high, candelabra-like in their long branching spikes, of most commanding appearance. The soil that suits these noble perennial Larkspurs best is a light, rich, deep one, and if it is desired to increase or transplant, they should be divided and moved in the spring, just before growth commences, when they may be cut through the crowns. In raising them from seed people generally sow in the spring, but time may be saved, and strong fine plants obtained, by sowing as soon as the seed is ripe, at which time, if scattered on a prepared bed, and the ground kept moist, it germinates quickly, and the plants may then be left to stand for the winter. The doubles, of which there are several, can only be propagated by dividing the crowns, and it is advisable to do this every two or three years, both with them and the singles, and replant again at once in fresh places, but before doing this the soil should be prepared by deep digging, and have plenty of manure worked in. *J. S.*

Podisoma juniperi and Rœstelia lacerata.—The fact that these two spore-forms are only two stages of one and the same fungus was demonstrated more than twenty years ago by Oersted. The connection between the Podisoma and Rœstelia was, I believe, suggested by Des Longchamp * with regard to P. Sabinæ and R. cancellata, but to the eminent Danish botanist belongs the credit of actually demonstrating the fact. From the time that Oersted performed his cultures, until comparatively recently, it was thought that the three European species of Podisoma were connected with the three European species of Rœstelia, and that there the matter ended. The connection which thus existed is shown below in a tabular form :—

1. Podisoma juniperi on Juniper	=	Rœstelia lacerata on Hawthorn
2. Podisoma Sabinæ on Sabine	=	Rœstelia cancellata on Pear
3. Gymnosporangium juniperi on Juniper	=	Rœstelia cornuta on Mountain Ash

This is very satisfactory as far as it goes—these three æcidiospores agreeing nicely with three the teleutospores. Unfortunately, however, for those individuals who like to see Nature laid out in straight lines, neatly and trimly as in a Dutch garden, the plodding investigators of the Teutonic school were not long in discovering that other host-plants besides the Pear, Hawthorn, and Mountain Ash were the hosts of the Rœsteliæ. Instead of rushing to the conclusion, that because the exact correspondence in point of numbers between the host plants of the Podisomata and Rœsteliæ was disturbed, that therefore Orested must be wrong, they set to work by direct experiment to endeavour to clear the matter up. The most recent investigations are those of Rathay, which are subjoined :—

1. Podisoma juniperi on Juniperus communis	has its æciospore on	Cratægus oxyacantha ,, monogyna Pyrus communis Sorbus torminalis
2. Podisoma Sabinæ on Juniperus Sabinæ	has its æciospore on	Pyrus communis
3. Gymnosporangium juniperi on Juniperus communis	has its æciospore on	Sorbus aucuparia Aronia rotundifolia Pyrus malus Sorbus aria Cydonia vulgaris.

Charles B. Plowright.

INTERNATIONAL FORESTRY EXHIBITION AT EDINBURGH.

Few places in this country afford such peculiar advantages for the holding of an International Forestry Exhibition, as the northern metropolis. That success has crowned the efforts of the promoters of this great scheme is beyond a doubt, and it now only remains for the general public to show their appreciation of this gigantic undertaking, by freely patronising the Exhibition during the three months it is to remain open.

The Exhibition building, of which we gave a plan at p. 713, of our last volume, is erected in the beautiful grounds in front of Donaldson's Hospital, at the west end of the city, and is not only an elegant structure, but one that is in every way appropriate for the occasion—the pillars, walls, arches, girders, and roof, being entirely of wood.

The main building consists of an avenue or nave 210 yards in length by about 17 yards in width, intersected in the middle and near each end by transepts of the same width, running north and south for 100 yards.

A park of from 7 to 8 acres in extent, on the west side of the Hospital grounds, has also been set apart for nurserymen and others, in which is a fine display of specimen trees, horticultural buildings, Swiss, Californian, and Canadian cottages, as well as a model of the Queen's Highland châlet from Balmoral, which latter seems to attract a more than ordinary amount of attention.

Passing through the westmost gate of Donaldson's Hospital and along a covered corridor, which follows the present line of the road for over 50 yards in length, we turn off at right angles, and by two short flights of steps gain admission to the Exhibition buildings. Here the wealth and variety of interesting objects that meet the gaze is simply bewildering, and for which even a forester is by no means prepared.

The miscellaneous exhibits include all kinds of machinery for cutting timber, specimens of wood carving, sections of wood from nearly every country, basket work, gun-stocks, wood prepared for railway purposes, wood pulp for paper-making, specimens of inlaid work, models of bridges and foresters' cottages, fencing materials, picture frames, bows and arrows, foresters' tools, as well as furniture in all its varieties. Private exhibitors number about 500, and contribute articles under most of the sections or classes just mentioned.

The following, amongst other Governments and Departments are also represented :—Home Government : the Department of Woods and Forests, the Epping Forest Commission, and the War Office. Colonial Governments, including British Guiana, Sierra Leone, St. Vincent, Tobago, Cyprus, the Cape, Mauritius, New Brunswick, Dominica, Gambia, South Australia, and Tasmania. Indian Empire : Calcutta, Punjab, Pegu, North-West Provinces, Andaman Islands, Madras, Malabar, Johore, Travancore, Tinnevelly, Coimbatore, Nelambur, the Straits Settlements, Protected States, and Ceylon. The foreign Governments include Norway and Sweden, Denmark, Chili, Persia, Siam, Honduras, Mississippi, Florida, Venezuela, Borneo, San Salvador, and Japan.

The Scottish Arboricultural Society, to whom great credit is due for the inception of the Exhibition, is well represented, a considerable number of the members having willingly responded to the cry for help, and by their united efforts brought together a most interesting and valuable collection of forest produce. Particularly so do the foresters (members of the Society) appear to have represented almost every district in Scotland—a fact most gratifying to record, as it shows that they are thoroughly alive to the advantages that modern science places within their reach, and are determined to unite in every laudable effort to raise the art and science of forestry to its highest pitch in this country. Amongst the Society's exhibits we noticed various collections of cones, sections of wood, foresters' tools, specimens of ornamental slate fencing, models of arbours and bridges, tree labels of various sorts, specimens of trees, tree seeds, and groups of Indian figures carved in wood. One of the most prominent objects on this table is, however, a drawing-room album of ingenious construction, composed of 580 pieces of wood, carved with a pocket-knife, and put together without nails or glue.

One of the most interesting and curious exhibits is the bark of a Californian Redwood, erected to form a section of the trunk, whose gigantic dimensions may best be realised by taking a walk round its circumference, or by surveying the internal space, which is large enough to accommodate a small pic-nic party. The tree from which the bark and slice of the trunk, which is also exhibited, were taken, contained 6250 cubic feet of timber, and is estimated to have lived more than 2000 years. Contiguous to this are placed some immense slabs of wood, sections of trees from the West Coast of America.

In the south central transept, allotted to the Indian Government for their exhibits, is one of the most effective displays in the building. Here are a number of very curious and attractive objects, including splendid specimens of the Pedowk (?) tree, the wood of which is in appearance not unlike that of mahogany, but of a redder hue, and admirably adapted for decorative purposes. A mantelpiece, also made of this wood, is shown as a wall ornament, the design being principally outlined with black iron-wood. There are also several huge Bamboo canes from Burmah, ranging in length from 80 to nearly 100 feet, as well as models of Bamboo houses, and baskets made from grass and fibre. The celebrated Index Collection of India consists of 666 different specimens of timber trees, valuable either for the wood or resins they contain. Along with the Indian collection are disposed the Prince of Wales' hunting trophies, as well as contributions from the Duke of Edinburgh, and other distinguished Indian sportsmen. Amongst the innumerable varieties of Indian woodwork we noticed various models of carts for transporting heavy timber from the forests of Bombay.

The Maharajah of Johore contributes 357 different trees, tools used for timber-working in that country, and the model of a raft showing how logs in batches of 200 or 300 are floated down the rivers to the saw-mills.

From the Canadian side we have a collection of

* *Bull. Soc. Linn. de Normandie*, 1862, vi., p. 41.

native woods in rough and finished state, shown by the Provincial Government and the New Brunswick Land and Lumber Company; a wooden screen or "trophy" showing in combination all varieties of native woods; a miniature log cabin, an Indian camp, furniture in various styles, and a collection of Indian goods including Birch bark goods, snow-shoes, tobogans, baskets, Lacrosse clubs, bobbins, spools, wash-tubs, butter-firkins, Venetian blinds, and mouldings, a collection of Birch-bark pictures, and many other interesting as well as useful articles too numerous to mention at present.

From the office of the *Gardeners' Chronicle* has been sent a collection of engravings of cones, trees, fungi, &c. The Lawson Seed and Nursery Company exhibit collections of tree seeds, as well as a beautifully mounted series of the illustrations from the *Pinetum Britannicum*; while Messrs. James Veitch & Sons show a case of dried specimens of the foliage of coniferous trees and a unique collection of cones. Two hundred different samples of tree seeds are shown in small glasses by Messrs. Little & Ballantyne, of Carlisle, which, together with a carefully got-up collection of wood sections and forester's tools, are greatly admired. Messrs. Sutton & Sons have a well arranged stand, on which numerous objects of interest to agriculturists are displayed. There are models of various agricultural roots, including the leading sorts of Mangel, Swede, and Turnip, as well as some life-like representations of Cabbages. Turning from these we observe samples of mixtures recommended for forming permanent pasture and other purposes. There are also specimens of the grasses recommended as being suitable for permanent pasture, each distinctly labelled with its botanical and popular name, and bearing a concise description, pointing out the particular soils for which it is more especially adapted.

A Fir tree erected in the centre of the building by Messrs. A. B. Fleming & Co., Granton, shows how trees are "bled" of their resin in Continental forests.

Other exhibits include wreaths of South African wild flowers and grasses, necklets and polished ornaments of gum, sections of wood and fibres from the various woods, vessels for holding milk, model of timber waggon, &c., all from the Cape of Good Hope.

Taylor Brothers, Sheffield, show a collection of saws, felling axes and files; while Mr. Wells, Leith, makes a speciality of various compositions for preventing decay in timber. A handsome fountain has been erected under the central dome of the building, the lower basin being outlined with eight semicircles, on which are placed several figures supporting a small central basin, into which water is constantly playing. Groups of plants have been artistically arranged around the margin of the fountain, which, together with the play of water, gives to that part of the building a very natural as well as deliciously cool appearance.

A most attractive feature in the park set apart for outdoor exhibits, and to which attention has already been directed, is the display of trees and shrubs laid out in plots by our various enterprising nurserymen.

The Lawson Seed and Nursery Company have sent an extensive and valuable collection of Coniferæ, variegated Maples, Rhododendrons, Kalmias, Sweet Bays, Laurel, and Yew. Notable for their brilliancy of colour and effect as decorative plants is a very interesting and varied collection of Japanese Maples shown by Messrs. James Dickson & Sons, Chester, who also exhibit some splendid specimens of the various forms of Retinospora, Thuia, Cupressus, and Thuiopsis, showing in small space a very varied collection of forest and ornamental trees.

From Messrs. Veitch, London, come a collection of Japanese Oaks, and a specimen of the Umbrella Pine (Sciadopitys verticillata), about 10 feet in height, and well feathered with branches from base to apex. This is certainly the finest plant of the Umbrella Pine we have yet seen, and possibly it is the largest of its kind in this country. Messrs. Veitch also show Thuiopsis dolabrata, 9 feet; Abies (Tsuga) Hookeriana, 8 feet; Juniperus chinensis aurea, Abies Veitchii, the best plant in the country—well in character; Abies brachyphylla, Acer cratægifolium, A. carpinifolium, A. rubnerve—all distinct and valuable recent additions to the British arboretum; Quercus cuspidata, Olearia Haastii, Olea ilicifolia, Abies Douglasii glauca, &c. The same firm shows a collection of cones and dried specimens, gathered chiefly in the native countries, of the species represented by collectors and correspondents of the firm, including the first Wellingtonia introduced by Lobb. Also a collection of woods by Mr. J. G. Veitch of timber trees growing in the neighbourhood of Yeddo; of trees growing in the vicinity of Manila (Philippines), by Lobb and Pearce; of trees natives of Chili, California, &c. Specimens of Mexican Pines from the pinetum at Bicton, gathered by permission of the Right Hon. Lady Rolle; specimens of some of the principal woods of New Zealand; and specimens (dried) of some of the most distinct forms of Acer palmatum (polymorphum) cultivated at Coombe Wood, are also exhibited by the Chelsea firm. Messrs. Little & Ballantyne, of Carlisle, are well represented, as well as Messrs. Austin & McAslan, Glasgow; Stuart & Mein, Kelso; Mr. Lamont, Edinburgh; Messrs. J. Palmer & Son, Annan; and Mr. Fraser, Edinburgh—the latter showing a most interesting and varied collection of Hollies.

Fencing in various forms, turnstiles, gates, and ornamental seats are shown by Messrs. Ben. Reid & Co., Aberdeen; A. & J. Main & Co., Wm. Bain & Co., W. Smith & Son, and others. Of Messrs. Vilmorin's unrivalled collection of cones we must speak on another occasion.

Not the least interesting feature of the outdoor exhibition is the model of a Manitoba farm, including a complete reproduction of a homestead in the Canadian North-west, with settlers' furniture and implements of husbandry. Here is also a model of the Queen's Highland châlet from Balmoral, built entirely of Scotch Fir from the forests there, with rustic ornamentations, and a royal stag's head set over the door. Alongside this are exhibited some immense sections of Scotch Fir, the largest of which girthed 23½ feet at the base, the tree from which it was cut having contained 483 cubic feet of timber. The ground around the Queen's châlet has been laid out in flower garden style, and planted with a rich and varied assortment of coniferous and other trees by Messrs. Methven & Sons, Edinburgh. Near this Messrs. Ben. Reid & Co., Aberdeen, show an excellent group of Conifers, effectively arranged, amongst which we noticed some fine specimens of the new and rarer Conifers.

Machinery for converting timber from the rough log into the most finished state, is shown in motion by Messrs. John McDowall & Sons, Johnstone.

Messrs. Jack & Sons, Maybole, exhibit some well made and highly finished carts, timber jankers, wheels, &c.; while Messrs. Pooley & Sons show weighing machines in various forms, and of improved construction.

The above notes, jotted down on the day of opening, must only be considered as the results of a mere cursory glance at the many rare objects of interest to be seen at the great International Exhibition—an exhibition which we sincerely trust will be productive of great and lasting good to the cause of forestry in this country. The foundation of a School of Forestry in connection with the Royal Botanic Gardens at Edinburgh has long been hinted at, and we now trust that this vital question will receive the earnest attention it deserves at the hands of the Government and the authorities of the city of Edinburgh, for under all circumstances the present is a fitting opportunity for starting such an institution on a suitable and satisfactory basis. Other countries are far in advance of our own in this way, and it certainly cannot be said that the results of sending candidates for Indian forest appointments to be trained at Continental forest schools has been so satisfactory as to warrant its being said that we cannot educate them much better at home, fully qualified in every way to undertake the superintendence of our forests at home and abroad.

Reports of Societies.

National Rose: *July* 1.—The cold easterly winds which swept over the greater part of the country late in spring, checked growth to such an extent that it was not expected that the early Rose shows would be up to the average; and the long-continued drought has since rendered it almost impossible that the plants can now recover their vigour in time to save the record of the season's work from being one of mediocrity only. In the West of England an average may be maintained, but it is very doubtful if this standard will obtain elsewhere. Under these conditions a strong show was hardly expected at South Kensington, and consequently many, besides ourselves, were most agreeably surprised to find the display so good as it was. The nurserymen's flowers were by no means of a high standard of merit, and but little more can be said of those staged by the amateurs, excepting one or two collections, and especially so the box of eighteen Teas and Noisettes exhibted by the Rev. F. Page Roberts, The Rectory, Scole, which won the handsome shield presented by the Rev. J. A. Williams, and which were simply superb. The Challenge Trophy and £5 presented by amateurs, to be held for one year by the exhibitor of the best trade collection of seventy-two blooms, this year goes to Cheshunt for a change; while the corresponding prize offered by nurserymen, was won in good style by J. B. Haywood, Esq., Woodhatch Lodge, Reigate (Mr. Ridout, gr.)

Nurserymen's Classes.—Five competitors entered the lists for the Challenge Trophy, given in class 1, for seventy-two single blooms, and after a close competition between Messrs. Paul & Son and Mr. B. R. Cant the verdict fell to the former, and we need scarcely add the win was a popular one. In freshness and colour the Cheshunt flowers left little to be desired, but size and substance were generally wanting. The leading blooms were of Ulrich Brunner, Dr. André, Madame Lacharme, Etienne Levet, Niphetos, François Michelon, Abel Carrière, Alfred Colomb, Star of Waltham, Alba rosea, A. K. Williams, Sultan of Zanzibar, Jean Sury, Lady Mary Fitzwilliam, H. Schultheis, Madame Eugénie Verdier, Pride of Waltham, Xavier Olibo, the new Grandeur of Cheshunt, Madame Fanny Giron, Marie Baumann, Mdlle. Prosper Langier, Antoine Ducher, and Mrs. Geo. Paul. Mr. B. R. Cant had fine examples of François Michelon, Madame Ducher, Comtesse d'Oxford, Countess of Rosebery, Duchesse de Vallombrosa, Abel Carrière, John Stuart Mill, Etienne Levet, Xavier Olibo, Anna Olivier, Marie Baumann, Ville de Lyon, Niphetos, Madame Bravy, Caroline Küster, Marie Van Houtte, Mdme. Lacharme, Edward Morren, and Ferdinand Chaffolete. The 3d prize went to Messrs. Keynes, Williams & Co., and the 4th to the Cranston Nursery Company, Hereford. In the next class for forty-eight trebles, Mr. Cant was more fortunate, securing the 1st prize, while equal 2d were awarded to Mr. Turner and Messrs. Paul & Son, the 3d to the Cranston Nursery Company, and the 4th to Messrs. Keynes, Williams, & Co. Here Mr. Cant had a strong lot, including fine blooms of Madame Ducher, Antoine Ducher, Duke of Edinburgh, Dr. Sewell, Prince Arthur, Horace Vernet, Boildeau, Général Jacqueminot, Devoniensis, Merveille de Lyon, Countess of Oxford, Baroness Rothschild, Prince Camille de Rohan, Duke of Teck, François Michelon, Victor Verdier, Duchesse de Vallombrosa, &c. In the next two lots, conspicuous for their excellent quality, were Etoile de Lyon, Caroline Küster, Madame Marie Verdier, Sultan of Zanzibar, Madame Willermoz, Niphetos, Jean Ducher, Alba rosea, Sir G. Wolseley, Marie van Houtte, Star of Waltham, Madame H. Jamain, Merveille de Lyon, and Catherine Mermet. With eighteen Teas or Noisettes, Mr. B. R. Cant also held his own, having by far the finest flowers for size and brightness in the class. Madame Willermoz, Catherine Mermet, Devoniensis, Souvenir d'Elise, Madame Bravy, Innocente Pirola, Madame Angèle Jacquier, Madame Margottin, Rubens, Maréchal Niel, Marie van Houtte, Moire, Perle des Jardins, Madame Cusin, Caroline Küster, Souvenir d'un Ami, and Anna Olivier, were all worthy of remark. Messrs. Paul & Son were 2d; Mr. G. Prince, Oxford, 3d; and Mr. Turner 4th.

In the second division, open only to exhibitors not competing in the previous section, Messrs. Curtis, Sandford & Co., Torquay, took the lead, securing the highest honours for forty-eight and twenty-four singles respectively, with flowers of fine size, and surprisingly fresh and bright in colour. The leading bloom in their stand of forty-eight was a superbly coloured Général Jacqueminot, which was adjudged to be the finest single H.P. shown by nurserymen, and grand flowers of Star of Waltham, Lady Sheffield, François Michelon, Duchesse de Morny, La Havre, Marie Rady, lovely in colour; Duchess of Bedford, Beauty of Waltham, Alfred Colomb, Madame Lacharme, Madame Vidot, Merveille de Lyon, extra fine; A. K. Williams, Lord Bacon, Etienne Levet, and Countess of Oxford. Mr. Frank Cant, Colchester, came in 2d, Mr. John House, Peterborough, 3d; and Messrs. J. Jefferies & Sons, Cirencester, 4th. In the class for twenty-four blooms there were twelve competitors as compared with five in the 48's, so that the Torquay growers' win here was even more creditable. Besides sorts already named as being shown by them in the former class, they had in this stand many fine examples of Alfred Dumesnil, Madame Gabrielle Luizet, Captain Christy, Madame C. Wood, Comtesse de Serenye, Reynolds Hole, Marie Rady, Duchess of Bedford, Sénateur Vaisse, Elie Morel, and Jean Liabaud. Messrs. G. Cooling & Son, Bath, came in a good 2d, with Mr. Frank Cant 3d, and Messrs. John Jefferies & Son 4th. Several boxes of twelve Teas were also staged in this division, and Mr. Frank Cant was well to the front, winning with a stand containing Souvenir d'un Ami, Souvenir d'Elise, Devoniensis, Maréchal Niel, Catherine Mermet, Marie van Houtte, Moire, Madame Welch, Jean Ducher, and Rubens—all fresh and nice; Mr. John Mattock, New Headington, Oxford, was 2d, with a very pretty lot; Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, 3d; and Messrs. J. Jefferies & Son, 4th.

Amateurs' Classes.—The first collection to be noticed in this division is the one that secured the handsome Challenge Trophy. The class for forty-eight singles, distinct, T. B. Heywood, Esq., Woodhatch Lodge, Reigate (gr., Mr. J. Ridout), whose blooms of extra merit were of Capt. Christy, Eugène Verdier, Mrs. Baker, the sport from C. Joigneaux. a fine bloom, Horace Vernet, Duchesse de Morny, Lady Mary Fitzwilliam, La France, Jean Pernet, Edward Morren, Lady Sheffield, Countess of Rosebery, and Mons. Noman; the remainder composing the stand were Madame Lacharme, Etienne Levet, Marie Baumann, Thérèse Levet, Madame Gabrielle Luizet, Mons. E. Y. Teas, Abel Grand, Abel Carrière, John Hopper, Anna Olivier, Pierre Notting, Alfred Colomb, Fisher Holmes, Baroness Rothschild, Marquise de Castellane, Mons. Jowitt, Beauty of Waltham, Louis van Houtte, A. K. Williams, François Michelon, Ferd. de Lesseps, Hippolyte Jamain, Star of Waltham, Dr. Hogg, Madame Rady, La Havre, Royal Standard, Mrs. Laxton, Général Jacqueminot, Duchesse de Vallombrosa, Chas. Lefebvre. The 2d prize was awarded to the Rev. Hugh A. Berners, Harkstead Rectory, Ipswich. In this admirable stand were fine examples of Marie Baumann, Beauty of

Waltham, Magna Charta, Victor Verdier, Baroness Rothschild, Marie Finger, Rubens, Hippolyte Jamain, François Michelon, Thos. Mills, Duchesse de Caylus and Duke of Connaught. 3d, F. W. Girdlestone, Esq., Sunningdale, Berks, who had Baron Bonstettin, A. K. Williams, Crown Prince, and a grand bloom of Marie Finger, to which was awarded the Silver Medal of the Society as being the best H.P. shown by amateurs. 4th, A. J. Waterloo, Esq., Great Doods, Reigate (gr., Mr. Brown). For the best twelve distinct Roses of three trusses of each, T. B. Heywood, Esq., was again 1st, with fine blooms of the following kinds :—Alfred Colomb, Edward Morren, Captain Christy, Monsieur Noman, Etienne Levet, Madame Gabrielle Luizet, Duchesse de Vallombrosa, Beauty of Waltham, La France, Countess of Oxford, Madame Lacharme, and Charles Lefebvre ; 2d, F. W. Girdlestone, Esq., whose Marie Finger, Marquise de Castellane, Baron Bonstettin, La France, and A. K. Williams were fine blooms ; 3d, Thomas B. Hall, Esq., Larch Wood, Rock Ferry, who showed Sir Garnet Wolseley, Marquise de Castellane, and Madame Lacharme in superb condition. For the best twelve Tea Roses, which were among the most admired blooms in the show, the 1st prize was awarded to A. J. Waterloo, Esq., Great Doods, Reigate, for the sorts Caroline Küster, Rubens, Souvenir d'Elise Vardon, Jean Ducher, Jean Pernet, Souvenir d'un Ami, Etoile de Lyon, amongst the best ; and Marie van Houtte, Catherine Mermet, Innocente Pirola, and Madame Willermoz the remaining sorts. The 2d prize was taken by the Rev. Hugh A. Berners, whose Madame Bravy, Souvenir d'Elise, and Caroline Küster were of good quality. Alfred Slaughter, Esq., Jarvis Villa, Steyning, took the 3d prize, having capital blooms of Devoniensis, Madame Lacharme, Madame Lambard, Jean Ducher, and Bouquet d'Or ; T. W. Girdlestone, Esq., being 4th, with blooms much less in size. In the competition for the best twenty-four single trusses, distinct, a class in every way as well represented with perfect flowers as the former ones—the premier prize was awarded to the Rev. Joseph H. Pemberton, Havering-atte-Bower, Romford, the most meritorious blooms in whose stand were Marie Verdier, Souvenir de la Malmaison, Duchess of Bedford, Marie Finger, La France, Marquise de Castellane, Madame Gabrielle Luizet, Duke of Edinburgh, Duchesse de Vallombrosa, Constantine Tretiakopf, Annie Laxton, Countess of Roseberry, Madame Victor Verdier, Etienne Levet, and Exposition de Brie ; the flowers of lesser merit being Star of Waltham, Horace Vernet, Marie Cointet, Mons. Louis van Houtte, Caroline Küster, A. K. Williams, Marquise de Castellane, Beauty of Waltham, and Helen Paul, an exquisite flower of pale flesh, but small in this instance. The 2d prize was awarded to Captain A. Christy, Sidmouth, the extra good blooms in the stand being François Michelon, Jean Ducher, Duchess of Bedford, Charles Lefebvre, Bouquet d'Or, and Baroness Rothschild. Miss Watson Taylor, Manor House, Headington, Oxon (gr., Mr. W. Gurdon), was the winner of the 3d prize, the sorts A. K. Williams, La France, E. Y. Teas, Prince Arthur, Louis van Houtte, Duchess of Bedford, being especially good ; George Baker, Esq., Holmfels, Reigate, being 4th ; and F. C. Pawle, Esq., Northcote, Reigate, was Highly Commended. The competitors for the best six Tea Roses, to be shown in trusses of three, were considerably more than in the bigger classes, many charming stands being put up, Miss Watson Taylor winning the 1st prize with A. K. Williams, a very fine bloom ; Prince Arthur, La France, Duchess of Bedford ; of the others, Marie van Houtte was a little over-blown, as was Marguerite de St. Amand ; 2d, Mr. S. P. Budd, Gay Street, Bath, whose François Michelon, La France, and Marie Baumann were very good ; 3d, Rev. J. H. Pemberton ; 4th, W. H. Wakeley, Esq., Macklands, Rainham. For the best twelve Tea or Noisette Roses, single trusses, distinct, Miss W. Taylor again headed the list, her Catherine Mermet, Souvenir d'un Ami, Amazon, and Maréchal Niel being perfect ; the other sorts were Madame Willermoz, Marie van Houtte, Niphetos, Souvenir d'Elise, Comtesse de Nadaillac, and Alba rosea, 2d, Rev. E. L. Fellowes, Wimpole Rectory, Royston, his stand containing beautiful examples of Maréchal Niel, Anna Olivier, Souvenir d'Elise, Adam, and Marie van Houtte ; 3d, W. H. Wakeley, Esq. ; 4th, R. L. Knight, Esq., Sittingbourne. For the best twelve, distinct, single trusses, the 1st prize, a piece of plate, given by J. House, Esq., was awarded to R. E. West, Reigate, his stand consisting of excellent blooms of Captain Christy, Annie Wood, Baroness Rothschild, La Havre, François Michelon, Marie Finger, Abel Carrière, Madame Victor Verdier, Marie Baumann, Madame Gabrielle Luizet, Alfred Colomb, and Duchesse de Vallombrosa ; 2d, E. M. Bethune, Esq., Denne Park, Horsham (gr., Mr. H. Harris), whose La France, Marie Ledechaux, and Marguerite de Brassac, were fine flowers ; 3d, T. F. Burnaby Atkins, Halstead Place, Sevenoaks, Jean Ducher, A. K. Williams, Niphetos, and C. Lefebvre, being likewise fine examples ; 4th, Rev. J. A. Fellowes, Blighton Rectory, Norwich. For the best nine, shown in single trusses, distinct, 1st, Mrs. Fuller, The Vicarage, Bexley, with fine blooms of Etienne Levet, La Havre, La France, and Captain Christy ; 2d, Rev. R. C. Hales, Woodmancote Rectory, Henfield, Sussex —his A. K. Williams, Dupuy Jamain, Marie van Houtte, being good blooms ; 3d, G. G. Stone, Esq., Eastcote, Redhill (gr. Mr. C. Goode) ; 4th, Edward Mawley, Esq., Addiscombe ; an equal 4th being awarded to the Rev. H. B. Biron. For the best six, distinct, single trusses, 1st, W. Miller, Esq., Sewardstone Lodge, Chingford (gr., Mr. J. Turk). In this stand Duchesse de Vallombrosa, Souvenir de Madame Alfred, Jean Ducher, and Madame Auguste Perriere, were superior examples. 2d, Charles E. Cuthill, Chapel Croft, West Humble, Dorking, whose blooms of La France, Etienne Levet, and Marguerite de St. Amand, were very good ; 3d, J. G. Hodgson, Esq., Saltwood Rectory ; 4th, Rev. Frank S. Taylor, Littleton Vicarage, Evesham. For the best six Tea or Noisette Roses—1st, Rev. H. Page Roberts, Scole Rectory, Norfolk, whose Souvenir d'Elise Vardon, Madame Hipolyte Jamain, and Niphetos, were of great merit—the others in the stand being Jean Ducher, Caroline Küster, and Catherine Mermet ; 2d, Rev. R. C. Hales, his blooms of Marie van Houtte, Jean Ducher, and Madame Bravy, being fine ; 3d, J. G. Hodgson ; 4th, W. Miller, Esq.

Open and Extra Classes.—The open classes consisted of six in number, but only in five was there any competition, the Gold Medal for three trusses of any new seedling Rose, or distinct sport, not being awarded. The best twelve new Roses came from Messrs. Paul & Son, and consisted of Lady Mary Fitzwilliam, H. Schultheis, Ulrich Brunner, Queen of Queens, Baron N. de Rothschild, Helen Paul, Grandeur of Cheshunt, Merveille de Lyon, Comtesse de Paris, Etoile de Lyon, Madame Melaine, Vigneron, and Pride of Waltham. Messrs. Curtis, Sandford & Co., who were a close 2d, had Ulrich Brunner in fine form, Madame Marie Garnier, André Gill, Souvenir de Madame Berthier, &c. ; 3d, Mr. B. R. Cant. For twelve single trusses of any yellow Rose, Messrs. Paul & Son were 1st, with Marie van Houtte ; 2d, Mr. B. R. Cant, with Maréchal Niel ; 3d, Mr. J. Mattock, with Marie van Houtte. In the any white Rose class the highest honours were divided between Messrs. Curtis, Sandford & Co., and Mr. B. R. Cant, the former having a magnificent lot of Merveille de Lyon, and the latter a charming sample of Devoniensis. Messrs. Paul & Son were 3d, with Niphetos. The 1st prize for twelve crimson Roses went to an exhibitor whose name we did not ascertain ; Mr. J. Hoare was 2d, with A. K. Williams, large and fine ; 3d, Messrs. Curtis, Sandford & Co., with Marie Baumann.

In the extra classes by far the finest exhibit was the before-mentioned stand of eighteen Teas and Noisettes shown by the Rev. F. Page Roberts, Scole, Norfolk, which included a magnificent flower of Souvenir d'Elise Vardon—the finest Tea Rose shown by an amateur ; and large, beautifully-coloured blooms of Anna Olivier, Madame Camille, Perle de Lyon, Madame Bravy, Jean Ducher, Madame H. Jamain, Niphetos, Souvenir d'un Ami, Madame Margottin, Souvenir de Paul Néron, Madame Lambard, Innocente Pirola, Marie van Houtte, Caroline Küster, Marie Guillot, Madame Welch, and Jean Ducher ; the Rev. J. H. Pemberton secured the 2d prize, and the Rev. E. L. Fellowes the 3d. For six, distinct, single trusses, the 1st prize went to G. Christy, Esq., Buckhurst Lodge, Westerham ; the 2d to E. B. Lindsell, Esq., Bearton, Hitchin ; the 3d to R. E. West, Esq., Reigate ; and the 4th to the Rev. G. H. Hodgson, Saltwood Rectory, Hythe. For six new Roses the 1st prize went to F. W. Girdlestone, Esq., Sunningdale ; and for six trusses of any Rose, the Rev. H. A. Berners came in 1st, with a grand box of Jean Ducher.

Torquay Horticultural : *June* 26.—The annual exhibition of this Society was held in marquees erected in a field close to the centre of Torbay, thus commanding a delightful view of Torquay and the surrounding scenery, offering a rich combination of attractions rarely seen in conjunction with an exhibition. The long period of drought previously endured was expected to influence the quality of the Roses and the number of competitors. Such, however, was not the case, the exhibition being as large as on any former occasion, and the Roses in as good form. Messrs. Curtis, Sandford & Co., of the Down Roseries, Torquay, took 1st prize in every class in which they competed ; Messrs. Cooling, of Bath, the 2d. Mr. Gurdon, gr. to Miss Watson Taylor, Manor House, Headington, Oxford, was very successful in the amateur classes ; Captain Christy, G. Endacott, Esq., and J. Drew, Esq., were the other principal prizetakers.

In Class 1, for twelve new Roses of 1883 and 1884, Messrs. Curtis, Sandford & Co., took 1st, staging Joachim du Bellay, André Gill, Baron Nathaniel de Rothschild, Merveille de Lyon, a splendid white ; Madlle. Marie Digat, a beautiful deep crimson ; Madame Veuve Alexandre Pommeroy, Antoine Chantini, very good ; Queen of Queens, Lord F. Cavendish, a fine fiery red, imbricated ; the best in the stand were Marguerite de Roman, Admiral Seymour, and Alexander Dupont ; Messrs. Cooling & Son, 2d. Class 2. Six blooms of any new Rose of 1883.—Messrs. Curtis, Sandford & Co. were 1st, with Merveille de Lyon Messrs. Cooling 2d, with Queen of Queens. Class 3. For twelve blooms, any one variety.—Messrs. Curtis, Sandford & Co. again were placed 1st, with a splendid box of Merveille de Lyon, a beautiful Rose ; Messrs. Cooling again 2d, with Violet Bowyer. Class 4. Seventy-two distinct varieties, one truss of each.—Messrs. Curtis, Sandford & Co. took 1st honours, with a splendid lot of Roses—Captain Christy, Marie Baumann, Countess of Oxford, Reynolds Hole, Horace Vernet, E. Y. Teas, Merveille de Lyon, and Madame A. Foulon being especially good blooms, their collection being of their usual excellence. Class 5. Forty-eight varieties.—Messrs. Curtis, Sandford & Co. were 1st—Mons. Constantine, Tretiakopf, Elie Morel, Marie Verdier, Duke of Wellington, A. Colomb, Merveille de Lyon, and Violet Bowyer being fine blooms ; Messrs. Cooling, who were again 2d, had La France, Lady Mary Fitzwilliam, Madame G. Luizet, A. K. Williams, Comte de Flandres, Violet Bowyer, and Queen of Queens ; Mr. R. W. Beachy, nurseryman, Kingskerswell, took the 3d prize. Class 6. For thirty-six varieties, one truss of each.—Messrs. Curtis, Sandford & Co. put up a very fine box of blooms ; noticeable among them were Etienne Levet, Merveille de Lyon, Bartholemy Joubert, A. K. Williams, Madame G. Luizet ; R. W. Beachy, 2d. Class 7. Twenty-four ditto.—Messrs. Curtis, Sandford & Co. and R. W. Beachy were placed in the same order as in the preceding class. In Class 8, for twelve Teas and Noisettes.—1st, Mr. Gurdon, with a capital lot of blooms. His stand contained Rubens, Anna Olivier, Devoniensis, Souvenir d'un Ami, Niphetos, Marie Sisley, Jean Ducher, Souvenir de Paul Néron, and Catherine Mermet, each in good form ; 2d, Captain Christy : good blooms of Catherine Mermet, Jean Ducher, and Etoile de Lyon were put up in his collection ; 3d, Moreton Sparkes, Esq.

Amateur Classes.—Class 9. Forty-eight distinct varieties, one truss of each.—1st, Mr. Gurdon, his collection containing excellent blooms of Teas and H.P.'s ; 2d, G. Endacott, Esq., who was very close with good blooms, but rather overblown. Class 10. Twelve trebles. — Mr. Gurdon and Captain Christy took 1st and 2d prizes respectively. Class 11. For twenty-four varieties, one truss of each, there were seven competitors, and Captain Christy came to the front with a splendid box of blooms ; Mr. Leach, gr. to J. Drew, Esq., Park Villa, Kenton, 2d ; and Mr. Cole, gr. to W. B. Fortescue, Octon, Torquay, 3d. Class 12. Twelve varieties, one truss of each.—1st, Captain Christy ; 2d, Mr. Gurdon ; 3d, Moreton Sparkes, Esq. This class had many competitors. Class 13. For six trebles.—1st, Mr. Gurdon ; 2d, G. Endacott, Esq. ; 3d, Mr. Leach. Class 14. Twelve blooms of one variety.—1st, Captain Christy, with Duchesse de Vallombrosa, very good ; 2d, Mr. Gurdon, with M. de St. Amand. In addition Messrs. Curtis, Sandford & Co., staged several boxes of cut Roses, not for competition.

The Orchid classes were very attractive. For four Orchids, 1st, Mr. Medland, gr. to Moreton Sparkes, Esq., Rooklands, Torquay. For a single specimen, 1st, J. M. Brown, Esq., Florian, Torquay, with a beautiful Cattleya Mossiæ ; 2d, Mr. Medland, with Dendrobium formosum giganteum.

The nurserymen of the neighbourhood put up large collections of plants, adding much to the beauty of the display. Messrs. Smale, of the Barton Nurseries, had an excellent lot of useful decorative plants, arranged effectively, including Palms, Tree Ferns, Araucaria excelsa, Anthurium Andreanum, and some nice specimens of Cattleya Mossiæ, good single and double Begonias, &c. ; in front were boxes of cut flowers in variety. Messrs. Philips, Torbay Nurseries, staged a very similar collection, including Lilium longiflorum album and L. auratum, some splendid examples of Calceolarias, Hydrangeas, and show Pelargoniums. Messrs. Allward & Sons, Braddon Hill Nursery, Torquay, put up a collection, comprising such things as foliaged plants, single and double Begonias, &c. Mr. Burridge, nurseryman, Paignton, had also a collection of plants similar to the foregoing. Messrs. Lucombe, Pince & Co. had a fine assortment of stove and greenhouse plants, Orchids, &c. The Orchids themselves made a fine display. The same firm showed seedling Pansies, Iris Kæmpferi, Carnations The Governor and Gloire de Nancy. Messrs. Veitch & Son, of Exeter, contributed a very choice collection of plants, including new double Begonias, Little Pet Rose, a group of Hydrangea paniculata grandiflora, Japanese Maples that were exceedingly pretty and in great variety. They also had well bloomed specimens of Odontoglossum vexillarium var. rosea. They exhibited likewise a number of photographs of rockwork erected by them in the county, some of which have been described in the columns of this paper. Mr. R. W. Beachy, nurseryman, Kingskerswell, showed Violas and herbaceous flowers, Nicotiana affinis, and several new varieties of zonals, &c.

Fruit.—Mr. Geeson took the 1st prize for the collection of six kinds, with good examples of Black Hamburgh and Buckland Sweetwater Grapes, Hale's Early Peaches, Scarlet Premier Melon, Queen Pine, and James Veitch Strawberries. The same competitor took 1st prize also for black and white Grapes with the same varieties. Mr. Cole, gr. to W. B. Fortescue, Esq., took 2d prize, and also for black Grapes. For six Peaches, 1st, Mr. J. Hobbs, gr. to H. B. Samuelson, Esq., M.P., with very fine fruit ; 2d, Mr. Cole. Mr. Geeson was 1st for Melon (single fruit) ; Mr. Leach 1st for Strawberries, and was also 1st for a dish of Cherries.

Vegetables were limited to a few classes only, but for the collection good productions were staged. 1st, Mr. P. B. Drinkwater ; 2d, Mr. Hobbs ; 3d, Mr. Leach. Mr. G. H. Pearce, market gardener, Torquay, showed an excellent collection of vegetables and fruit, conspicuous being Sir Joseph Paxton and President Strawberries.

Twickenham Horticultural : *July* 1. — The fifteenth annual summer exhibition of this suburban Society was held in the admirable pleasure grounds adjoining Poulett Lodge, the residence of J. E. Meek, Esq., and which is situated close to the town, and presenting advantages to which many show committees are strangers. The weather was brilliant, perhaps too much so, but fine weather is such a boon for a flower show that it would be ungrateful to complain of exceeding warmth. A large tent devoted chiefly to decorative groups proved exceedingly attractive, and a very brilliant feature in it was a big collection of show and fancy Pelargoniums—some of the specimens being admirably grown, sent not for competition by W. Clay, Esq., of Surbiton (gr., Mr. Wiggins), which deservedly received high commendation. Messrs. Jackson & Sons, of Kingston, had a group of choice plants, a prominent feature in which was a good plant of Franciscea calycina major, that was supported by a fine Cypripedium barbatum superbum, some charming Ericas, good Orchids, and other pleasing plants. Messrs. Hooper & Co. (manager, Mr. Brockaus), grouped a number of plants effectively in the centre of the tent, and Messrs.

C. Lee & Sons had one of their remarkable and unique groups of hardy decorative trees and shrubs, including beautiful variegated Acers, Elders, Oaks, Elms, Chestnuts, and other effective things, with which frequenters of most London shows are now becoming familiar. Messrs. Jas. Carter & Co., High Holborn, sent a very interesting group of twelve baskets of double German Stocks, one of which was full of mixed kinds: the white, scarlet, violet, and pale blue colours were very pleasing. Mr. R. Luing of Twickenham, had also, not for competition, a large, quantity of cut Roses and some capital plants. The competitive decorative groups were of admirable character, Messrs. Fromow & Sons, Turnham Green, having one of exceeding elegance and beauty, and were close run by Mr. W. Brown, of Richmond, who is in this sort of work an able decorator. Several smaller groups in another class were capital in their way, and gave good competition.

The best stove and greenhouse plants came from Mr. J. Munro, gr. to E. D. Paul, Esq., Cambridge House, Twickenham, and whose excellent lot included Clerodendron Balfourianum, Stephanotis floribunda, the somewhat rare Gloriosa superba, Hoya carnosa, &c.; Mr. Parsons, gr. to T. Twining, Esq., Twickenham, was 2d, having in his lot a fine Impatiens Sultani, and a large piece of Oncidium crispum. Mr. Munro had the best six foliage plants, including good Crotons majesticus and Regina, a large Dracæna Youngii, of fine colour; Pandanus Veitchii, and a couple of Palms. Mr. Parsons was again 2d, chiefly with Palms. With six Ferns, Mr. B. Morrell, gr. to J. S. Rutter, Esq., Richmond, was a good 1st; his plants, inclusive of a fine golden Gymnogramma and a good Davallia Mooreana, were excellent. Mr. Munro had smaller specimens. Achimenes are always shown well here, and the six pans put up by Mr. J. Sallows, gr. to T. J. Flack, Esq., Twickenham, were splendid examples of culture, and full of bloom. The kinds were chiefly old ones, but still very pleasing. Mr. Munro had smaller pans, but prettily flowered. Some very good Gloxinias were staged by Mr. J. Parsons, his nine plants being very fresh and finely flowered. The same exhibitor had the best six Begonias, small but neatly flowered plants, some good plants also coming from Messrs. Munro and Sallows. Only two lots of bedding Pelargoniums were staged; the first one, a capitally bloomed and grown collection, came from Mr. C. Waite, gr. to the Hon. W. P. Talbot, Esher, and included Blanche Gordon, Colonel Holden, Mrs. Strachan, White Vesuvius, and a couple of doubles; whilst Mr. Sallows' lot were all doubles, though admirably flowered. Mr. Morrell had the best six Fuchsias, good old sorts, well bloomed. Cut flowers were fairly well shown, though the Rose display was weaker than usual. Mr. C. Warwick took the 1st place with a very fresh twenty-four, and Mr. J. A. Moorman had the best twelve. Mr. Warwick was, as usual, placed 1st with twelve bunches of Gloxinias, set in moss and without Fern—really a beautiful lot of flowers, and worthy of all admiration. Some very good table decorations were shown, though chiefly of the usual pattern, but in a single stand class a small upright egg-shaped vase on a tripod containing just a handful of semi-double bright-coloured Poppies and Fern was well placed 1st, as it was an arrangement that extorted admiration. Mrs. Allfrey's dressing of three table pieces was singularly light and elegant, and deservedly obtained a 1st prize. One epergne filled with white Nymphæas and Fern was original and pleasing in spite of its heaviness and lack of variety in colour. A basket of Roses with Fern sent by a lady was a charming arrangement.

The best black Grapes, Hamburghs, came from Mr. Parsons; the best whites, Buckland Sweetwater, from Mr. Waite; and the best Melon, Bellemoor Hybrid, from Mr. Morrell. Peaches and Nectarines were very good, and Mr. Morrell's brace of Tender and True Cucumbers were first-rate. Mr. Waite had the best collection of ten dishes of vegetables, really a capital lot, and admirably put up; Mr. Morrell coming 2d, and Mr. Thompson, of Hounslow, the best dish of Tomatos. Mr. W. Poupart, of Twickenham, had a grand collection of vegetables, fruit, and flowers, market grown produce; and Messrs. R. Clarke, Howell, and Mann some really superb Strawberries. The beautiful grounds around the house were thrown open to the visitors, and all the surroundings reflected the highest credit upon the gardener, Mr. Bates.

Ipswich and East of England Horticultural: —This Society commenced its annual *fête* on June 26, the committee having decided to hold a two days' show, so as to fit in with the Suffolk agricultural meeting, which took place at the same time in Christchurch Park, and as this latter event brought great numbers from all the outlying districts into the town, which was in gala dress, the coffers of the Horticultural Society must have become well filled. The prospect of this, and the great success that has attended his efforts, cannot fail to be a source of much satisfaction to the Rev. H. A. Berners, the honorary secretary, who has laboured so assiduously for years to lift the Society out of the Slough of Despond and place it on a firm footing, which work he has now accomplished, and deserves the thanks of all who have to do with this part of the county, as there was a near prospect of the show dying out. This would have been matter for deep regret, for though there are many now held in the country, the interests of horticulture must suffer even by the loss of one, especially in an important part of the country with a town like Ipswich, numbering some 60,000 inhabitants, among whom there are many wealthy merchants having fine houses and grounds in the suburbs. Although the time and attention of several of these must be much absorbed in the gigantic business undertakings they are connected with, they are fortunately warm patrons of gardening, as was evidenced by their productions, those of E. Packard, Esq., R. C. Ransome, Esq., and W. H. Booth, Esq., being specially noticeable for the quantity and quality of the exhibits, which went far to make up the show.

It was feared at one time that the tents would be very thin, as Sir Richard Wallace, one of the Society's chief supporters, has left Sudbourne, where the houses, under Mr. Bethel's able and skilful management, were full of fine specimens of plants and the various varieties of fruit, many and much of which used to be sent to Ipswich and Woodbridge *fêtes*. Mr. Allan, too, Lord Suffield's able gardener, was conspicuous by his absence; but it is quite as well perhaps that these strong growers should stay away now and then, as it gives the weaker and more timid courage to venture, and they do, often surprising themselves by the way they are afterwards able to hold their own, success having given them the necessary fillip to struggle and use, as well as improve their skill in battling with their opponents, whom, once defeated, they are not afraid to meet in fair fight. This is how it should be, and the loss of one big exhibitor often brings many smaller; but for all this it is to be hoped that the new gardener at Sudbourne and the new one at Gunton may make the names of those noted places familiar at Ipswich again.

In the fruit department Mr. Blair (Sir Geo. Broke Middleton's gardener) was, as usual, to the front with a collection of fruit (Pines excluded) consisting of nice, compact, well coloured bunches of Black Hamburgh and Golden Queen Grapes, fine Royal George Peaches, ditto Nectarines, and Brown Turkey Figs, British Queen Strawberries, and well finished handsome Scarlet Premier and Hero of Lockinge Melons, for which he took the special prize offered by Sir Richard Wallace. That given by the Mayor of Ipswich (J. May, Esq.), for three bunches of black Grapes, fell to Mr. W. Sheppard, gr. to E. Packard, Esq., of Birkfield; the 2d to Mr. Chenery, gr. to W. H. Booth, Esq.; and the 3d to Mr. Hobson, gr. to C. B. Skinner, Esq., of The Chantry. In the class for white, the 1st prize was awarded to Lady North's gardener at Glenham Hall, who had big berried Buckland Sweetwater; and Mr. Sheppard, gr. to E. Packard, Esq., came in 2d with large bunches of Foster's Seedling; the same kind, almost equally fine, but less ripe, being shown by Mr. Chenery, and coming in 3d. For the best dish of Peaches, Mr. W. Sheppard was 1st, the 2d falling to Mr. Hobson, and the 3d to Mr. Hobson, gr. to C. B. Skinner, Esq. For Nectarines, Mr. Hobson took 1st with well coloured Lord Napier, and Mr. W. Sheppard 2d with the same valuable fine early kind. In the contest for Melons, green-fleshed varieties, Mr. Blair was 1st, and Mr. Miller, gr. to Lord Rendlesham, 2d. Strawberries, for flavour, were represented by British Queens, and Mr. Blair took 1st, and Mr. Steven of Ipswich 2d. The prize for thirty for weight fell to Colonel Long's gardener, Messrs. Prior & Son taking 3d. The show was too early for bush fruits, which are backward, and will not, judging from present appearances, be at all fine.

For the collection of twelve sorts of vegetables there was strong competition, and Mr. Blair won the 1st prize, having in his lot fine Trophy Tomatos, Peas, close white-headed Cauliflower, Cucumbers, Mushrooms, French and Broad Beans, Asparagus, and Potatos—Mr. Crisp, of Playford Hall, and Mr. Cobbold, of Ipswich, taking 2d and 3d. Among the other classes in this department there was nothing to call for any special remark, but it was a pleasing feature in the show to see the cottagers in such strong force both as regards vegetables and plants, for which good prizes were offered.

The great attraction in the exhibition was the Roses, the honorary secretary being a very enthusiastic cultivator, and one of the most successful competitors, he having won the 1st prize in the large class for thirty-six, in which there were five entries, the best flowers in the collection being Monsieur Rady, Madame Lacharme, Etienne Levet, Marie Finger, Marie Rady, and the lovely delicately tinted Violet Bowyer; the Rev. H. T. Frere, of Burstock Rectory, coming in 2d, and Miss Penrice 3d. For the best twenty-four, Mr. D. T. Fish, of Hardwicke, was 1st, his best consisting of Niphetos, Baronne de Rothschild, Jean Ducher, Beauty of Waltham, and La France. In the open class for forty-eight the contest lay between the two rival Cants, the champion B. R. Cant, who has been so long before the public still holding his own by again winning on this occasion with a very fine lot, among which the most noteworthy were Ville de Lyon, Mons. Gabrielle Luizet, Marguerite de St. Amand, Souvenir d'un Ami, Dupuy Jamin, Annie Laxton, Etienne Levet, Souvenir d'Elise (very fine), Innocente Pirola, and Duchess de Vallombrosa. Mr. Frank Cant had also a very good lot, the finest flowers being Wilhelm Koile, Madame Bravy, Marquise de Castellane, Homer (very large for the variety), Etienne Levet, and Catherine Mermet, the latter perfect in colour. In the class for twelve, three trusses of each sort, Mr. B. R. Cant was again 1st, Mr. F. Cant 2d, and Miss Penrice 3d. For the best twelve Tea or Noisette, Mr. B. R. Cant again took the lead. In the class for twelve to be competed for by amateurs, the Rev. Page Roberts took the special prize offered by R. C. Ransome, Esq.; the 2d falling to the lot of Mr. D. T. Fish, and the 3d to Mr. Rushmore, gr. to Sir C. Rowley, of Tendring. For the best twelve Tea and Noisette the special prize of £2 2s. offered by F. H. Fosdick, Esq., the Rev. H. A. Berners came in 1st, the Rev. Page Roberts 2d, and the Rev. Foster-Melliar 3d. In the sixes the Rev. Page Roberts was again to the fore, and Mr. D. T. Fish 2d; and the same gentlemen were placed in a like position for the best Rose in any amateur's collection, the first-named taking the National Society's Silver Medal, and the latter the bronze. Cut zonal Pelargoniums, as usual, made a good show, but the herbaceous flowers, next to the Roses, attracted most notice, the stand shown by the Messrs. Gilbert, nurserymen, of Ipswich, having some good showy things in it, the most noteworthy being Gladiolus The Bride, Delphinium formosum, Beauté de Peyron and hyacinthiflora, Lilium umbellatum, Gaillardia grandiflora, Iris vulgaris, the old Dictamnus fraxinella, Alströmerias, and Ornithogalum arabicum, the latter of which was much admired on account of its fine appearance and ivory whiteness. The 1st prize for six bunches of stove and greenhouse flowers was taken by Mr. Mill, gr. to Lord Rendlesham, among which were Odontoglossum Pescatorei, Amaryllis The Queen, Epidendrum vitellinum majus, and Anthurium Scherzerianum, with much finer spathes than are usually seen. The best thing in the 2d lot, contributed by Mr. Mundey, gr. to R. C. Ransome, Esq., was Hibiscus Lamberti, the flowers of which were double, and remarkably bright. In the plant department there was a falling off from causes already referred to, but for all that Mr. W. Sheppard, gr. to E. Packard, Esq., contributed four fine-foliaged subjects that were well grown and coloured, the most striking thing in the lot being Dracæna Shepherdi, with its big strongly marked leaves, and in the open class for the same number Mr. W. Sheppard stood 2d, the Messrs. Gilbert taking the lead. For four stove and greenhouse plants in flower Mr. Mundey, gr. to R. C. Ransome, Esq., was 1st, and Mr. W. Sheppard 2d; and the first named was also to the fore for the best specimen with a well flowered Ixora Fraseri. In the open class for the best six stove and greenhouse plants the Messrs. Gilbert were a good 1st, their best plant being a fine well bloomed Erica Cavendishi. Mr. W. Sheppard took 2d for a nice even lot.

The groups of stove and greenhouse plants set up in a limited space were much admired, and deservedly so, as they comprised just the sized and right sort of things for furnishing, and showed what might be done with them when arranged with taste. In the open class the Messrs. Gilbert were the only exhibitors, but among the amateurs there was keen competition, F. T. Cobbold, Esq., being 1st, and R. C. Ransome, Esq., 2d. The last-named gentleman (gr., Mr. Mundey) contributed six Gloxinias, as fine as any ever staged, the blooms being very large, bright, and stout, and the plants perfect. The 2d and 3d lots, shown by Mr. Chenery, gr. to D. H. Booth, Esq., and those of Mr. Westhorp were also remarkably good. The prize for six dinner-table plants was won by Mr. Blair, and the 2d by Mr. W. Sheppard. For six exotic Ferns the Messrs. Gilbert were 1st, they having a very fine Gleichenia rupestris glauca, Microlepis hirta cristata, Gymnogramma chrysophila, Davallia pyxidata, and Leucostegia immersus. Mr. W. Sheppard came 2d, the best in his lot being a Davallia Mooreana—a fine exhibition Fern.

Massachusetts Horticultural: *Boston, June 7.* —The Rhododendron show to-day was the finest ever made in the Society's rooms. Most prominent among these was a magnificent pyramidal plant of Azalea decora, nearly covered with its rich crimson flowers, from John L. Gardner. Mr. Gardner also filled a stand near by with delicate Heaths and large-flowered Pelargoniums. Edwin Sheppard contributed a finely flowered plant of Lælia purpurata, and James Cartwright one of Dendrobium densiflorum. J. W. Manning's collection of herbaceous plants was very interesting. Directly facing the spectator on entering the hall was the collection of three tender varieties, from the President of the Society, which took the 1st prize—Auguste Van Geert, Duchess of Connaught, and Lady Dorothy Neville—and we venture to say that three finer trusses were never seen. The first of these three kinds is, to our taste, the most beautiful of all the half-hardy Rhododendrons. Near these was a truss of Lady Grenville, which took the prize for the best single specimen of any tender variety. A table on the left of the centre was completely filled with fine specimens of Rhododendrons from H. H. Hunnewell, and one on the right with Rhododendrons, Azaleas, and Cacti from C. M. Hovey. Francis Parkman contributed a collection of seedling Azaleas, comprising some unique colours. The contribution from Jackson Dawson, of the Arnold Arboretum, included, besides Rhododendrons and Azaleas, a great variety of hardy flowering shrubs, among which were eight species of Roses. The vegetable table was filled with Asparagus, Rhubarb, Carrots, Cucumbers, &c.—all fine specimens.

Awards for plants and flowers: Hunnewell prizes for Rhododendrons and Azaleas.—For twenty-four tender varieties of Rhododendrons, six tender varieties, three tender varieties and a single truss of any tender variety, six hardy varieties and a single truss of any hardy variety, to Hon. Francis B. Hayes, President of the Society; for ten hardy varieties and three hardy varieties, to John L. Gardner; fifteen named varieties of hardy Azaleas, to E. Sheppard; for the best six named varieties, and the best cluster of trusses of one variety, to Benjamin G. Smith. Society's prizes.—For German Iris, E. Sheppard; 2d, J. W. Manning. Display of Clematis.—J. H. Woodford; 2d, E. Sheppard. Hardy flowering shrubs, twelve varieties.—Benjamin G. Smith. Display of cut flowers.—W. K. Wood; 2d, Mrs. E. M. Gill. Table design, other than a basket of flowers.—Mrs. E. M. Gill; 2d, Miss S. W. Story. Herbaceous plants.—J. W. Manning.

Gratuities.—To H. H. Hunnewell, for collections of Rhododendrons and Azaleas; Francis B. Hayes, for Rhododendrons and cut flowers; Francis Parkman, for seedling Azaleas; John B. Moore & Son, for Pæonies, hybrid perpetual Roses, and Gloxinias; Benjamin G. Smith, for Clematis and Pansies; E. Sheppard, for two Orchids; James Cartwright, for Orchid; Edwin Fewkes, for Roses and Aquilegias; John L. Gardner, for Pelargoniums and Ericas; J. W. Manning, for Pyrethrums; Jackson Dawson, for Azaleas, shrubs, &c.; C. M. Hovey and E.

Sheppard, for displays; and Miss S. W. Story, for cut flowers. A Silver Medal was awarded to John L. Gardner for a plant of Azalea decora.

Awards for Vegetables—Short scarlet Carrot and long scarlet Radishes.—Josiah Crosby. Four bunches of Asparagus of twelve stalks each—John B. Moore; 2d, L. W. Weston. Twelve stalks of Rhubarb.—C. H. Brackett; 2d, M. W. Chadbourne. Pair of Cucumbers.—E. W. Wood; 2d, Josiah Crosby. Four heads of Lettuce.—Josiah Crosby; 2d, Warren Heustis. Gratuities to C. H. Brackett, for Tomatos; Josiah Crosby, for Lettuce; Warren Heustis, for Onions; and Samuel Hartwell, for Asparagus. (*From a Correspondent.*)

Chislehurst and West Kent Horticultural.—Amidst the beautiful scenery which environs Camden House, the tents for the display of garden productions of competitors living in the locality were pitched. A breezier spot on a sultry June day could hardly have been selected, yet, though the heat in the tents was extreme, cut flowers and fruit suffering greatly by the afternoon, we noticed Roses that were in the morning but half opened buds, were in a few hours blooms apparently long since overblown. One large tent was set apart for displaying the stove and greenhouse plants. Fuchsias, Begonias, zonal Pelargoniums, Ferns, and groups of decorative plants, Messrs. Laing & Co., Forest Hill, making one end of the table gay with Begonias, Crotons, Dracænas, Caladiums, and Japan Maples, whilst the opposite extremity of the table was allotted to Mr. B. S. Williams, Upper Holloway, for a choice collection of small Orchids, Sarracenias, and Amaryllis—two handsome varieties of this last being Mrs. Lee and Marginata, Aralia Chabrieri, a pretty dark foliaged variety, with long much divided leaves; Croton Manglesi, Chirata asparagoides were likewise distinct novelties observed in the group. One tent was devoted to Coleuses, Begonias (with handsome foliage), Gloxinias, &c.; another to collections of fruit, vegetables, stands of cut blooms of Roses and of herbaceous plants; cottagers' productions finding a place also in this tent. In reference to the productions of these last-named, it may be stated that they were with a few exceptions remarkably meagre and unworthy of the county. Especially good were the Cabbages, Broad Beans, and Onions, whilst Potatos could scarcely be worse, even for the month of June.

Besides these tents there was one for the display of ladies' work, in the shape of bouquets and dinner-table decorations. These latter were in some abundance, and served as more or less tasteful illustrations of the newer ideas on these matters. Here, instead of epergnes or vases, bowls, &c., filled to overcrowding with the choicest flowers of the stove, greenhouse, or border, we found nothing but Himalayan and common English Poppies, Nasturtiums, grasses, Forget-me-Nots, Pansies, Chrysanthemum segetum, Dog Roses, Buttercups—all very lightly arranged and disposed—everybody's flowers, and costing nothing beyond time and taste.

Bees at work and specimens of honey were to be seen in another small tent; and a lecture on bees and their management was likewise wisely added to the attractions of the show.

In the class for six stove and greenhouse plants the 1st prize was awarded to Mr. A. Gibson, gr. to T. F. Burnaby Atkins, Esq., Halstead Place, for medium-sized plants of Alocasia Lowii, A. metallica, Anthurium crystallinum, Croton Youngi, Thrinax elegans, and Dracæna Baptisti, the Aroidaceous plants being of considerable merit; 2d, Mr. J. Kent, gr. to F. Heritage Esq., Ladywood, Orpington, whose Maranta zebrina, Geonoma grandis, and Davallia Mooreana were pretty specimens; 3d, Mr. J. Bolton, gr. to Mrs. Spottiswood, Combe Bank. Mr. Gibson was also the winner of the special 1st prize for the best six stove and greenhouse plants, his Statice profusa, Clerodendron Balfourianum, Dipladenia amabilis being particularly handsome plants.

In the class for six specimens of exotic Ferns, 1st, Mr. J. Bolton, Combe Bank, for good useful specimens of Davallia bullata, Adiantum cardiochlænum, Balantium culcitum, Cibotium Barometz, and Adiantum farleyense; 2d, Mr. Thomas Gearing, gr. to S. Williams, Esq., Black Brook, Bickley Park, in whose group were a very fine Adiantum gracillimum, and an Asplenium bulbiferum. Mr. J. Bolton was awarded the 1st prize for the best single specimen of an exotic Fern, the winning plant being a finely grown example of Adiantum cardiochlænum. In the competition for the best six exotic Lycopodiums, 1st, Mr. Neighbour, gr. to the Executors of the late G. Wythes, Esq., Bickley Park; 2d, Mr. G. Cooper, gr. to W. Yeatman, Esq., Shawfield, Bromley, the order being reversed in the competition for a single specimen of the same. Some few groups of Caladiums were observed, the sorts including some few of the later novelties. For the best Mr. Jeal, gr. to A. M. Tapp, Esq., The Gables, Shortlands; 2d, Mr. Blackburn, gr. to John Scott, Esq., Elmstead Grange, Chislehurst. For the best four Fuchsias, 1st, Mr. H. Cole, gr. to T. A. Mitchell, Elmstead Glade, Chislehurst, who showed capital examples of Mrs. Marshall, Little Harry, Prince Charming, and Magenta; 2d, Mr. J. Neighbour, whose plants were nicely grown, but wanted more time. A few zonal Pelargoniums were shown, the winner of the 1st prize being Mr. J. Neighbour. Achimenes were well done by most of the exhibitors, old kinds holding their own in all of the collections. For the best six pans of these plants, 1st, Mr. J. Stent, gr. to J. Scott, Esq., Abbeyfield, Bickley; 2d, Mr. C. Bridger, gr. to Captain Pavy, Fairfield, Bickley. Some effective groups of decorative plants, stove and greenhouse, were observed in the big tent, the 1st prize being awarded to Mr. J. Blackburn, Elmstead Grange, for a group consisting mainly of Odontoglossum vexillarium embedded in a thick line of Adiantum, the new varieties of Coleus, Caladiums, Gloxinias, Palms, Dracænas, &c.; Mr. A. Gibson was 2d, and Mr. J. Kent was 3d. There were some few good groups of flowering Begonias of varying merit, the 1st prize being awarded to Mr. J. Neighbour for plants compact and large, and nearly all of recent introduction; the 2d was awarded to Mr. Story, gr. to J. Scott, Esq., Bickley, for smaller plants of Vesuve, orange-scarlet; Coloni, Paul Masurel, all shades of the same colour; J. W. Ferrand being a beautiful rich crimson. The usual flat specimens of tricolor Pelargoniums were to be seen, but in lessening numbers, Mr. J. Neighbour taking the 1st prize for Lady Cullum, Mr. Laing, Sophia Dumaresque, and Charming Bride; and Mr. F. Maynard the 2d prize. Double-flowered Pelargoniums were shown by Mr. H. Cole, who was awarded the 1st prize. His Adelaide Blanchon, a pure white, very full, and pure in colour, seemed likely to be a useful sort as a flower for cutting.

In the open class for the best forty-eight varieties of Roses, in trusses of three each—1st, Messrs. Paul & Son, the Old Nurseries, Cheshunt, with a very fine stand of flowers of tolerably level merit, viz., Horace Vernet, Henri Ledechaux, Violette Bowyer, Madame Gabrielle Luizet, M. E. Verdier, M. Thérèse Levet, M. Alfred Dumesnil, Mdlle. Prosper Langier, Mons. Noman, Mons. E. Y. Teas, Maurice Bernardin, Jean Ducher, Captain Christy, Marguerite de St. Amand, Etienne Levet, Marie Cointet, A. K. Williams, Nardy Frères, Souvenir d'un Ami, Beauty of Waltham, Caroline Küster, Niphetos, Lady Mary Fitzwilliam, Prize of Waltham, Charles Darwin, Perle de Lyon, La France, Devoniense, and others. The 2d prize was awarded to Mr. B. R. Cant, Colchester, whose stand, but little behind the winner, contained fine blooms of Marquise de Castellane, Annie Laxton, Rubens, Marie Van Houtte, Madame Alfred Dumesnil, Etienne Levet, Dr. Andry, Marie Baumann, Mons. Noman, Madame C. Küster, Horace Vernet, Miss Hassard. In the class for twenty-four single blooms, distinct, the 1st prize was also taken by Messss. Paul & Son, amongst whose beautiful blooms were exquisite Lady Mary Fitzwilliam, Marie Finger, Ulrich Brenner, Horace Vernet, Comte Raimbaud, and A. K. Williams; 2d, Mr. Frank Cant, his Madame Hippolyte Jamain, Mons. Noman, Souvenir de Paul Néron, Countess of Rosebery, Maréchal Niel, Madame Willermoz, Catherine Mermet, and Souvenir d'Elise, being especially fine; 3d, Messrs. Bunyard & Co., Maidstone. For twelve single trusses, distinct, Mr. B. R. Cant, Colchester, was awarded the 1st prize, his best blooms being Anna Olivier, Exposition de Brie, Miss Hassard, François Michelon, Maréchal Niel, Mons. Noman, Duke of Edinburgh, Marie Baumann, Duchesse de Vallombrosa, and Madame Gabrielle Leuzet; 2d, G. Mount, St. Dunstan's Nursery, Canterbury, who had fine specimens of Caroline Küster, Maréchal Niel, Catherine Mermet, Capt. Christy, Anna Olivier; 3d, Mr. F. Cant. For the best box of any one kind of Rose, the 1st prize was awarded to Messrs. Paul & Son, the Old Nurseries, Cheshunt, for A. K. Williams; 2d, Mr. B. R. Cant, for Devoniensis; and 3d, Mr. Frank Cant, for Devoniensis—these sorts being shown in fine condition. For twenty-four cut blooms, single or in trusses, distinct, 1st, Mr. H. Blundell, gr. to George Christy, Esq., Buckhurst Lodge, the sorts Madame Prosper Langier, Mons. Noman, Mons. E. Y. Teas, Duke of Wellington, Duchesse de Vallombrosa, Marie Hardy, Henri Ledichaux, Chas. Lefebvre, La France, Jean Soupert, Marquis de Gibot, being admirable in form and condition but wanting the size observed in the nurserymen's classes; 2d, Mr. A. Gibson, Halstead Place, whose A. K. Williams, Alba rosea, Magna Charta, Anna Olivier, La France, were fair blooms; 3d, Mr. R. Lewis. For twelve cut Roses, single blooms or trusses.—In this competition the 1st prize was awarded to Rev. J. M. Fuller, the Vicarage, Bexley; 2d, Messrs. Ashurst & Tucker, Farningham; 3d, Mr. H. Cole, gr. to T. A. Mitchell, The Glade, Chislehurst. For six cut Roses, single blooms or trusses, 1st, Alexander Puller, Esq., Stoneycroft, Bromley, this stand containing fair blooms of Rosy Morn, Paul Jamain, Gloire de Dijon, Abel Carrière, La France, and Marie Baumann. The Rev. M. Fuller took likewise the premier prize for six cut blooms of Teas, with Comtesse Panisse, a rosy-cream; Anna Olivier, Catherine Mermet, Souvenir d'un Ami, Rubens, and Jules Finger.

Considerable quantities of cut flowers of herbaceous plants, Pinks, Sweet Williams, Pansies, and similar flowers, were exhibited, as were also wild flowers; and table decorations were exhibited in some profusion, the prizes for these being taken almost solely by the ladies.

Fruit was rather plentifully shown, Mr. J. Neighbour being 1st for Black Hamburgh, three bunches, perfect in colour and berry, and of large size of bunch; Mr. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, was awarded 2d for good fruit, but which had suffered in transit; 3d, Mr. A. F. Waite, gr. to S. Ordens, Esq., Woodlands, Beckenham, for large bunches of a poor colour. For white Grapes, 1st, Mr. Waterman, with Buckland Sweetwater; 2d, Mr. J. Bolton, for Foster's Seedling. The prizes for Melons were taken by Mr. J. Neighbour, 1st, with Golden Perfection, a very diminutive fruit; 2d, Mr. F. Maynard, with Victory of Bath. For six Nectarines Mr. G. Tucker, gr. to J. L. Lovibond, Esq., Stent's Hill, Farnborough, was placed 1st, for very finely coloured Elruge, Stanwick var.; 2d, Mr. J. Neighbour, with Elruge; 3d, Mr. W. Gammon, with Pitmaston Orange. For the best six Peaches, 1st, Mr. G. Tucker, with Royal George; 2d, Mr. W. Gammon, gr. to C. Boosey, Esq., The Pines, Bickley Park, with Albert Edward. For the best three dishes of Strawberries, 1st, Mr. J. Bolton; 2d, Mr. Waterman; 3d, Mr. J. Cooper.

The competition for the best collection of fruit, open to the market growers of West Kent, brought some examples of capital cultivation, the 1st prize being awarded to Mr. A. Waterman, his collection consisting of Stirling Castle Peach, Elruge Nectarine, Buckland Sweetwater and Black Hamburgh Grapes, Strawberry British Queen, Frogmore Early Cherry, and Queen Pine; 2d, Mr. J. Neighbour, who had well preserved Holbert's Victoria Apples, Black Hamburgh and Royal Muscadine Grapes; 3d, Mr. G. Tucker.

Collections of vegetables were shown by Mr. J. Neighbour, who was awarded the 1st prize; whilst Mr. Waterman was allotted the 2d prize—a decision that excited some astonishment amongst the *cognoscenti*, but both collections were good in every way; the Peas William I., Early Hammersmith Potatos, and Early London Cauliflowers in the winning one, and the Vick's Tomatos, Canadian Wonder Beans, and Nantes Carrots in the 2d lot, were very superior productions. Mr. H. Eke, gr. to S. B. Berington, Esq., The Elms, Bickley, showed capital Cucumbers of the variety Tender and True, for which he obtained the 1st prize; and the 2d was awarded for the same variety to Mr. J. Neighbour.

Bagshot and Windlesham Horticultural: *July* 1 *and* 2.—The fifteenth annual show of this Society was held conjointly with a poultry show and a rural *fête*, in Bagshot Park, by permission of His Royal Highness the Duke of Connaught, on Tuesday and Wednesday last. Several large tents were well filled with plants, fruits, cut flowers, including several tastefully arranged dinner tables, groups of vases, bouquets, Vegetables, &c. The most noteworthy feature in the way of foliage and flowering plants was contributed by Messrs. John Waterer & Son, American Nursery, Bagshot. It consisted of a grandly flowered batch of new Rhododendrons in pots, among which was one named Duchess of Connaught, having large well-shaped trusses of creamy-white flowers; Japanese Maples, and well-flowered plants of Lilium auratum, &c.; the whole being fringed with dwarf foliage and flowering plants. The weather being everything that the secretary of a flower show could desire, the exhibits were numerous, and for the most part of superior merit.

VEGETABLES.—The most noticeable of these were those (six lots) staged in competition for the prizes offered by Messrs. Sutton & Sons for twelve kinds, and by Messrs. Carter & Co. for their Peas and Broad Beans. The 1st prize in both these classes were awarded to Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury; the 2d in Messrs. Suttons' class went to Mr. J. Clark, Moor Park, Farnham, who also took the Society's 1st prize for a dish of French Beans, and 2d for fifty pods of Peas.

FRUIT.—Grapes, three bunches Black Hamburgh; 1st, G. Pollock, Esq.; 2d, H. P. Leschallas, Esq.; 3d, J. B. Ward, Esq. In the class for one bunch of Grapes, 1st, Mr. Pollock, with a well finished bunch of Black Hamburgh; Colonel Harris and J. B. Ward, Esq., being 2d and 3d. For one Melon G. Pollock, Esq., took 1st; and Thomas Sellar, Esq., and G Ricketts, Esq., 2d and 3d. For six Peaches H. P. Leschallas, Esq., A. Southard, Esq., and G. Pollock, Esq., obtained the prizes in the order named; and for a like number of Nectarines the prizes were awarded in the order specified—to A. Southard, Esq., G. Pollock, Esq., and J. H. Baxendale, Esq. Strawberries were well shown, and for groups of miscellaneous plants arranged for effect the chief honours went to H. P. Leschallas, Esq., and G. Pollock, Esq. These were two very tastefully arranged groups. In conclusion, we need only remark that the arrangement of cut flowers and grasses in vases, &c., showed great taste on the part of the lady competitors. (*From a Correspondent.*)

Scottish Horticultural Association. — The Association met on Tuesday, July 1, at 5, St. Andrew Square, Edinburgh, Mr. J. Methven, President, in the chair. Mr. M. Dunn, Dalkeith Palace Gardens, read a paper on "The Indigenous Trees of Great Britain." He spoke first of the Scotch Fir, alluding to its adaptability to various soils and climates, to its picturesque effect in landscape scenery, and to its being, all things considered, one of the most profitable for cultivation. The Oak, he thought, was not cultivated to the extent it deserved from a commercial point of view; and for the purposes of park adornment there was, in his opinion, no nobler tree. In the course of his further remarks he alluded to the picturesque appearance of the Mountain Ash in autumn, remarking that in that tree and the Scotch Fir the Highlands of Scotland had much to be proud of. Mr. Hutton, Royal Bank of Scotland, Arbroath, read a paper on "The Rose and its Relatives." Discussions followed the reading of this and the preceding paper, and both Mr. Dunn and Mr. Hutton received the thanks of the meeting for their communications. The Universities (Scotland) Bill, and particularly its proposals in regard to the Botanic Garden, was afterwards brought under the notice of the meeting by Mr. M. Todd, Edinburgh. As the result of some discussion, in which the opinion seemed to be pretty generally entertained that the proposed placing of the garden under the control of the University authorities would prove injurious to the interests of horticulture in Scotland, it was agreed to petition against that part of the measure. Exhibits were displayed on the table during the evening. Mr. Ware, of Tottenham, sent a collection of Lilies and other plants; and Mr. Chapman, Easter Duddingston Lodge, a fine collection of single Roses, and various species of Scotch Roses, single and double.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JULY 2, 1883.

MONTH AND DAY.	BAROMETER: Mean Reading Reduced to 32° Fahr.	BAROMETER: Departure from Average of 18 years.	TEMPERATURE OF THE AIR: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	WIND: Average Direction.	RAINFALL.
June	In.	In.	°	°	°	°	°	°			In.
26	29.96	+0.16	78.5	49.5	29.0	63.5	+ 2.3	50.3	62	N. : W. SW.	0.00
27	30.00	+0.18	82.0	54.5	27.5	66.7	+ 5.4	55.9	69	N. : N.W.	0.00
28	30.02	+0.20	79.0	54.0	25.0	66.0	+ 4.7	54.6	66	N.	0.00
29	29.83	+0.01	73.0	57.0	16.0	62.9	+ 1.6	56.7	80	E. : S.	0.11
30	29.95	+0.13	75.2	52.0	23.2	63.2	+ 2.0	51.4	65	W. : W. SW.	0.00
July 1	30.03	+0.21	77.5	55.0	22.5	65.4	+ 4.2	54.3	67	W. : W. SW.	0.00
2	29.95	+0.13	74.0	54.0	20.0	64.4	+ 3.3	53.6	68	E.	0.00
Mean	29.96	+0.15	77.0	53.7	23.3	64.6	+ 3.4	53.8	68	variable	0.11

June 26.—Very fine day and night.
— 27.—Very fine day and night.
— 28.—Very fine day and night.
— 29.—Dull day, rain from 9.30 A.M. to 10.30 A.M. Fine clear night.
— 30.—Very fine day and night.
July 1.—Fine bright day and night.
— 2.—Very fine day and night, few dark clouds passing occasionally.

LONDON: *Atmospheric Pressure.*—During the week ending June 28, the reading of the barometer at the level of the sea decreased from 30.18 inches at the beginning of the week to 29.94 inches by 3 P.M. on the 24th, increased to 30.19 inches by 9 A.M. on the 26th, decreased to 30.13 inches by 3 P.M. on the same day, increased to 30.17 inches by 9 A.M. and decreased to 30.14 inches by 3 P.M. on the 27th, increased to 30.25 inches by 9 A.M. on the 28th, and was 30.17 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.11 inches, being 0.10 inch lower than last week, and 0.11 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 82°, on the 27th; the highest on the 23d was 69°.5. The mean of the seven high day temperatures was 75°.3.

The lowest temperature was 49°.5, on the 26th; on the 25th the lowest temperature was 56°. The mean of the seven low night temperatures was 53°.3.

The greatest range of temperature in one day was 29°, on the 26th; the smallest was 14°.5, on the 23d. The mean of the seven daily ranges was 22°.

The mean temperatures were—on the 22d, 60°.6; on the 23d, 61°.1; on the 24th, 62°.3; on the 25th, 61°.6; on the 26th, 63°.5; on the 27th, 66°.7; and on the 28th, 66°; and these were all above their averages by 0°.2, 0°.4, 1°.4, 0°.5, 2°.3, 5°.4, and 4°.7 respectively.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 140°, on the 27th. The mean of the seven high day temperatures was 125°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass was 42°, on the 26th. The mean of the seven readings was 45°.5.

Rain.—Rain fell on three days to the amount of 0.06 inch.

ENGLAND: *Temperature.*—During the week ending June 28 the highest temperatures were 82°, at Blackheath, 81°.9 at Nottingham, 81°.2 at Liverpool; the highest at Truro and Plymouth was 75°, at Preston 76°.5. The general mean was 79°.1.

The lowest temperatures in the week were 41°, at Cambridge, 42°.5 at Wolverhampton, 43°.3 at Nottingham; the lowest at Plymouth and Preston was 51°, at Brighton and Liverpool 50°.5. The general mean was 46°.5.

The greatest ranges were 39°.4 at Cambridge, 38°.6 at Nottingham, 36°.2 at Bolton; the smallest ranges were 24°, at Plymouth, 25°.5 at Preston, and 27°, at Truro. The general mean was 32°.6.

The mean of the seven high day temperatures was highest at Blackheath, 75°.3, at Cambridge 75°, at Nottingham 74°.5; and was lowest at Bradford 67°.2, at Wolverhampton 68°.5, and at Liverpool 68°.6. The general mean was 71°.2.

The mean of the seven low night temperatures was highest at Plymouth, 55°.2, at Brighton 54°.3, at Liverpool 54°.1; and was lowest at Cambridge, 48°, at Wolverhampton 48°.2; and at Bolton and Hull 48°.7. The general mean was 51°.3.

The mean daily range was greatest at Cambridge, 27°, at Hull 25°.2, at Nottingham 25°; and was least at Liverpool, 14°.5, at Preston 16°.1, and at Bradford 16°.6. The general mean was 19°.9.

The mean temperature was highest at Blackheath, 63°.1, at Plymouth 62°.1, at Brighton 61°.4; and was lowest at Wolverhampton, 56°.6, at Bolton 56°.9, at Bradford 57°.1. The general mean was 59°.5.

Rain.—The largest fall was 0.96 inch, at Wolverhampton, 0.12 inch at Bristol, 0.11 inch at Cambridge; the smallest fall was 0.01 inch at Bradford, 0.02 inch at Leeds, 0.05 inch at Leicester. No rain fell at Plymouth. The general mean fall was 0.14 inch.

SCOTLAND: *Temperature.*—During the week ending June 28, the highest temperature was 83°, at Glasgow; at Greenock the highest was 72°. The general mean was 77°.1.

The lowest temperature in the week was 41°.5, at Glasgow; at Leith the lowest temperature was 48°.8. The general mean was 45°.9.

The mean temperature was highest at Paisley, 59°.2, and lowest at Aberdeen, 56°.7. The general mean was 58°.

Rain.—The largest fall was 0.53 inch, at Aberdeen; and the smallest fall was 0.03 inch, at Edinburgh. The general mean fall was 0.20 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to have to record the death, on June 23, of Mr. GEORGE TOLL, of Hullard Hall Nursery, Manchester, aged forty-nine years—an announcement that will be a sad surprise to many who saw him so lately as at the Whit-week show at Old Trafford. Mr. Toll was a native of Dunsford, near Exeter, Devonshire, and as a lad worked in the nurseries of the Messrs. J. Veitch & Sons. Afterwards he entered the service of Messrs. Lucombe, Pince & Co., with whom he stayed a few years. He then went as foreman in a private place in South Wales, where, however, he did not stay long, but found his way back to Messrs. Lucombe, Pince & Co.'s nursery. When the Art Treasures Exhibition was opened in Old Trafford in the spring of 1857 he was sent from Exeter with a large collection of Orchids, his employers considering him fully competent twenty-seven years ago to take charge of and stage for them—a collection of plants that in those days was considered almost unique. How well he acquitted himself, and how successfully he fulfilled his mission, may be gathered from the fact that Mr. W. Turner, of Barr Hill, Pendleton, was so charmed with the plants, and so much pleased with the man, that he forthwith purchased the majority of the former, and under no circumstances would he allow them to be separated from the latter. Plants and man were then duly installed at Barr Hill. After a time, however, as the collection increased, the whole were removed to Pendlebury House, where they came under the supervision of the late J. A. Turner, Esq., M.P. Here master and man were enthusiastic in their attachment to their plants, and as any new Orchid appeared anywhere it was eagerly secured and placed among the already choice and rare subjects in the houses. The writer has often heard Mr. Toll tell how when he had purchased the first flowering plant he saw of Calanthe Veitchii and placed it amongst his plants in the evening he had watched the following morning when his employer walked through the houses to see with what delight and pleasure the master saw the veritable gem that had been secured. Again when a rival appeared in the exhibition tent it became a serious matter to decide how the position secured by Mr. Toll should be maintained, and how heartily he used to tell the story of his being despatched on one occasion to Exeter to pick out some plants that might be of service the following season. As soon as he reached the nursery of Messrs. Lucombe, Pince & Co. he was informed that his rival had only just left, and had taken the sizes and descriptions of a number of choice specimens. Here was just the opportunity—nothing had been purchased, so "little George," as he was familiarly called, went round and at once secured all he required, and soon they were despatched to Pendlebury House. This collection now became invincible, but in 1867 another Turner was spoken of, and the collection from Leicester was to be pitted against Manchester. June 7 came, and the show opened, but the Leicester group was only able to secure 2d honours. The Pendlebury group of twenty plants were objects of high culture, and were deservedly placed 1st. In June of the following year the collection was disposed of, Messrs. Stevens, of King Street, Covent Garden, coming down to sell them. Many high prices were given for the plants, for some choice pieces of Saccolabium, Vanda, Aërides, Cattleya, and Lælia were amongst them. Soon after the plants were parted with Mr. Toll secured the business at Hullard Hall, and for the last sixteen years he has been known as one of the more prominent nurserymen in the neighbourhood of Manchester. At the present time the houses are stocked with Orchids, and a keen eye may here find many varieties that are not usually to be met with, for it was always the practice of Mr. Toll to secure the rare and choice varieties, knowing well that in these days it is not enough to hold the type of any species, but that superior varieties are those mostly sought after, and those that command the best prices. How well Mr. Toll grew Anæctochili twenty years ago may be gathered from Mr. B. S. Williams' *Orchid Growers' Manual*, where he says, "The best collection I ever saw was grown at Pendlebury House by Mr. G. Toll." Now that he has gone the mind instinctively runs back, and the memory calls up Mr. A. Beesley, Mr. T. Hubberstey, Mr. W. Milford, and Mr. J. Brooke, all intimately connected with Orchid culture, and all of whom have passed away in middle life. Now we have to mourn the loss of one who long retained a foremost place in the ranks and affectionate regard of Orchid growers. *S.*

Answers to Correspondents.

AMATEUR: *Palgrave, Diss.* A nurseryman is one who grows and buys and sells plants, as a means of obtaining his livelihood. An amateur grows flowers, fruits, and vegetables for his own pleasure or consumption, as the case may be, but who does not buy or sell as a matter of business.

BOOKS: *A. D. W.* All well known works, and of no particular value, that is to say, they do not realise fancy prices.—*G. Pim.* Messrs. John Menzies & Co., Edinburgh or Glasgow.

CUTTING STRIKING IN MOSS: *W. Tyers.* We do not know if Carnations can be struck in this way. Why not try the plan yourself?

DO HUMBLE BEES STING? *Leirion.* Yes; all the aculeate Hymenoptera—bees, wasps, and ants—sting. The needle-like tube through which the eggs are ejected is in this group of insects attached to a bag containing a poisonous fluid. But generally, if you do unto others as you would like them to do to you—*i.e.*, not molest them—they will let you alone.

EUCHARIS AND LILIUM: *H. J.* You would certainly not be justified in showing six pots of Eucharis in a class for "six pots of Lilium."

INSECTS: *D. McL.* The moth sent is the common Oak Egger (Lasiocampa Roboris). *W.—T. W., Aigburth.* The handsome bronzed beetle, an inch long, found in the Orchid-house is a common Brazilian one, which has doubtless been imported in the pupa state, in the earth of your plants. It belongs to the family Helopidæ and to the genus Camaria, and is not known as injurious to Orchids. *W.*

IXORA WILLIAMSII: *T. Johnson.* We cannot tell from the information you afford us the precise reason for the blooms falling off at that particular stage of growth. They are perfect in their parts, and simply refuse to grow. Is the bottom-heat more than 85°? and is it kept steadily at one point? Are the plants dry near the centre of the ball, whilst the surfaces appear moist?

MARATTIA ELEGANS: *Exhibitor.* Certainly. We know of no reason to the contrary.

NAMES OF PLANTS: *R. S. Newall.* Anagallis tenella. —*H. Britten.* Ceanothus azureus.—*G. W. B.* 1, Astrantia major; 2, Lactuca Plumieri.—*Enquirer.* 1, Cratægus nigra, so far as we can tell without the fruit: is the tree spineless or spiney? 2, Pyrus pinnatifida.—*D. D.* 1, Agrimonia Eupatorium; 2, Teucrium scorodonia; 3, Hypericum pulchrum; 4, Rumex obtusifolius; 5, Anagallis arvensis; 6, Urtica dioica.

NAPOLEON PEAR: *J. Scott.* We cannot tell you why your Napoleon Pear produces two crops of flowers every year, but we know that this variety frequently does the same thing in other places, and that it usually flowers at the ends of the shoots instead of on the spurs, as has been frequently commented on in these columns.

ORCHIDS: *A. Johnson.* The Cattleya Mossiæ is a very ordinary variety. We do not recognise the Odontoglossum—a poor thing.—*T. Spencer.* A nice form of Cattleya Mossiæ.

POT-POURRI: *W. M. Broomford.* This, according to Mr. G. W. S. Piesse, in his *Art of Perfumery*, is made with the following ingredients:—Dried Lavender, 1 lb.; whole Rose leaves, 1 lb.; crushed Orris (coarse), ½ lb.; broken Cloves, Cinnamon, and Allspice, of each 2 oz.; table-salt, 1 lb.; the salt being used to increase the weight and bulk of the product, to sell it cheaply. The mixture is made of dried flowers, and the spices *not* ground.

SIKKIM RHODODENDRONS: *An Old Reader.* The Sikkim Rhododendrons are all natives of the Sikkim Himalayas, in North-eastern India, and are nearly all

hardy, or nearly so, in the south-western counties of England and Ireland.

STRAWBERRY CULTURE: *A. Barker.* Very successful practice, but nothing particularly unusual.

VINES: *T. B.* We have been unable to ascertain by what means the plants have been injured, but the case certainly seems very suspicious. We can find neither insect nor fungi, and suspect that some chemical has been used.

COMMUNICATIONS RECEIVED:—T. S. W.—R. P. P.—G. P.—J Hammond.—T. N.—W. E. G.—J. S.—B.—W.—J B.—M. Correvon, Geneva.—K.—F. M., Glasnevin (best thanks).—E. S. D.—E. D.—T. Hill.—S. A.—F. A. B.—G. W.—C. H.—C. J. G.—D. C. P.

Markets.

COVENT GARDEN, July 3.

STRAWBERRIES are now in full swing; heavy supplies, with prices at their lowest. Cherries also in fair quantities, and looking well. Business less active. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ..	3 0–	5 0	Lemons, per case..	10 0–	14 0
Cherries, ½-sieve ..	7 0–	12 0	Pine-apples Eng., lb.	2 0–	3 0
Currants, black, per ½ sieve ..	5 6–	6 6	— St. Michael's, each	2 0–	5 0
Figs, per dozen ..	4 0–	8 0	Strawberries, per lb.	0 4–	1 0
Grapes, per lb. ..	2 0–	5 0	Peaches, per doz. ..	2 0–	12 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz. ..	.. 3 0–	5 0	Herbs, per bunch ..	0 2–	0 4
Asparagus, English, per 100 ..	.. 4 0–	6 0	Horse Radish, bund.	3 0–	4 0
— French, bund. ..	2 0–	..	Lettuces, Cabbage, per dozen ..	.. 1 6–	..
Beans, French, p. 100	1 6–	..	— Cos, each ..	0 2–	..
Beet, per doz. ..	1 0–	..	Mint, green, bunch..	0 6–	..
Cabbages, per doz..	1 0–	..	Mushrooms, p. baskt.	1 0–	2 0
Carrots, per bun. ..	0 4–	..	Onions, per bushel..	6 0–	..
— New French, per bunch ..	.. 1 3–	..	— Spring, per bun.	0 6–	..
Cauliflowers, English, dozen..	.. 2 0–	3 0	Parsley, per bunch..	0 6–	..
Celery, per bundle..	1 6–	2 6	Peas, English, quart	1 6–	..
Cucumbers, each ..	0 6–	1 0	Radishes, per doz. ..	1 6–	..
Endive, French, per dozen ..	.. 2 0–	..	Rhubarb, per bund.	0 4–	0 6
Garlic, per lb. ..	0 6–	..	Small salading, per punnet ..	.. 0 4–	..
			Spinach, per bushel	2 6–	..
			Tomatos, per lb. ..	1 6–	..
			Turnips, new, bun...	1 3–	..

POTATOS.—Old Potatos finished. New—Jersey kidneys, 7*s.* per cwt.; round, 6*s.* Cherbourg, round, 6*s.*; kidneys, 7*s.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	12 0–	24 0	Fuchsias, per doz. ..	4 0–	12 0
Arbor-vitæ (golden), per dozen ..	.. 6 0–	18 0	Heliotrope, doz. ..	4 0–	9 0
— (common), dozen	6 0–	12 0	Hydrangea, per doz.	9 0–	18 0
Begonias, per doz. ..	6 0–	12 0	Lilium longiflorum, per dozen..	..30 0	48 0
Calceolarias, per doz.	6 0–	12 0	Marguerite Daisy, per dozen ..	.. 8 0–	18 0
Cyperus, per dozen	4 0–	12 0	Mignonette, per doz	4 0–	6 0
Dracæna term. doz...	30 0–	60 0	Myrtles, per doz. ..	6 0–	12 0
— viridis, per doz..	12 0–	24 0	Palms in var., each	2 6–	21 0
Erica, various, doz.	12 0–	48 0	Pelargoniums (show) per dozen ..	.. 6 0–	18 0
Euonymus, various, per dozen ..	.. 9 0–	18 0	— scarlet, per doz..	4 0	12 0
Evergreens, in var., per doze ..	.. 6 0–	24 0	Petunias, per dozen	6 0–	12 0
Ferns, in var., dozen	4 0–	18 0	Rhodanthes, p. dozen	6 0–	9 0
Ficus elastica, each	1 6–	7 0	Roses, each ..	.. 2 0–	3 0
Foliage Plants, various, each ..	.. 2 0–	10 0	Spiræa, per dozen ..	8 0–	12 0
			Spiræa palmata, doz.	18 0	30 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0–	4 0	Mignonette, 12 bun.	3 0–	6 0
Arum Lilies, 12 blms.	3 0–	6 0	Nemophila, 12 bun.	1 0–	1 6
Bouvardias, per bun.	0 9–	1 0	Pelargoniums, per 12 sprays ..	.. 0 6–	1 0
Calceolaria, 12 sprays	1 0–	1 6	— zonal, 12 sprays	0 4–	0 9
Carnations, 12 bun.	2 0–	6 0	Pinks, various, 12 bun.	2 0–	6 0
Cornflower, 12 bun..	2 0–	4 0	Primula, double, bun.	1 0–	1 6
Eschscholtzia, 12 bun.	2 0–	4 0	Pyrethrum, 12 bun.	2 0–	6 0
Eucharis, per doz. ..	4 0–	8 0	Rhodanthes, 12 bun.	6 0–	12 0
Forget-me-not, 12 bunches ..	.. 2 0–	6 0	Roses (indoor), doz.	1 0–	4 0
Gardenias, 12 blms..	3 0–	6 0	— (outdoor), 12 bun.	3 0–	9 0
Gladiolus, various, 12 bunches ..	2 0–	9 0	— coloured, doz. ..	2 0–	6 0
Heliotropes, 12 sp. ..	0 6–	1 0	Stephanotis, 12 spr.	2 6–	4 0
Iris, various, 12 bun.	3 0–	12 0	Stocks, 12 bunches ..	3 0–	6 0
Lapageria, white, 12 blooms ..	.. 3 0–	6 0	Sweet Peas, 12 bun.	2 0–	6 0
— red, 12 blooms..	1 0–	3 0	Sweet Sultan, 12 bun.	4 0–	6 0
Marguerites, 12 bun.	3 0–	6 0	Tropæolum, 12 bun.	1 6–	3 0
			Tuberoses, per doz..	0 6–	1 6
			White Jasmine, bun.	0 6–	1 0

SEEDS.

LONDON: *July* 2.—The seed market continues of quite a holiday character, business being nominal. Rain is still much needed for the crops. Full prices are made for Rape seed, and good lots are sought after. In Trifolium incarnatum there is a little more doing; the samples of new French seed now offering exhibit fine quality. Hemp seed continues exceedingly scarce and dear. Blue boiling Peas and Haricot Beans sell at last week's quotations. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

The following are the latest prices to hand:—Magnum Bonums, 80*s.* to 90*s.*; new—St. Malo, 6*s.*; kidneys, 9*s.* 6*d.* to 10*s.*; Jerseys, 9*s.* to 10*s.*; and Cherbourgs, 6*s.* 6*d.* per cwt.

THE HORTICULTURAL SUPPLY ASSOCIATION is the cheapest and best House in the Trade for really good LIGHT FIBROUS PEAT. Having purchased 2000 tons of the very best quality, the Association is prepared to make special offers to the Trade, for quantities by the Yard or Ton in truckloads. Terms on application. In sample bags, 4*s.* 6*d.* per bag. Very best, selected for Orchids, 6*s.* per bag; twenty bags for 5*s.* per bag. BLACK FIBROUS PEAT, 4*s.* per bag; five bags for 17*s.* 6*d.*
Also the best and cheapest house for LOAM, SAND (coarse and fine), LEAF MOULD, COCOA FIBRE, MATS, RAFFIA, CORK, GUANO (Real Peruvian), STICKS, LABELS, BOUQUET WIRE, and every GARDEN REQUISITE.
FIBRE, 3*d.* per bushel; per truck of 2 tons, 35*s.* The best coarse SILVER SAND, 1*s.* 6*d.* per bushel; 12*s.* 6*d.* per ½ ton; 22*s.* per ton.
BEST YELLOW BETCHWORTH LOAM, 1*s.* per bushel.
LEAF MOULD, 1*s.* 6*d.* per bushel.
PEAT MOULD, 1*s.* per bushel.
COMPOST for Potting or for Garden, 1*s.* per bushel.
SPHAGNUM MOSS, 7*s.* 6*d.* per bag.
Our speciality TOBACCO CLOTH and PAPER.
Universal MANURE. The best yet offered—a very powerful Fertiliser, 13*s.* per cwt.
PERUVIAN GUANO, as imported, 18*s.* per cwt.; 56 lb., 11*s.*; 7 lb., 2*s.* 6*d.* All bags 4*d.* each.
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This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

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This is the Manure now used by the leading Nurserymen and Rose Growers. **Price, 12s. per cwt.,** carriage paid for Cash. In Sealed Bags, thoroughly air-tight. Also in 1*s.* Tins; per Parcels Post, 1*s.* 6*d.* It will keep for any length of time, and is the best Manure for all purposes in the Flower, Fruit, or Kitchen Garden. References, Directions for Use, &c., on application to
W. H. Beeson, Carbrook Bone Mills, Sheffield.

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Convenient, Inexpensive, Easily applied. Lasts all the Summer, and can then be easily washed off. 1*s.*, post 1/3.

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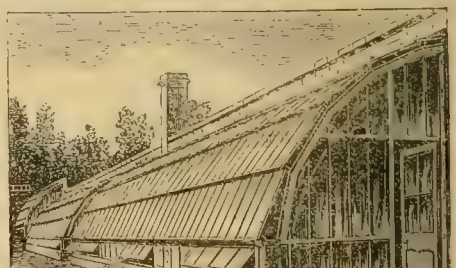
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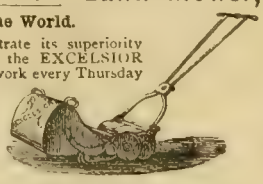
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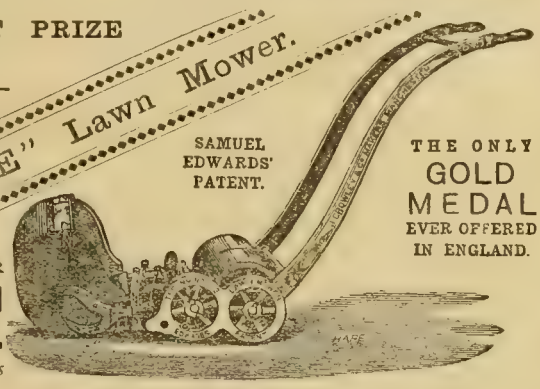
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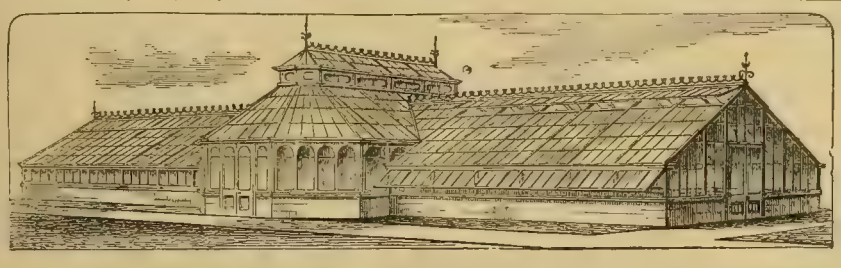
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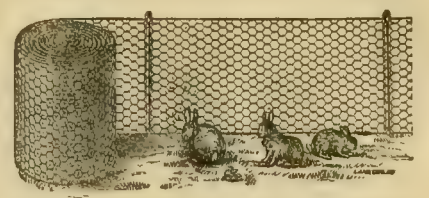
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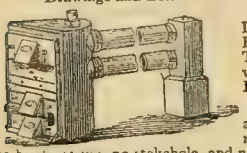
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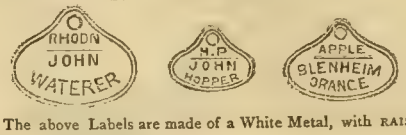
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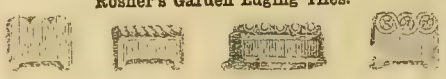
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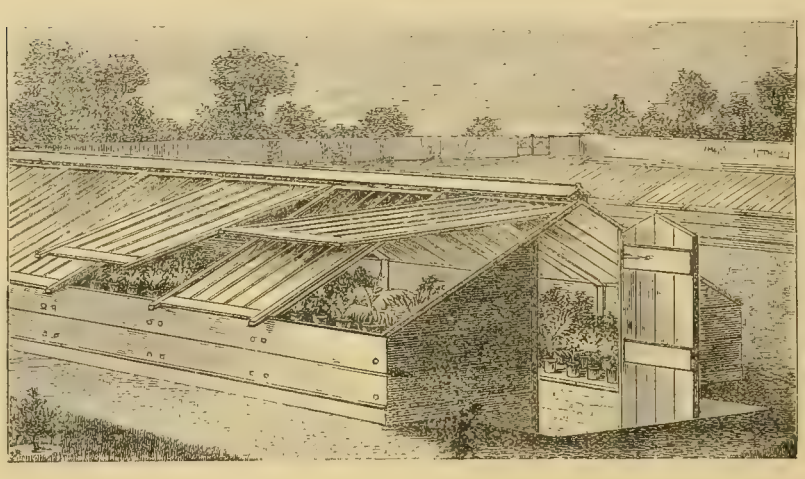
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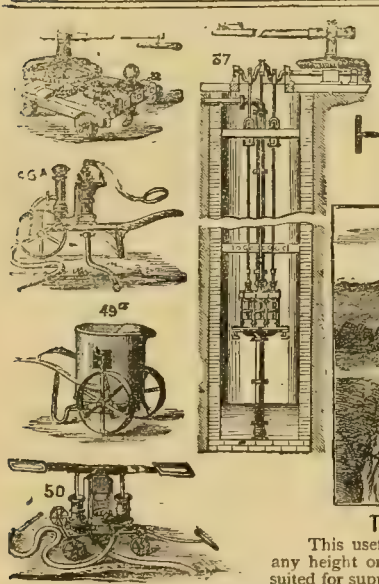
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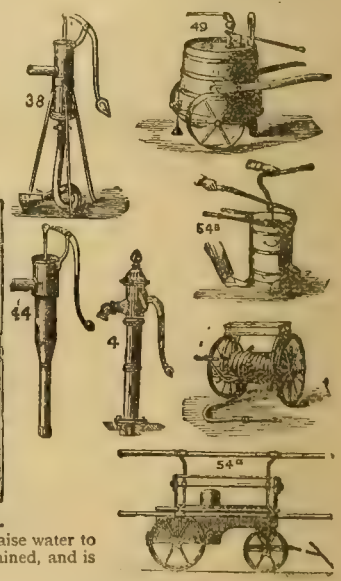
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, July 5, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 550.—Vol. XXII. {New Series.} SATURDAY, JULY 12, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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THE GARDENERS' CHRONICLE,

Volume XXI., JANUARY to JUNE, 1884.

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On view morning of Sale, and Catalogues had.

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Wednesday Next.—(Sale No. 6691.)
Importations received direct from Santa Catharina, Brazil.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 16, at half-past 12 o'Clock precisely, 200 grand plants of LÆLIA PURPURATA in four varieties. 150 CATTLEYA SPECIES, 12 ONCIDIUM SPECIES, 18 MILTONIA REGNELLI, 25 CATTLEYA GUTTATA (grand plants). 25 CYRTOPODIUM SPECIES, 20 ONCIDIUM PRÆTEXTUM, 8 Plants of an extremely sweet-scented MILTONIA, about 30 GONGORAS, 50 ONCIDIUM BIFOLIUM, 25 ZYGOPETALUM GAUTIERI, and a quantity of other ORCHIDS just received direct from Santa Catharina, Brazil.

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MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, July 16, at half-past 12 o'Clock precisely, three cases of ORCHIDS, just received from the Avila Mountains, Caracas, containing a quantity of Cattleyas in fine masses; also two cases of ORCHIDS from India, 5000 South African TUBEROSES, a few TREE and other FERNS, AMARYLLIS, ORCHID BASKETS, &c.

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"Out of the packet of Cyclamen seeds (thirty in number) you sent me last year I have raised twenty-five healthy young plants."
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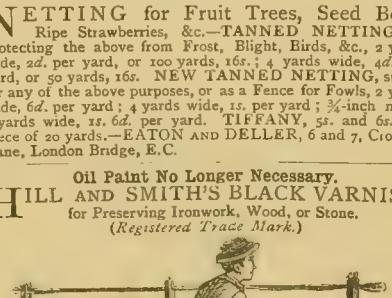
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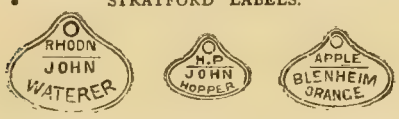
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IMPROVED VINE ROD FASTENER.

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The old system of tying completely done away with. Great economy of labour and time. Will bear the weight of the heaviest crop of Grapes grown under glass. Can be fixed during the growth of the Vine. Sold in Boxes, containing 6 dozen each, price 6*s*. 6*d*. Orders received by
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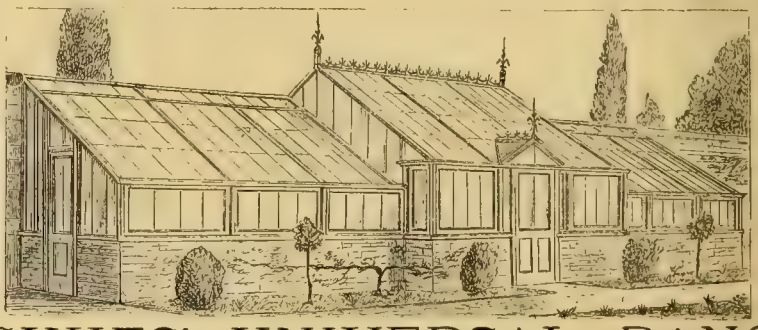
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CATTLEYA (LÆLIA) VELUTINA.

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THE CHEAPEST RANGE MANUFACTURED.
May be composed of 2 Vineries and a Plant House; or Peach House, Vinery, and Stove; or Melon House, Vinery, and Greenhouse; or Stove, Greenhouse, and Vinery; or as various other combinations. Detailed Prices and particulars post-free from

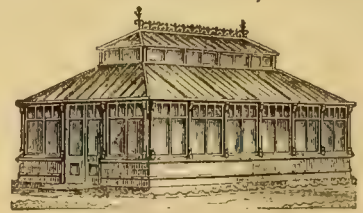
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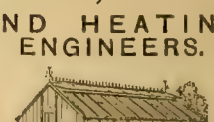
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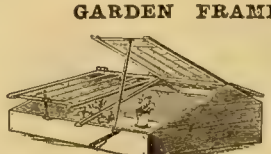


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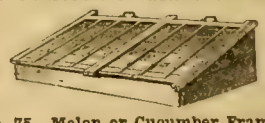


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THE
Gardeners' Chronicle.
SATURDAY, JULY 12, 1884.

NOTES FROM CHISWICK.

A LOOK in at Chiswick Gardens after the tremendous washing rainfall of Sunday last showed everything looking exceedingly refreshed, though in many cases much bespattered with soil, the which some gentle showers would do much to cleanse off. That every portion of the grounds was so neat and well kept, especially under the disadvantages of the demand upon labour in watering for so long a period, speaks well for the industry of Mr. Barron's staff, which, by-the-bye, for the amount of work to be done, is none too large. It was an interesting sight looking into the huge lofty vinery to see nine young men seated or standing in the most uncomfortable of positions on the high arch iron ladder which travels to-and-fro the entire length of the building, busily engaged thinning Grapes. Work of this kind day after day in excessive heat, and for some fourteen hours per day, requires patience and endurance, especially as the position in which the body is placed is very provocative of exhaustion. A picture of the great vinery at any time will not, in our minds, be complete unless it includes the incident of these men busily engaged in the arduous labour of manipulating the thousands of bunches with which the vast expanse of roof and Vine is studded.

We were pleased to note that the Begonias this year bid fair to make a grand display. Not only are the kinds grown at Chiswick eminently decorative, but the plants are large, almost luxuriant of growth, and full of promise. Very many of the kinds grown are Chiswick-raised seedlings, and thus have in the gardens special local interest. Certainly the ease with which such beautiful new kinds can be raised seems to demonstrate freely enough that a packet of seed will reproduce almost the best of named varieties. A large lean-to house now filled with strong Tomato plants in pots will presently have special interest, for these fruits, when the plants are well grown, are not only decoratively striking, but are valuable for their usefulness. Already one kind, a selection or seedling sport in the gardens from Trophy, and named Chiswick Red, is carrying an abundance of ripe fruit. The plants, indeed, are literally laden with the clusters. The fruits are of Acme shape—that is to say, are Plum shaped, and of a rich red hue. The kind seems to be not only very early, but wondrously prolific. Away in the eastern portions of the gardens there is now being carried out a large trial of Cauliflowers and Broccolis. Of the former the names are legion, let us hope that eventually the kinds may be counted on the fingers. The earliest kinds have suffered from the heat and drought, and will hardly give satisfactory results, but the late or autumn flowering kinds will evidently do well. Certainly the recent downfall of water has come in good time for the plants.

Near these is also a trial of Lettuces, chiefly of Cabbage kinds, inclusive of many of the fringed or curled sorts. These, however, seem less favoured with us than are the smooth

leaved, solid hearting forms, probably because our tastes in salads differ so much from those of our Continental neighbours. The Lettuces need a week or two longer to enable them to exhibit their respective qualities in full maturity. Peas have not proved satisfactory this year, and in scarcely any case will exhibit true form. Chiswick has now become so surrounded with tall houses, trees, and walls, that in hot weather the air of the gardens becomes, as it were, superheated; whilst the soil, though excellent in quality, is very porous and close upon gravel, hence garden products often suffer here in an unusual degree in dry seasons. Peas always show the effects of great heat and drought quickly, hence the crop of pods this year is not so good as usual. On the other hand, Potatos, always one of the most important of trial vegetables in the gardens, look for the season remarkably well, and probably will give fairly satisfactory results. There are in one spot a large number of new kinds with some old ones for the delectation of the Fruit Committee, but we regret to notice so many kinds simply called seedlings and unnamed. Surely the raisers can help the committee by selecting the very best of their sorts and naming them rather than leave the committee to perform for them their invidious task.

In another piece of ground a less number of new kinds are being grown for the Seedling Committee of the International Potato Exhibition, and judging by the appearance of some of the earlier sorts it is nearly time they were overhauled. Close by these are the rows planted for the Scientific Committee: the kinds are Recorder, which is rather early, and has a short spreading top; and Adirondack, late, tall, and, as a rule, rather indisposed to disease. Portions of these rows are already protectively earthed, and other portions remain as planted, whilst others are earthed on the customary plan. Certain rows, too, are from cut sets and others from the uncut sets, the advantage evidently being in favour of the latter, though by no means so much so as a week or two ago.

New Garden Plants.

EPIDENDRUM CHRISTYANUM, *n. sp.**

IF you saw nothing but thegreeenish and brown flowers (not the racemose erect inflorescence), you might think they belonged to Epidendrum glaucum, Lindl. This new species has, however, long pyriform diphyllous pseudobulb, and an erect racemose inflorescence of flowers surpassing those of Epidendrum glaucum. It is a great botanical curiosity, imported from Bolivia by Mr. T. Christy, F.L.S., to whom it is dedicated as an acknowledgment of his endeavours to enrich our knowledge of plants. *H. G. Rchb. f.*

MASDEVALLIA GAIRIANA, *n. hyb. art.* (VEITCHIANA × DAVISII).

A new Veitchian surprise, no doubt of Sedenian origin. The foliage is intermediate in habit between that of the two parents. The longest leaf is 4 inches long by ¾ inch wide, and is not so upright as in Masdevallia Davisii, but more drooping in the way of Masdevallia Veitchiana.

The flower is highly curious; the free part of the odd sepal as in M. Veitchiana, the lateral sepals are very shortly acuminate as in M. Davisii, but not so abruptly pointed. Ground colour reddish-orange, but the odd sepal, excluding the narrow tail, is wholly covered with mauve warts, such warts are, not crowded, to be seen on the outer basilar margin of the lateral sepals. There is a reddish eye-spot on each side of the base of the tube as in M. Davisii, and there are now and then a few short reddish dark lines there in M. Veitchiana. The outside colours are much less brilliant, reddish-orange, upper sepal darker. Petals as in M. Davisii, lip as in M. Davisii, pandurate, blunt. Column as in M. Veitchiana.

Messrs. Veitch wished it named in honour of Mr. John Gair, The Kilns, Falkirk, an enthusiastic Orchid grower, famous for his grand Bolleas and Pescatoreas, who from very large experience understands very well to make Masdevallias popular. *H. G. Rchb. f.*

HOULLETIA ODORATISSIMA (*Lindl.*) XANTHINA, *n. var.*

A fine Orchid, with a raceme of flowers equalling those of Houlletia Brocklehurstiana, but fine orange-yellow. Lip sulphur and white, with falcate horns, a stipitate clavate callus, foveate at the top, and an anterior triangular process growing out in a round wart, incumbent on the epichile, which is a little broader than that of the original H. odoratissima. A multitude of specimens at hand teach me the variability of that organ. The lip is not in a very good state. I guess it is white with basilar sulphur-coloured shanks. The sepals and petals remind me of those of Acineta densa, Lindl. Both peduncle and stalked ovaries are of a remarkably gay green (nearly so-called Schweinfurth green). I had a fine inflorescence from Baron Hruby, Peckau, Kolin, Bohemia, grown by Herr Skopec. It had originally been sent by Mr. F. Sander. *H. G. Rchb. f.*

LIPARIS DECURSIVA, *n. sp.**

A thick bulbed species, with remarkably decurrent base of leaf on bulb, not in a winged, but yet in a distinctly marked blunt line. Leaves cuneate oblong, probably acute. Peduncle with narrow wings and a lax raceme, with ten flowers in the specimen at hand. Bracts lanceolate acuminate, surpassing the stalked ovaries with winged ribs. Sepals lanceolate. Tepals linear. Lip with a channelled short unguis and a great hastate transverse blade, emarginate, with a small apiculus inf ront, denticulate excepting at the posterior side. On the nail is a tumour emarginate in front. Column curved, with a small angle at each side of the fovea. Flowers green, much darker on each side of the whitish mid-line of lip. I had this from my excellent correspondent, Curator Moore, Glasnevin Botanic Garden, who states its East Indian origin. *H. G. Rchb. f.*

ECONOMIC APPLICATIONS OF SEAWEED.

SEAWEED AS FOOD.—In this country little advance has been made in the use of the Algæ as food. The Algæ generally contain important nitrogenous constituents, and form nutritious articles of diet, but they have not been popular. We are equally guilty, however, in rejecting the majority of the fungi, so largely consumed as an important article of food on the Continent. The Algæ are closely allied to these, but have the advantage of containing, as far as is known, no poisonous species. The Algæ also contain a large proportion of salts, which, however, are easily removed if desirable.

Ulva latissima, or green laver, and Porphyra laciniata, or pink laver, are occasionally used in soups. Rhodomenia palmata, or dulse, is still sold in the streets of Edinburgh and Glasgow. Alaria esculenta, or murlins, is also eaten in Ireland; some others are occasionally used, but, as a general food, the Algæ are almost unknown. The sweetest species is the Laminaria saccharina, which is usually covered, when dry, with an efflorescence of mannite; a large quantity of this plant yielded me 7.47 per cent. of mannite. It appears to be a product of fermentation, and does not exist in the fresh plant. This plant is found only on sandy or gravelly shores.

The best known British species of the edible Algæ is the Chondrus crispus, or Irish Moss. This grows far down on the rocks, and is only uncovered at low spring tides. It is obtained mostly from the west coast of Ireland, and after being bleached by exposure to sun and rain is largely exported to this country and to Germany. It is a gelatinous species, containing a principle known as carragheenin; it yielded me 63.7 per cent. of this substance.

The only other gelatinous British species is the Gelidium corneum; this is not very common, but it furnishes the import known as Japanese isinglass, of which it contains 50 per cent. This substance, known also as gelose, was first imported into France from China in 1856; it has great gelatinising power, much higher than any other material. It is not nitrogenous. Gelose has eight times the gelatinising power of isinglass and gelatine; but the melting-point of the jelly is too high to melt quickly in the mouth, hence gelatine is still the favourite.

The carragheeenin has evidently become altered by evaporation. Gelose jelly keeps well, the others soon get mouldy. Although not fit for jelly, gelose may be valuable in the arts as a substitute for gelatine, which it so much exceeds in gelatinising power. I would specially suggest its use as a substitute for gelatine in the production of instantaneous photographs.

The Euchemia spinosa, or agar-agar, is an Australian Alga, and another important gelatinous species. The Algæ form a large article of food consumption in China and Japan. Some years ago I procured some of these samples; one was a dark green frond, and the other two were cut up from it, about the size of vermicelli.

The taste for marine vegetables must be acquired, but those who have eaten them often are said to become very fond of them; and I have known some gentlemen in the Highlands, no mean judges of diet, who consider a dish of dulse, boiled in milk, the best of all vegetables. There is no doubt that a valuable food is lost in entirely neglecting the Algæ; but I shall show presently how much of this may be recovered in an available form.

SEAWEED AS MANURE. — This appears to me to be one of the worst applications of seawed. Farmers are beginning to find out that it seldom contains less than 80 per cent. of water, often more, and that for the actual manurial value in it it may be very expensive if a long cartage is required. Four tons of water, at least, must be carted for every ton of dry manure, and when dried there is much additional expense, and it is very bulky. The dry weed contains an average of 2 per cent. of nitrogen, so that, as it is used, it contains less than half per cent. The chemical value is very little, except from the potash contained; but the mechanical value may be greater, as in covering root crops as a protection from frost, or where the soil is simply sand, and it binds it together. However, the cartage of water, and the manufacture of soil, are expensive amusements, and seaweed is not much used where there is high farming. It appears also, where continually used alone, to impoverish the soil; it is like feeding a dog on butter. The residue of seaweed ash, or kelp waste—1 ton of which is equal to 40 tons of wet seaweed, and contains all the phosphates—is quite unsaleable for manure in this country. It may be remarked, too, that in the wet climates of the West of Ireland and of Scotland, where it is mostly used, the application of water is quite a superfluous operation for the farmer.

Another application of seaweed, which I mentioned before, was the manufacture of paper. As far as I know, this has only been carried out in France, on one plant, the Zostera marina, or Grass-wrack, a material largely used in this country for stuffing mattresses, and for packing light furniture. Some curious specimens of this plant, rolled up in little balls of fibre, were shown at the meeting, as thrown up by the sea at Majorca and Minorca; and soon after it created a good deal of attention, having been proposed as a substitute for cotton; it contains little fibre, however. It grows in enormous fields, on sand-banks, and is widely distributed, and is to be found in almost every ocean. It is a pure marine plant, with flowers, having nothing in common with the Algæ except the habitat. It is often found on the shore perfectly bleached. All the Algæ are cellular, and contain no fibre, but properly treated they make a tough transparent paper. *Edward C. C. Stanford, F.C.S., in "Journal of the Society of Arts."*

* *Epidendrum Christyanum*, n. sp. — Affine Epidendro glauco, Lindl.: bene pruinosum; pseudobulbo pyriformi bene attenuato diphyllo aggregato; foliis ligulatis acutis, racemo erecto; sepalis oblongis apiculatis; tepalis spatulatis; labello sublibero trifido ante unguem, lacinis lateralibus subquadratis, extrorsis, lacinia mediana triangula apiculata; callo depresso subquadrato inter lacinias laterales in laciniam mediam linea nata excurrente; columna trifida, laciniis lateralibus sulcatis; lacinia mediana retusa denticulata. Ex Bolivia imp. cl. T. Christy. *H. G. Rchb. f.*

* *Liparis* (*Coriifolia*) *decursiva*, n. sp. — Pseudobulbo tumido subpyriformi utrinque obtusissime angulato diphyllo; foliis cuneato oblongis chartaceis; pedunculo anguste ancipiti alato racemoso; bracteis lanceis acuminatis carinatis ovaria pedicellata saltem inferiora superantibus; sepalis triangulo ligulatis; tepalis linearibus; labello unguiculato ungue brevi canaliculato cum tumore antice emarginato, lamina abrupte hastata ceterum subrotunda transverse, antice emarginata cum denticulo, antice et lateribus serrulata; columna incurva; basin versus ampliata, juxta foveam utrinque angulata. Ex India Orientali. (Dimensiones Liparidis foliosæ, Lindl., sed folia plus duplo latiora et probabiliter breviora.) *H. G. Rchb. f.*

INTERNATIONAL FORESTRY EXHIBITION.

British Guiana.—Opposite the Indian exhibits, on the north side of the middle transept, will be found a representative and most interesting collection of woods and other forest produce from British Guiana. It would seem almost incredible were we to enumerate the many valuable trees procurable from these primæval forests. The rivers being tidal for a considerable distance inland, afford special facilities for the rafting of timber from the inland stations to Georgetown, and various other ports to which ships resort. The principal tree of these forests is the Mora gigantea—until lately well known to our shipbuilders, but since the extended use of iron now almost discarded—the wood of which is not unlike Teak, hard and tough. Another valuable timber is the Greenheart, which from its great specific gravity and immunity from the attacks of sea-worms, is extensively used in the construction of docks, and for marine purposes generally. Over 100 specimens of trees abounding in the colony are shown, both in a rough and finished state, all of which are well worth inspection by those interested in such matters. Not less interesting than the above is a collection of the parasites and fungi which grow upon these trees. The bush-rope, an extraordinary tree parasite, first makes its appearance at the top of the tree, where the seed had been deposited by birds, and growing downwards frequently strangles the tree in its deadly embrace. The huge and extraordinary fungi here submitted for view—some having the appearance of metal, others of stone or leather—are simply astonishing, and would, to those interested in this way, be a study alone. Specimens of raw fibre and ropes manufactured therefrom are shown as illustrative of the fibre-bearing plants, in which the colony appears to be exceedingly rich. The material is, to all appearance, of excellent quality, and the threads of fibre of great length. Many notable examples of Indian art industry are also to be seen, such as the buck-pot formed out of a peculiar clay entirely by the hand, in which all their food is cooked; the "shake-shake," or rattle, of the Pei-man, or village wizard, and children's rattles made of Gourds.

Manitoba Farm.—Now that the Manitoba farm, in the open-air portion of the Exhibition, has been thoroughly equipped, a good idea is given to visitors of the mode of life followed by the emigrant farmer in the great Canadian North-West. Inside the entrance-gate of the steading a tent is erected, in which the new settler is supposed to live during the time his first dwelling-house, in these parts, is in course of erection. This tent is usually made of canvas, with a camp-fire in front, and contains such articles as may be of immediate use, including the settler's box, bedding, and cooking utensils. The permanent house shown on the farm contains two apartments, and is furnished in the style usually adopted by new settlers. The space between the joints of the house are filled in with a mixture of clay and chopped hay, over which is tacked a heavy kind of paper instead of lath and plaster. Adjoining this primitive but comfortable dwelling is a representation of a log stable, the mangers of which are filled with hay from Manitoba prairies. A cattle shed is also shown, in which are displayed various samples of timber from Manitoba. Examples of the various modes of fencing adopted on the prairies are also on view, as well as pails, tubs, and washboards. A cart made entirely of wood, and which, from its well worn appearance, had seen better days, stands near the house, and shows what from time immemorial has been used for freighting over the vast prairies, while alongside this is placed a modern Canadian waggon and a heavy "bob" sleigh, whose fittings are so arranged, that the box on the waggon can be transferred to the sleigh in winter. The exhibit, which is made by the Canadian Pacific Railway Company, is very neatly arranged, and seems, from the number of people constantly in its vicinity, to attract a fair share of public attention.

Scottish Arboricultural Society.—In the transept immediately opposite that appropriated to the royal forests is a display of much practical value, contributed by the Scottish Arboricultural Society and about fifty of its members. The Society as a body contributes sections of wood in design and otherwise, including over forty Canadian sections, a collection of cones, and various meteorological instruments. Neat models of a bridge over the River Almond, and a heather house, are exhibited by the Earl of Mansfield's forester. From the same place comes a Silver Fir railway sleeper, which was laid along with sleepers of Baltic Pine on the Caledonian Railway in 1877, and when lifted last month was found perfectly sound, while many of the Baltic sleepers had been worn out a year ago. From Morton Hall has been sent an elegant library table, showing a beautiful combination of 117 different varieties of wood. Wood sections and a collection of forest leaves showing the autumnal tints have been sent from Dalkeith Park. The model of a river embankment, showing two different methods of preventing erosion, rustic bridge, stool, and table, all of superior workmanship, are kindly lent by the forester at Rothes Castle. Viscount Strathallan's forester contributes sections of Cedars of Lebanon, Abies Douglasii, and Abies Pinsapo; a piece of Holly tree which had at one time been used as a target, and still shows an arrow-head, as well as a self-shutting iron wicket-gate of neat design. From the Luss estate has been forwarded a fine example of the Silver Fir, while the Baroness Willoughby d'Eresby exhibits a section of the same tree, and of Cedrus atlantica grown at Drummond Castle. Other exhibits come from the Duke of Argyll, the Duke of Sutherland, Penrhyn Castle, Gordon Castle, Skibo Castle, and Baron's Court, Ireland.

The Commissioners of Woods and Forests.—The Government, by sending the extensive and valuable collection enumerated below, have certainly shown a great desire to further the interests of forestry. The extent of woodland under the direct management of this public department is about 53,000 acres, and is distributed as follows:—Dean Forest and High Meadow Woods, Gloucestershire, about 19,500; New Forest, Hampshire, 18,750; Windsor, Berkshire, 10,000; Parkhurst, Isle of Wight, 1152; Bere Woods, Hampshire, 1434; Alice Holt, Hampshire, 1887; Woolmer, Hampshire, 870 acres. From these various woodlands a selection of the different varieties of timber grown has been forwarded to the Exhibition, as well as numerous sections of wood, grown in different soils at altitudes ranging from 190 to 720 feet above sea level, and varying from 25 to 228 years of age. A most interesting chart or record of the comparative growth in Dean Forest of Oaks transplanted as well as not transplanted, since 1809, has been prepared at considerable trouble, and forwarded for perusal by those interested in such matters. Examples of the injurious results of leaving dead wood to encumber a tree, the effects of blight or canker, and the devastation caused by various insects, are clearly set forth, and will, no doubt, be the means of increased attention being devoted to these hitherto much-neglected points of forest management. The method of enclosure generally used in the New Forest is well illustrated in the outdoor portion of the Exhibition, where a hoop-iron fence has been erected, which, with bank and ditch, costs but a very nominal rate for erection. A cleft Oak fence, of rather rough construction, for preventing the inroads of pigs to these forests, is also shown. From Windsor Park come numerous sections of trees ranging in age from 204 years downwards, a Cedar of Lebanon 120 years old, a piece of Herne's Oak, and several cases of home-grown woods. A stack of Oak bark is shown as illustrative of the method usually adopted in Hants of setting up and saving this forest commodity, as well as a case of forest tools, which, to all appearance are of a less finished and more cumbersome construction than those used by our Scotch foresters.

Balmoral.—Amongst outdoor exhibits perhaps few attract a greater amount of attention than those of Her Majesty. Not only to the casual observer are these of particular interest but to the practical forester as well, illustrating as they do the valuable quality and uses of the wood, as well as soil in which these Highland Pines are best at home. The exhibits in question consist of a rustic châlet made entirely of the grand old Scotch Fir from Balmoral, with numerous examples of the wood in a rough and polished state.

The châlet is made from trees that had been recently blown down, and is not, as generally supposed, a model or counterpart of any rustic arbour at Balmoral, but was erected for Her Majesty's inspection and met with her entire approval. The interior is panelled with beautifully grained and well polished boards of this native Pine, while the exterior is composed of branches, bark, and mosses collected from the forest. Some beautiful articles of furniture, also made of this Pine, are exhibited within the châlet, the beautiful grain and susceptibility of a high polish showing how well this wood is adapted for the use of the cabinet-maker. Two inverted bell-glasses filled with specimens of the soil on which these trees have grown are of great practical value to the arboriculturist. One of these contains crumbled granite with a small quantity of decomposed vegetable matter atop, and the other, which produces the largest and finest timber, is composed principally of ferruginous gravel, or almost pure inorganic matter, with a few inches of peaty turf on the surface.

An album containing a most interesting collection of mosses from the Ballochbuie Forest is shown by the forester at Balmoral, and specimens illustrating both the size and quality of the Highland Pine.

STREATLEY HILL AND WOODS.

Streatley, in Berkshire, is well known as one of the prettiest spots on the banks of the Thames, and the neighbouring hills offer rich hunting ground for the botanist. Starting from Goring station soon after noon we—a few enthusiasts—make our way through the ancient village. A turn in the road brings us to Goring Church, a beautiful edifice, that has held an important position in the clerical world in years gone by. The interior of the church is well worthy a visit; the tower contains a most interesting ring of five bells, one of which has echoed in this old Thames Valley for no less than 583 years. There is a capital Ivy-covered lich-gate to the entrance of the churchyard, and has been fortunate enough to escape "modern improvements."

On a shady wall close by we espy some strong plants of the Ivy-leaved Lettuce (Lactuca muralis), while a little farther on, in the more exposed parts, are masses of Sedum acre, with its bright starlike flowers; Veronica arvensis, the wall Veronica; the three-nerved Sandwort, Arenaria trinervis; Poa rigida, of the strigosa form of Poa pratensis. Another wall by the church is covered with the pilose Hawkweed (Hieracium pilosella), whose orange-tipped flowers and hairy leaves make a bold show.

Crossing the Thames by the wooden bridge we get an extremely picturesque view of the river, with its lock and broad weir, the old Streatley mill, and Goring Church opposite, a spot well known to the Thames roving artist. The first wall on the Streatley side of the river yields us lovely masses of the Ivy-leaved Toad-flax (L. cymbalaria) in full flower, accompanied by L. repens, which will soon be gay with its pretty violet flowers. This last is a common plant in the neighbourhood, at home on many a chalk bank and old wall. Reaching the "Bull," a well-known hostelry, we are tempted to test the quality of its hospitality before we climb the hill which is immediately behind. There is a well-kept garden here, teeming with showy old fashioned flowers.

Crossing the paddock we reach the base of Streatley Hill, with fine undulating chalk sides, half-a-mile in extent, and dotted with Juniper bushes. Our first find is Gymnadenia conopsea, the fragrant Orchis; a little higher up, scattered amongst the Juniper, are a few spikes of the spotted Orchis (O. maculata), but the soil is too dry for them to be finer. Orchis pyramidalis is just showing, and promises to be as good as usual. Gymnadenia in abundance, grand spikes, many 6 and 7 inches in length, varying greatly in colour—purple, rich pink, and pure white, while here and there we see a rosy-white form of great beauty.

Still ascending, we observe Sweet Brier bushes among the Juniper. On the most exposed parts of the hill we meet with the feathery leaves of the Pasque-flower (Anemone Pulsatilla), the flowers being over—in this district by the beginning of May at the latest. Linum catharticum, with pure white petals and drooping buds, is here in profusion. Kœleria cristata is pretty plentiful, so also is Avena pubescens, and A. pratensis; this latter is not unfrequently mistaken by the young botanist for Avena pubescens, but its narrow leaves, which are glaucous, at once distinguishes it from pubescens. Carex glauca we see, but it is over now; glorious masses of Polygala vulgaris, the Procession-plant of our ances-

tors, intense blue, rosy-pink, and pure white flowers, welcome at all times. Has a satisfactory answer been given to the question Sir John Lubbock asked, why the flowers should be indifferently blue or pink? Close by, amongst the nodding Briza media—Wiggle Waggle, as it is locally called—are clumps of Bird's-foot Trefoil (Lotus corniculatus), whilst

"The mountain Thyme
Purples the hassock of the heaving mole,
And the short turf is gay with Tormentils."

Ophrys apifera turns up next, though sparingly, and its quaint flowers call admiration from all. The Squinancy-wort, Asperula cynanchica? Yes! there is no mistaking its pretty pink striped flowers—plenty of it too, though no smell to this like its near relation, the Sweet Woodruffe, but it is welcome, being local. Bromus erectus, the tall Brome-grass, and Triodia procumbens, procumbent Heath-grass, is common in the shadier parts of the hill. There has evidently been a good show of Orchis morio, the green-winged Orchis, but only withered flowers now remain.

Cephalanthera grandiflora, large white Helleborine, is at home, just in the shade of the wood—grand examples with six, seven, and eight creamy-white flowers on a spike. Of the dwarf Orchis, O. ustulata, we find but a solitary specimen, which we leave after noting the raised crimson spots on the labellum. We are doomed not to meet the Orchis we have been keeping our eye for: our penetrating glances are of no avail, for Orchis militaris (the Military Orchis) is not to be numbered amongst our finds. This is one of the homes of militaris, but with the exception of my friend, Dr. Arnold Lees, F.L.S., who was fortunate enough to find it last year close by Streatley, but not on the hill. I do not think it has been found for a long while now. We are partly consoled, however, for we find the field Cineraria (Senecio campestris), not a few plants, but hundreds, though we are careful not to pull roots up, plentiful as it is. The Dropwort (Spiræa Filipendula) is also at home here, with its elegant cut leaf and crimson-tipped inflorescence.

The Beech wood which crowns the hill is reached at last, and we get a capital view of the surrounding country. Down beneath us is Father Thames winding like a ribbon, dotted here and there with eyots, and fringed in places with heavily leaved trees. Out in front of us, to the right and left, as far as the eye can reach, are spread the fields in endless variety of colour, while at our feet amongst the tall Elms lie Goring and Streatley.

To explore the woods is our next thought, and we are not long inside before we find the Bird's-nest Orchis (Neottia Nidus-avis) with its peculiar scent, "like pepper," as one of the party exclaimed. Their place will shortly be taken by a no less curious plant, *i.e.*, Monotropa Hypopitys (Yellow Bird's-nest). Asperula odorata has had a good time of it here, but enough is left to gather a few of the white blossoms. Bunium flexuosum—the Earth-nut—is in flower, but the country children around here like to search for the Nut nearer the autumn. Habenaria bifolia—the Butterfly Orchis—with welcome scent, is next discovered. The Enchanter's Nightshade (Circæa lutetiana, Veronica montana, the Wood Pimpernel (Lysimachia nemorum), are common plants. The grasses lend a rare charm to the woodland scenery; Millium effusum in abundance, waving its spreading head; Melica uniflora, Poa nemoralis, and others, in company with Carex sylvatica.

In the more open spots we find several St. John's Worts, Hypericum perforatum, pulchrum, hirsutum, and montanum, mostly showing their first flowers. A cornfield at the back of the wood yields us Iberis amara, Candytuft, full of white blossoms; and Campanula hybrida. Many other things worthy of note are to be found here; but time has flown; so with well-filled vasculums and grateful spirits we wend our way down the hill towards the station. *Frank Tufnail.*

ELISENA LONGIPETALA. — Notwithstanding the fact that many of the flowers of this class are short-lived, they are universally admired, and where grown are valued not merely for the delicate purity of their flowers, but for their fragrance. In this one, however, we have a departure from the usual type, as seen in the Pancratiums, Hymenocallis, and Eucharis, inasmuch as the stamens, the crown, and the perianth, are deflexed and irregular. The segments of the latter are also somewhat wavy and crisped at the margin, which adds much to the general attractiveness of the whole inflorescence, which consists of some four to six sessile short-tubed flowers seated on the top of a stout compressed peduncle. There is a figure of it in the *Botanical Magazine*, t. 3873, and a flowering specimen in the Cape-house at Kew.

DISEASE OF POTATOS.

FUSISPORIUM ROSEOLUM, *Steph.*—During the last few days we have had an opportunity of examining some of the Potato plants destroyed by the Peronospora at Bedford, as recorded by Mr. Thomas Laxton. Mr. Laxton states that he first observed affected plants at the latter end of May last. This need cause no surprise. In 1875 we detected the perfect fungus in the beginning of June. (See *Gardeners' Chronicle*, July 10, 1875, p. 35.)



FIG. 7.—FUNGUS IN DISEASED POTATOS: FUSISPORIUM ROSEOLUM, STEPH.



FIG. 8.—DISEASE OF MUSHROOMS: FUSISPORIUM MUCOPHYTUM.

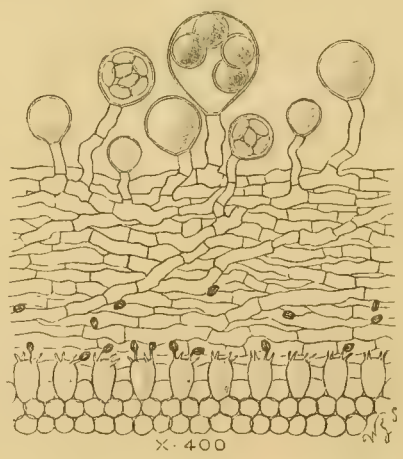


FIG. 9.—DISEASE OF MUSHROOMS: SAPROLEGNIA MUCOPHAGA.

Some of Mr. Laxton's tubers were reduced by the disease to the well-known jelly condition so familiar to Potato growers. The diseased tubers become quite soft, and on being cut open the whole interior is one somewhat firm, semi-transparent, gelatinous mass. Under the microscope this translucent jelly is usually full of mycelium belonging to Peronospora infestans, Mont., and the threads frequently carry the reproductive organs.

Sometimes this jelly-like mass exhibits rose-coloured patches of great beauty, resembling rose-coloured blanc-mange; this colour is caused by the presence of Fusisporium roseolum, Steph., a fungus described by the Rev. M. J. Berkeley, from the MS. of Mr. H. O. Stephens, of Bristol, in the first years of the Potato disease. As the fungus has not, we believe, hitherto been illustrated, the accompanying engraving (fig. 7) may be welcome and useful. The Fusisporium often accompanies the Peronospora, and there is a second, very different, colourless, and more common species of Fusisporium, named F. Solani, Mart., which also accompanies the Peronospora, and grows on and in Potatos; the latter is illustrated to the same scale as F. roseolum, Steph., in the *Gardeners' Chronicle* for May 20, 1876, and July 8, 1876. The different species of Fusisporium grow in the inside as well as the outside of affected plants.

If a fragment of the rose-coloured jelly be taken from a diseased Potato tuber, and observed under the microscope with a power of 400 diameters, it will be seen as in fig. 7, an involved mass of pink mycelium, with short stems carrying an immense number of beautiful curved, rose-coloured, spindle-shaped spores, each spore being furnished with from three to eight stops or septa. Each piece of a spore thus cut into segments is capable of germinating and reproducing new mycelium, and ultimately spores of the Fusisporium. It is common to see a Fusisporium working in company with a Peronospora; the latter is the lion, and the former the jackal. A similar phenomenon is seen on evergreens, where Capnodium Footii, B. and Desm., is almost invariably accompanied by Strigula Babingtoni, B., and in the instances where a Puccinia is accompanied by an Æcidium. This peculiar habit is sometimes termed "consortism," and only means that one host plant exactly suits the requirements of two different parasites, just as one animal may be a suitable harbour for lice as well as fleas. When Peronospora Schleideniana, Ung., seizes on Onions, Fusisporium atrovirens, B., frequently assists in the attack. When Peronospora parasitica, Pers., attacks Cabbages it is often aided by Fusisporium aurantiacum, Link; Peronospora effusa, Grev., on Chenopodium, is commonly helped by Fusisporium betæ, Desm. No imaginative person has yet ventured to say that a Fusisporium is one form of a Peronospora. *W. G. Smith.*

THE CHILIAN NUT.

IN February last we received for naming some flowering shoots of a very handsome shrub from the garden of J. B. Bolitho, Esq., Greenway, Brixham, Devon, which proved to be the Chilian Nut, Guevina Avellana, a plant introduced and distributed by Mr. Bull a few years ago, and of which we now give an illustration (fig. 10), with a view to calling attention to it. Mr. Bull well describes it as "an evergreen tree, growing in its native country, Chili, to the height of 30 feet, and furnished with coriaceous imparipinnate leaves, consisting of from two to five pairs of ovate-dentate leaflets. The flowers are in simple erect racemes, 2 to 4 inches long, succeeded by globose edible drupes, enclosing almond-like seeds, which are eaten in Chili and Peru. The latter have a mild and somewhat oily taste, while the fleshy pericarp is made a substitute for the Pomegranate." It belongs to the tribe Grevilleæ, of the natural order Proteaceæ, and has proved itself quite hardy in Devonshire, though whether it is so in any of the less favoured parts of the country we are unable to say. Any way, it is a very handsome shrub.

A HAILSTORM IN JERSEY. — The terrific downpour of hailstones, on a recent Saturday even ing, has done damage in Jersey to an incredible amount. Besides the appalling destruction of glass, the damage done to the Pear and Apple crop must amount to thousands of pounds, the young fruit being quite spoiled by bruises from the hailstones, which were as large as Cob Nuts. The injury to plants and flowers, and nursery stock generally, is bad enough, but to the fruit crop it is far worse, affecting as it does so many who can ill afford to bear the loss; and it is to be hoped that something will be done by the wealthy public for those on whom the damage will fall so heavily, and probably entail distress. "It is," says the *Jersey Gardener*, "enough to fill our minds with wonder and dismay to think of the amount of damage done to property in our beautiful little island in the space of ten minutes!"

THE BIG VINE AT MANRESA HOUSE, ROEHAMPTON.

AMONGST the big Vines existent in various places, about which little has been said, may be mentioned the one at the above place. I doubt if a more remarkable example is in existence, taking all connected with it into account. It occupies a hip-roofed house 224 feet long, by 11 feet wide, the roof glass, which rests on a low brick wall, is 13 feet 6 inches to the ridge, the back light 3 feet; the Vine, Black Hamburgh, was planted twenty-one years ago, in an accidental sort of way, no border or preparation of any kind being made, but the plant simply turned out of a pot up to a wall, with a view to its furnishing leaves for garnishing so as to avoid these being taken from the bearing Vines in the houses, it grew away freely and soon covered a considerable space, when part of the shoots together, and when the union was effected to sever the rods of the smaller Vine from its stem at the end of the house; in this way, as a matter of course, the rods thus worked on to those of the big Vine would have become part of it, and have been supported wholly by it, the sap working through the attached rods the wrong way, but here a remarkable unexpected occurrence took place. First, to try how the union would answer, last summer one of the rods of the small Vine had its leading shoot inarched to that opposite it of the big Vine, with the sap thus running in opposite directions, the union nevertheless was soon as complete as if the shoots had been growing in the same direction, and attached side to side in the ordinary way where this kind of grafting is effected. This spring the united shoots were allowed to remain, each attached to the Vine it belonged to, under the supposition that, for a time, until the necessarily working in the reverse of its natural direction, and also the lower part freed from the adverse influence of its powerful partner, began to push leaves of the ordinary character. Here is a very interesting case, even if of no consequence, from a gardening point of view. The primary cause of the derangement was obvious; the flow of sap in the stronger Vine overpowered that of the weaker one, but how the contention acted in bringing about the detriment in the least powerful is likely to remain unsolved.

In a continuation of the same run of wall is another big Vine in a similarly constructed house, 70 feet long, and which is at once to have 160 feet more added to it. The back wall is occupied by a fine lot of healthy Peach trees, which will be kept for a time until the Vine wants all the room, till which it will be confined to some three rods running along under



FIG. 10.—THE CHILIAN NUT (GUEVINA AVELLANA). (SEE P. 40.)

house as it now exists was built over it and as it extended more was added. It consists of seven rods, which run horizontally along the house. The bearing shoots are confined to such as spring from the upper side of each of the rods, and are trained upright under the glass at about the usual distance from it. The Vine is in the best of health, producing regularly highly finished fruits which have taken 1st prizes at some of the neighbouring shows. Last year it bore 708 bunches, weighing 900 lb.; this year's crop consists of 780 bunches. The stem is 15½ inches in girth, and two of the seven rods are each 6½ inches round.

It does not yet quite fill the whole of the house, another Vine planted at one end occupies 27 feet. This Vine has a similar number of rods, which are trained in like manner. Early last year the shoots of the two Vines had met, and with a view to filling the whole space with one Vine without further delay, Mr. Davis thought of inarching the extremities of the united extremities had got more strength, the support of both Vines would be an advantage to the rod thus united, but when growth commenced the joint action of the two soon began to show that it would not act, the young leaves and bunches on the shoots of the portion of the grafted rod belonging to the big Vine went on all right, as usual, but the leaves produced on the part of the rod belonging to the smaller Vine came from end to end all crumpled and deformed, and not more than a fourth of their natural size, whilst the bunches were nothing but twisted distortions, presenting, when I saw them, a singular contrast to the ample foliage on the other rods not grafted.

Mr. Davis let this go on for a short time, thinking that the growth might come right, but such was not the result the rod of the smaller Vine was then severed at some distance below the point of union, after which each portion, both that which had now to depend for its support on the big Vine, with the sap the lower portion of the roof. This Vine is also in a somewhat peculiar position; it is planted, like the one already noticed, against an open wall, but the wall runs at right angles to that against which the house it occupies is built, and separated from it by a gravel walk, under which the rods have been bent down and brought up again on the opposite side within the house. Where the natural soil is suitable for Vines, as it evidently at this place is, border making, as ordinarily carried out, is an unnecessary operation. The kitchen garden in which these Vines are planted, and in which the roots have an unlimited run, is an old one. Rich liquid stimulants, without stint, are applied to the borders inside the houses, which consist of the natural soil. If all goes well, at no distant date these two houses, 454 feet in length, will be filled by a couple of Vines.

Those who are conversant with what appeared a few years back in the pages of the *Gardeners' Chronicle* respecting the produce of a large Peach

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tree, which at that time filled one of the houses at this place, will no doubt recollect the surprise that was created amongst fruit growers by the extraordinary amount the crop realised, which was £702 in the sixteen years during which it was forced, reaching to as much as £78 in one year, when at its best. Needless to say early Peaches, like a good many other kinds of forced fruit, commanded very different figures then than at the present day. The variety was Grosse Mignonne—it came to an untimely end, being killed by a dressing of paraffin, applied in an insufficiently diluted state. Mr. Davis keeps the stem of this peerless tree stuck in one of the borders adjoining a walk in the garden. Any one afflicted with over-strung nerves would have buried it out of sight, to banish the thoughts of the mishap. The stem of this remarkable tree is more like that of a good sized Apple in thickness than a Peach.

A large quantity of this fruit is still grown; the big lean-to house the old tree occupied is now filled by others bearing a fine crop, not forced to come in so early as in times past. Half-a-dozen trees in grand bearing condition, filling another large house, and now carrying a beautiful crop, are deserving of especial notice on account of the circumstances connected with them. About eight years since these trees occupied a house in the hands of a market gardener and fruiterer, five years planted, and nearly as big as they are now, but they did not bear satisfactorily, and for this reason were about to be destroyed. Mr. Davis happening to see them made an offer to take them, which was accepted; in July he had the roots all cut back to within 3 feet of the stems, and afterwards freely supplied with water. They were moved in October with every possible bit of root they then had to the house they are now in, and the following June the crop was sold for £75. No bad instance of what can be done in at once filling a house with Peaches, and having no waiting for a crop, providing trees in right condition are obtainable, and they are rightly managed afterwards. The sorts are—Peaches: Red Magdalen, Stirling Castle, Grosse Mignonne, two trees of Royal George; and an Elruge Nectarine.

Several houses of considerable size contain Vines in good bearing order, and now carrying satisfactory crops of nice compact bunches in different stages, but, none are forced so as to come in nearly so early as was the practice here when better prices were to be had. Melons are grown extensively in long low houses suitable for this kind of fruit. A large extent of wall is occupied by outdoor Peaches, which do remarkably well, the trees on the principal south wall are this season as full of fruit as they might have been expected to be had the frosty nights, which did so much mischief in many places, not occurred; the wall is 10 feet high, without coping, and no protection of any kind was used. The wood is kept thin, the garden engine freely used and the roots well supplied with moisture as they require it. *T. B.*

HEALTH EXHIBITION.

Notes on Fruits and Vegetable Substances Preserved.—If we take the word "preserves" in a wider sense than the housewife would do, we find that there would be included all those multitudinous articles that civilised humanity endeavours in a variety of ways to keep in an eatable or usable condition for considerable periods of time; these are treated in the season of the year in which they are to be found naturally in the greatest abundance, whether it be fruit, vegetables, fish of certain kinds, &c. Mr. Gladstone struck the right note in one of his recent speeches in the country when he said that we must take more to fruit growing and fruit preserving than he thought at present was the case, although he perhaps somewhat underrated the advances already made by our countrymen in that direction, and notably by Lord Sudeley, who at Toddington, near Cheltenham, has laid down 500 acres to fruit culture alone. This quantity of land, that consisted mainly of good sound loam, overlying a lias formation, was eminently adapted for fruit tree growth, in fact the district has been famous for fruit growing for many years. On carefully prepared land 30,000 standard Plums were planted, chiefly consisting of Denyer's Victoria, Pond's Seedling, Diamond, early Green Gages, and about forty other kinds. Of Damsons there were planted 9000, half of them being the Cluster or Crittenden. Of Apples there are 5000, mostly Cox's Orange Pippin and Lord Suffield; of Pears 852, in leading kinds; and 582 Cherries of the Bigarreau and Blackheart sorts. These numbers, though large, become insignificant when compared with those of small fruits. Black Currants head the list with 220,000, mostly Baldwins and Black Naples, 20,000 red Currants of the Raby Castle and Scotch red varieties. Gooseberries number 130,000 of Crown Bob, Warrington, Whitesmith, and Lancashire Lad, and Raspberries 120,000 stools. Of this last-named the Fastolf was once preferred, but now, on account of its better colour, Semper Fidelis is the favourite preserving variety, although it is distinguished rather for its acerbity than for any other quality, which in a preserve perhaps saves it from that attribute of mawkishness so often found in Raspberry and Strawberry jam. Stirling Castle was the sort of Strawberry at first planted, but now the preference is given to a kind called the American Scarlet, which has a higher grade of aroma; in that respect almost equalling the wood Strawberry, than which *connoisseurs* will say there is none better. To our eye the preserved fruit had a strong resemblance to the Grove End Scarlet—a kind now quite out of fashion, but which is one of the best coloured fruits for the purpose we are acquainted with. Some idea of the immense quantity of plants wanted for the large extent of ground under the crop may be formed from the fact, that 30 tons of runners of this American sort have been sent from Isleworth and Brentford to Toddington for planting.

Mr. T. W. Beach takes all the fruit grown under agreement for a series of years, and converts it into jam, &c., on the spot, an old farm-house having been converted into a factory. He has seen the desirability of employing glass jars instead of earthenware, thus enabling his customers to see the condition of the fruit. Most of what is here on his stand exhibits the fruit in an unbroken form, not mashed up as so much of the fruit is which is sold at a cheap price; the unbroken fruit being not only more enticing but it is a proof that only sound fruit has been used, and also precludes the addition of any adulterating substances. We can speak of its excellence, having tasted some of the new fruit that was sent in on June 20. The public should wish this spirited joint undertaking of Lord Sudeley and Mr. Beach all prosperity; and there is no reason why many similar enterprises should not be inaugurated, and an endeavour be made to secure some portion of the £2,000,000 that yearly go out of the country for the purchase of foreign fruit.

Another exhibit, consisting of articles of great utility to a seafaring people is that of C. Prevet & Co., late Chollet & Co., of Fenchurch Street, London. Here are all sorts of garden vegetables, such as green Bean-pods, Spinach, Brussels Sprouts, Cabbage, flavouring herbs, Onions, Cauliflowers, Turnips, Carrots, and Leeks, dried, of their almost natural colours, and consequently reduced in the process to about one-sixth of their normal bulk. The various items are mostly cut up into small pieces, and into other still more minute portions for "Julienne." These are sold in either a loose or a compressed state, the former for home consumption, the latter for ships, exploring parties, or for the military commissariat. Most sea-going vessels are enjoined by the Board of Trade regulations to take Chollet's compressed vegetables as a medical necessary, and a preventative of scurvy. We were assured that one cubic metre of the compressed vegetables was sufficient mess for 40,000 men. Portions of 4 lb. weight, containing sixty-four rations, also tins containing the materials for sixty and for twelve plates of soup—excellent things to take on pedestrian and other short tours into parts of the country where decent cookery is not likely to be found, especially as they are exceedingly light, and pack close together. In tropical lands, where vegetables grow luxuriantly and ferment quickly the Chollet vegetables are preferred, as they do not cause dysentery and cholera to Europeans. Another London firm, that of D. A. McCorquodale, 126, London Wall, have preserved in a dry condition Potatos, Onions, Parsnips, and Turnips, exhibited in separate tins. These methods, well adapted as they are for long preservation (two years being guaranteed), and being portable commercial articles, do not commend themselves precisely to the housewife, who may be desirous to preserve her surplus vegetables and Pulse in the season of plenty to the next winter season when the summer delicacies will be so much appreciated. The drying methods require great exactitude in the temperature, a special chamber, and much experience of a special kind. We should like to have found methods simple and inexpensive for keeping Kidney Beans, Runner Beans, Asparagus, Marrows, Cucumbers, and full grown Summer Cabbage. European people inhabiting countries that have severer winters than ours keep this vegetable over the winter by a process of salting-in, whereby an acid fermentation is set up. The different things are preserved entire, with the exception of Cabbage, which last is shred up first. Such vegetables are possessed of a flavour, the liking for which is a matter of acquirement, but they are wholesome and nourishing. Banana fruit in splendid bunches, and a meal made from the fruit, was shown by Mr. W. H. Ussher, of Bath. A pamphlet, stating how excellent the food was for a strong man doing heavy work, set us wondering what a railway navvy fed on this substance would do compared with another consuming his beef, pork, bread, and beer, and how he would stand in his piece-work account on pay-day. In several stands Paraguay Tea, Ilex paraguayensis, formed one of the exhibits, the renowned restorative being seen in the form of a brownish powder interspersed with coarsely broken up leaf. The Chinese Soya Bean, employed by the Celestials in sauce and oil manufacture, was observed in Mr. Christy's stand, as were Australian Pepper, Piper novæ-hollandiæ. Kokum butter, a substance made from the fruit of Garcinia indica, a tree growing on the hills on the western coast of India. The not very appetising looking balls are prepared by removing the seeds and drying the pulp in the sun. A fuller description of its preparation and uses will be found on p. 320, in this year's volume of the *Gardeners' Chronicle*. Here also were to be seen specimens of Odika bread (Irvingia Barteri) from the region of the Gaboon River, often used in the manufacture of confectionery with chocolate. It is likewise used as a national food by the natives. A variety of Coffee called Maragogipe, that is supplanting the other varieties of Coffee throughout Brazil, and which is said to be exceedingly productive, possessing berries with smooth, satiny skins, and of the highest quality. Erythroxylon coca, the leaves of which make a very delicious liqueur, and contain a very nutritive principle. Several varieties of Cinchonas are to be observed in the form of seeds and bark, such as Calisaya Verde, a Bolivian variety; C. morada, from the same country; C. Ledgeriana, from Ceylon; also a substitute for Cinchona, from Queensland—Alstonia constricta, a genus of the Apocynum family. The bark is intensely bitter, and is used as a tonic, and in stomach complaints. Hymenodictyon excelsum, related to the Cinchonas, with bark that is very astringent, as much as that of Cinchona. This plant is a native of Ceylon, and the bark finds employment in leather tanning. Here were also found Henna, Breadfruit flour, Papaine, a vegetable pepsine, the active principle of Carica papaya; Mandioc, an excellent Sago, a food frequently mentioned by Livingstone in his *Travels on the West Coast of Africa;* Tonquin Beans, the pleasantly perfumed seeds of Dipterix odorata, a native of Cayenne; the seeds are not unlike an almond, but longer, and covered with a shining black skin; Myroxylon Pereiræ, the bark yielding the Balsam of Peru of commerce.

Miscellanea. — Hose, water-pots, engines and irrigators, have all been in constant use at South Kensington lately, as elsewhere, and the public have had the opportunity, as we have had, of seeing the serviceable work done by Deverill's Patent Irrigator, which is easily movable from place to place, does its work efficiently, and may be left to do it while the workman goes off to something else. We can confirm the favourable opinion we gave in 1881.—Messrs. Charles Lee & Son, now that the Rhododendron season is over, are re-arranging the areas alloted to them by the introduction of ornamental deciduous and evergreen shrubs in pots. The white variegated Cornus mas is very effective mixed in with green shrubs; the tricolor variety is perhaps not so effective as usual, the dry dust-laden air of Kensington, impairing the colour of the Golden Elder and Golden Privet. Messrs. Lee make effective use of standards, such as the common variegated Euonymus radicans grafted on a standard some 3—4 feet high; the old gold-leaved Ivy is similarly treated, as also the new silver variegated form and others. The naked standard is concealed by the surrounding shrubs, above which the heads project with striking effect.—Messrs. Osterlook, of Amsterdam (Dulan & Co., agents), show in the gallery of the Albert

Hall some excellent models in pasteboard of the Peronospora of the Potato, the Oidium of the Vine, and other similar things, which would be most valuable in schools of horticulture.—Messrs. Dick Radclyffe & Co. are, to our thinking, more successful with their Queen Anne window Fern case than with their more ambitious production, already noticed, near the Prince's Pavilion.—Great interest attaches among those competent to appreciate it, to the exhibition in the French Court of the apparatus and instruments employed by M. Pasteur in his wonderful experiments on the cultivation of bacterial growths, their propagation and attenuation by culture, the means provided for entirely excluding them, and so forth. The vastness of the benefit to the human race and to animals by these experiments is beyond calculation, and yet it is just this sort of observation which some well-meaning but woefully misguided people are doing and have done their best to stop. Wait till they get bitten by a mad dog themselves, and see what they will say then.—The library and reading-room have been discovered, we suspect, by only a small fraction of the visitors; for those who have leisure enough or who wish to prosecute special research, this library will be found quiet, convenient, and well arranged. Why should not the Lindley Library be equally well housed and rendered accessible? But that involves other questions, which we cannot enter into now.—The Danish portable houses, made of felt and canvas, with wooden floors, are offered as a substitute for tents, to which they offer superior advantages, as they are quite as portable, more easily put together, more commodious and wholesome; for shooting or fishing huts, garden offices, and a variety of other purposes they seem well adapted. Messrs. Puggaard & Galschiot, of 34, Eastcheap, are the agents. By the way, we have discovered that the agents for the Quillaia, mentioned in a former number, are Messrs. Chase & Co., Adelaide Buildings, London Bridge.

The Arboretum.

Araucaria imbricata.—This fine tree, assuredly the finest evergreen tree we have, well deserves that we should accumulate all the documents and observations calculated to elucidate it. Among the desiderata I lay special stress on good photographs of the tree as growing in its native Chilian forests; perhaps some obliging reader of the *Gardeners' Chronicle* could supply the Editor with such a photograph? Of six Araucarias sown *in situ* in 1823 by M. de Kersanton near Brest, the finest measured in 1878 22 metres in height by 1.90 metre in circumference. By this time it must have reached 24 metres in height. It is with great interest that I have read of the existence of two additional cases of the monoicous condition of the Araucaria, which raises the total known to me to four—a very small proportion to the number of dioicous plants of this species. It remains to be seen whether the monoicous condition is constant or accidental in the trees in which it has been observed; but, in any case, it can only be looked on as an anomaly. It seems that the male catkins do not show themselves regularly every year, but at rather long and irregular intervals, and that the number of these male catkins is very few, while in the dioicous plants the cones are produced in abundance, and regularly every year. At one time I thought that the loose-habited candelabriform trees were female, the closer habited one male, but I have since come to the conclusion that it is impossible to tell the sex of an Araucaria previous to the production of flowers. This year I think the Araucarias will produce an abundance of cones. One of my trees, forming a fine pyramid, bore two cones in 1877, two others in 1879, and none since till this year, when it bears at least fifty already as large as my fist. I took from the late Mr. Hammond's garden at Cherbourg some twenty male spikes, some of which I attached to long Bamboo rods, and by their means was enabled to fertilise the female cones of my plant, and thus, as I hope, to secure seed. Lastly, I should esteem it a favour if some of your correspondents along the Mediterranean coast, in Italy or Spain, or even in the South of France, would tell us how the Araucaria thrives in those regions, and to what dimensions it attains. *P. Joseph-Lafosse.*

CARNATIONS AND PICOTEES.

Messrs. James Veitch & Sons have again prepared a very large and choice exhibition of Carnations and Picotees, in their Royal Exotic Nursery, King's Road, Chelsea. They have all been planted out in beds in the open ground, and although they have been grown in the same beds for many years the fact remains, that in no previous season have they been better than they are this year. The collection is so thoroughly representative, that not one class or section of the Carnation or Picotee has been left out. The plants have had no protection whatever until the flowers opened, when they received the light shade of a canvass awning to shelter them from the burning sun.

The florists' section of bizarre and flake Carnations comprises all the finest new and old varieties, but to give a list of them would take up too much space; it is sufficient to say that they may be seen growing here in their unsophisticated beauty, untouched by tweezers or dressing implements of any kind. Admiral Curzon, Arthur Medhurst, Fred, and Robert Lord are yet the most beautiful of the scarlet bizarres; while of the crimsons the new Master Fred and E. S. Dodwell seem to hold a very prominent place. The rose-flakes seem specially adapted for out-of-doors culture; the best of them are James Merryweather, John Keet, Sybil, and Lord Chelmsford.

The Picotees surpass the Carnations in beauty and vigorous development; the rose and scarlet-edged section are singularly pure and beautiful in the white ground, while the edges of both the light and heavy section seem to be most brilliant in their newly opened colours.

The Carnation and Picotee blooms have unjustly obtained the character of being fugacious. This is not so; they will last in beauty a month in cold weather, but they cannot stand a maximum temperature of 85° and 90° in the shade for days together; their time of flowering is the hottest period of the year.

Of the purple-edged section, Clara Penson was certainly the queen of light edges, and Mrs. Chancellor the best of the heavy-edged. Baroness B. Coutts represented the best of the medium-edged. John Smith, Dr. Epps, Thomas William, Mrs. Gorton, and Mrs. Dodwell are the best of the red-edged kinds.

The most important part of this exhibition by far, from a gardening point of view, is the self and fancy Cloves and Carnations planted in beds and groups, while the new yellow selfs introduced by the firm from France will probably effect quite a revolution in this important section. They are of a dwarf free-flowering habit, and this, combined with good quality in the flowers, makes them very desirable acquisitions. Aurea floribunda has large, full, well formed flowers of a bright and pleasing primrose colour, and so floriferous that 140 flowers and buds were counted on a plant from an autumn layer. Mrs. Glen is of the type of King of the Yellows; the flowers are larger and fuller, while the plants have a vigorous constitution, which King of the Yellows has not. Miss Emily Little, with the largest flowers of all, is of a soft primrose colour. Primrose Queen has also very large flowers, which are beautifully fringed. Soleil Levant, fringed yellow, with a continuous flowering habit. The above is a selection from a numerous family of an entirely new type. Mrs. Buller must be noted as a variety with well formed flowers of a new yellowish buff colour. Princess Mary is one of the largest blooms, yellow barred and edged with crimson. Another kind, which cannot fairly be classed with the yellow varieties, has been named Fairy King; it is a straw colour, and seems to be perpetually flowering. These yellow kinds are planted in groups of from three to a dozen plants together, and their effect as border flowers can be seen at a glance. There are also beds and groups of pure white varieties, which also afford an excellent opportunity for comparison. Well, which is the best white? For form and quality, The Bride, certainly; but there are several white Carnations under this name; Hodges is the best. The plants were full of flowers, most sweetly perfumed. Of W. P. Milner there is a whole bed; the white is very pure, the growth vigorous; it is certainly the next best. Virgo is a charming flower, of the purest white, the plants of neat habit. Gloire de Nancy is esteemed by some, but the flowers burst their calyx, and they are rather coarse. Miss Marianne North is quite distinct as a white, and has large full flowers. Laura, though not quite pure white, is a desirable variety.

Duchess of Connaught is also a very pretty white kind, and desirable as a border plant for its dwarf habit. Ossian is also distinct in its way, prettily fringed, and seems to have a good habit and vigorous constitution. The above includes the best white varieties.

Rose and pink selfs are well represented, and at the head of the list must be placed Celia. As the flowers were exhibited at South Kensington cut from the plants, it received a First-Class Certificate from the Floral Committee on the 8th; if it could have been seen here growing on the plants the certificate would have been confirmed. The flowers are rosy-pink, Clove-scented, and the plants are very vigorous. John Barnet, of which there is a bed, is a noble flower, rich pink in colour, and very free. Elysian Beauty, very pretty, pale pink. Mary Morris makes an excellent bed, flowering very freely; its weak point is a tendency in the outer petals to lose their bright colour at the edge; but for this it would be second to none; with this fault it is surpassed by Celia. Corsair added to the above includes the best of the pink and rose colours.

There are three good purple-coloured kinds that stand out prominently. Walter Ware is the richest in colour, but the flowers are but medium in size. Improvement has large full flowers, very fine in colour; while Royal Purple is distinct and good. Here, also, is a whole bed of the "true old Clove;" it is very fine, but cannot be named on the same page with Ouida; this variety must be seen on the plant to appreciate its merits, and not in the form of cut flowers laced in a collar. There is nothing near it in its brilliant crimson-maroon colour; the flowers are also of good form, and the plants of a free blooming, dwarf habit. There is also a whole bed of amethyst aglow with rich and dazzling colour. The different tints of scarlet also add life and beauty to the picture. Field Marshal is a rich deep scarlet kind, of good habit. Of Bertie there is a large bed, the plants blooming very freely indeed. Coroner is yet well alongside some of the best for its warm and distinct scarlet shade.

The above includes most of the fine flowers to be seen in this collection; it does not include all of them: tastes vary in these matters, but the taste that refused to be gratified after an inspection of these Carnations would at least be peculiar. The Pinks have been fine, but they are nearly over; one, named Rose Perfection, has been raised as a sport in the nursery, is yet well in flower; it is a self of a bright rose colour, and must be a great addition to the list if it forces well. *Z.*

A PEEP INTO SOME JERSEY GARDENS, &c.

(*Continued from p.* 11.)

The Vineries.—From the Camellia garden at Mainland to The Vineries, the Grape-growing establishment of the Messrs. Pond, the well-known experts in cultivating the fruit of the Vine, is but a step. They are also in the parish of St. Lawrence, and are most charmingly situated, standing on the southern side of a hill about 300 feet above sea level, and commanding an extensive and picturesque view of a great extent of land, and a very considerable sweep of water. The "houses" are terraced one above the other, and face the south; they are long and narrow, and are divided into compartments by glass doors, whereby, say Messrs. Pond, they are made more snug, and heat is more advantageously concentrated. Messrs. Pond following necessarily the lay of the land, plant their Vines in borders behind the vineries, for the reason that space is saved, and the canes grow downwards instead of upwards. They are large as well as successful prize-takers, and their fruit is well known in the London and provincial markets. They consider an average crop to be about four tons. Stable manure is the fertiliser upon which they pin their faith.

Although the grounds of The Vineries are worth looking over, there is nothing beyond the Vines of very special interest. Cape bulbs, choice Carnations and Picotees are their floral fancies, and they have long offered a local prize for a speciality in the latter flower, as yet, however, without a single competitor.

Morley House.

Rivalling certainly, we will not venture to say excelling, The Vineries just told of, are those of Mr. George Bashford, of Morley House, Bagot, St;

Saviour's, a short mile to the east of St. Helier, Compared to Messrs. Pond's "fixings," as an American would put it, in point of situation and beauty, Mr. Bashford yields the palm, for his grounds are low and are completely shut in by walls, and except from the upper windows of his house there is no outlook at all, save upon 12 acres of land richly cultivated with vegetables and fruits for the London market, and studded with vineries to the extent of a round dozen, measuring in glass upwards of 105,000 feet. One vinery alone is enormous—870 feet long, by 32 feet wide, devoted to varieties of black Grapes; while another, for Muscats, of the same dimensions, is shortly to match it. His output of fruit last year exceeded 10 tons of Grapes, and is estimated this year at over 15 tons. One house alone—a lean-to—600 feet in length, contained in the month of April last, when we saw it, 2½ tons of Black Hamburghs in course of rapid ripening and cutting.

Mr. Bashford's system of fertilising his Vines to their high state of bearing and size and delicacy of fructification is his secret, but at the same time he will so far disclose it as to tell you that one year he uses lime, a second well rotted stable and poultry manure, and a third, fourth, and fifth an artificial compost prepared by himself at home — how, and with what, he is "mum" about, and rightly so. His former experience as a chemist has taught him, and the lesson is to his interest. He is a free water giver to his Vines, and has erected at very considerable expense a pumping apparatus, from the tank of which, placed in a tower 80 feet in height, about 100 tons of water can be pumped daily.

Besides Grapes Mr. Bashford sends some 40 tons of early Potatos to England annually. He is also a successful Strawberry cultivator, and in March last shipped for Covent Garden large quantities of splendid fruit, many of them weighing more than 2 oz. each, the produce of some 8000 odd pots. Peaches and Tomatos are also specialities of this gentleman, who, take him for all in all, is unquestionably the most scientific grower in Jersey; therefore you must needs visit him, reader, and if also you feel disposed to loiter away an hour in nurseries—nurseries of fruit trees, shrubs, flowers, and flowering plants, wander through the plantations of Mr. Saunders, in the St. Saviour's Road, or those of Messrs. Le Cornu, Mont à l'Abbé, both places being always open to inspection without formal introduction. *H. L. C.*

(*To be continued.*)

GARDENING AT BEDFORD PARK.

A NOVEL feature was imported into the proceedings of the Bedford Park Gardening Society, at a recent very interesting meeting in the club theatre, Bedford Park. The business of the evening comprised an exhibition of bouquets and decorations of garden flowers and wild flowers, and a vocal and instrumental concert; the several performances fitting in "between whiles," the occasional rest to the ear enhancing the freshness and cheerfulness of the music; and last, but not least, a lecture in the garden on garden flowers. The exhibitors who were specially honoured because of the high quality of their contributions, were Mr. D. J. Ebbets (first prize), Master Charlie Codd, Mrs. Swinley, Rev. J. W. Horsley, Mrs. Leigh, Mr. R. Read, Mrs. Brooke, Miss Viner, and Mr. Atherley Jones. For the critical inspection of the contributions and award of prizes and commendations, the committee secured the services of Mr. Shirley Hibberd, and when he had performed this duty, he was invited to address the company—a very large gathering of ladies and gentlemen—in the garden. Adapting himself to the novel situation, Mr. Hibberd gave a brief and bright address on the garden as a microcosm of the world, saying that our favourite flowers were capable of illustrating the most practical truths, and the most abstract ideas. The idea of time was illustrated from the polar and alpine flora, and its relation to the glacial epoch; the idea of form was boldly represented in the persistent types of vegetable beauty, and especially in the geometric or rythmic repetition of parts in all vegetable as well as most animal organisms. The importance of typical numbers in the structure of plants was illustrated by the dissection of the flowers of an Iris, which was explained to be a near relation of an Orchis, not in appearance only, but in the fundamentals of its organisation, the number fifteen being the typical number for both. We shall hope to hear of garden lectures in the garden becoming somewhat of an institution.

Orchid Notes and Gleanings.

ODONTOGLOSSUM ANDERSONIANUM. — First flowered in the Meadowbank collection, and described in the *Gardeners' Chronicle*, June 6, 1868, this pretty Odontoglot marked a new departure, and opened up a fresh series of varieties, ranging between O. crispum and that form of O. odoratum which is often named O. gloriosum in gardens, the different specimens varying in every conceivable way, as they partake more markedly of the characteristics of either one or other of the parents, or as they seem to combine the features of both. In speaking of hybrid Orchids, we are apt to speak of them as though the plants of them received into this country were actually obtained from seed borne by one of the parents, and cross-fertilised by the other, but such probably is not the case in many instances. In many cases, no doubt, the plants of to-day are the result of seeds borne by self-fertilised flowers of cross-bred varieties, and of which the original mingling of the species may have taken place in the very remote past. Hence it may be that the progeny by reverting to one parent or the other, gives us a much greater variety than we should have if the plants were always the results of immediate crossings. Odontoglossum Andersonianum has endless variety,



FIG. 11.—ODONTOGLOSSUM ANDERSONIANUM.

but every form of it is very lovely, and has the additional charm of being delightfully Hawthorn-scented. It is a very vigorous grower if managed the same as O. Alexandræ, and kept cool and moist all the year round. We give illustrations of the ordinary O. Andersonianum (fig. 11) and of O. Andersonianum lobatum (fig. 12), a well marked and very distinct variety.

PAPHINIA GRANDIS.—A singular Brazilian Orchid, with egg-shaped pseudobulbs, broadly ovate lanceolate plicate leaves, and racemes of large transversely oval somewhat cup-shaped flowers, 7 inches across. Sepals and petals oblong lanceolate acuminate, yellow, barred with chocolate-brown, the free ends wholly brown; lip shorter than the segments, of too remarkable a shape to be made intelligible by words. Mr. Williams recommends their culture in suspended pans near the glass, in a warm moist house, with shade from the burning sun. *Orchid Album*, t. 146.

GRAMMATOPHYLLUM ELLISII.—This remarkable Orchid, with its many flowered racemes of triangular cupped flowers of a yellowish colour, densely spotted with reddish-brown, is figured in the *Orchid Album*, t. 147. It is a native of Madagascar, and will thrive well in the East India-house.

BARKERIA CYCLOTELLA. — This Guatemalan species has racemes of flat oblong flowers, each about 2 inches across, with ovate acute sepals and petals, and oblong obtuse lip. All the segments are of a bright rosy lilac, and the lip has, in addition, a white blotch at the base. "In Barkeria culture," says Mr. Philbrick (*Orchid Album*, t. 148) "air is everything; the fullest freest circulation, no shade even in the hottest sun, but full in its rays—the more sun the better. When growing keep watered, dipped overhead as often as you can. I often dip mine myself . . . and put them back in the full sun dripping wet. They like this, extraordinary as it sounds. . . . In a common Orchid-house, especially with no air on at night, 'it living doth languish, and languishing doth die.'"

LÆLIA ANCEPS HILLIANA.—Flowers flat, star-like, with narrow lanceolate white segments and a three-lobed lip, the side lobes of which are upturned, while the central ovate free lobe is flat or recurved, pale violet, with a yellow disc, striped with red. *Gardeners' Chronicle*, n. s., xv., 169. It flowers in early spring. Mr. Williams recommends the Lælias to be cultivated in the Cattleya-house, with abundance of water in the growing season. The plants should be raised above the pot or basket. *Orchid Album*, t. 146.

STENORHYNCUS SPECIOSUS.—A terrestrial Orchid, with broad undulate leaves and erect many-flowered pyramidal racemes of crimson bracts, subtending flowers of the same colour, but with white lip. *Garden*, June 14.

Florists' Flowers.

NEW ALPINE AURICULAS.—At a recent exhibition of the National Auricula Society in London, two visitors stopped before a very fine collection of new alpine Auriculas, staged by Mr. Charles Turner, of Slough, and one remarked to the other, "These are Primulas." "Oh, no!" was the reply of her companion, "they are Auriculas." Both admired the exquisite beauty of the flowers, but neither appeared to be quite clear as to what they were. The florist, who for years had watched with increasing interest the marvellous development seen in the Slough alpine Auriculas, witnessed here so much of unexpected beauty, that, despite of large expectations, it came as a floral surprise. A wave of improvement, appeared to have passed over the flower in the course of a season or two, raising it to a higher level of perfection in an incredibly short time.

When will these new flowers find their way into commerce? is a question of interest with many. Alpine Auriculas are much more fertile of offsets generally than are the show varieties; but it is obvious that with the large demand Mr. Turner is sure to receive for new varieties of acknowledged merit, three years at least would be necessary to obtain sufficient increase. Unfortunately, the intervening space between being certificated and being sold is so great that one is apt to forget the characters of the flowers that made so deep an impression on the fancy at the time.

Among the flowers of high quality shown on this occasion were Roysterer, golden centre, black ground colour, with a broad and regularly defined margin of bright salmon and amber—very fine shape; Rob Roy, golden centre, dark ground, with a broad edging of rich chestnut-salmon—very bright, fine and distinct; Resplendens, pale yellow centre, slight dark ground, with broad edging of magenta-crimson — very fine form and large bold pip; A. Lloyd, very rich deep golden centre, dark maroon ground with slight margin of bright crimson—very fine and striking; Dr. Denny, pale yellow centre, with a broad smooth margin of dark plum—very fine; and Romer, golden centre, slight dark ground, with a very distinct edging of lively salmon-scarlet—a flower of great beauty. To all the foregoing First-class Certificates of Merit were awarded. Other representatives of this fine break were Gipsy, clear pale golden ground, edged with maroon, flat in shape, and very fine; Criterion, creamy centre, dark ground, with edging of pale rosy-mauve; Marguerite, pale yellow centre, black ground, with edging of bright rose—very pretty; Portia, sulphur centre, dark ground, edged with bright crimson—large pip and very fine; Ouida, pale golden centre, maroon ground, with slight claret-crimson shading—very fine pip; W. H. Greenfield, bright golden centre, not unlike the foregoing, but

having a deeper coloured centre, broader in the marginal colour—a little more shaded, and larger in the pip; Dr. Masters, very rich golden centre, dark claret ground, broad crimson and buff edging—very fine pip and truss; Dr. Hogg, rich golden centre, velvety black ground, golden-buff edging—very fine; Raphael, pale-golden centre, broad dark ground, with the merest shading of pucy-crimson—fine pip and truss; Condor, pale gold, slight dark ground, with broad shading of pinkish lilac—very pretty and distinct; Artist, pale gold, broad dark ground, bright reddish-salmon edging—pip large and of very fine form; E. R. Cutler, golden centre, dark ground, with distinct edging of salmon-scarlet—fine rounded pip and truss; E. S. Dodwell, pale golden ground, changing to white, slight dark ground, with broad edging of salmon, dashed with purple; Corsair, white centre, broad dark ground and wide margin of rosy-lilac—very fine; Bayard, white centre, dark ground, shaded with bluish-lilac—very pretty and distinct; Talisman, white centre, broad black ground, with narrow edge of pale mauve-purple; Guy Denzil, white centre, dark ground, and bright purplish-rose shading, very finely formed pip and truss; Milton, white centre, broad dark margin, pale bright purple



Fig. 12.—Odontoglossum andersonianum lobatum. (see p. 44.)

shading; Tennyson, a variety with very large pips, inclining to coarseness, dark ground, broad shading of pale purple; and Mabel, cream centre, broad dark ground, with a fine wire shading of bright purple—pretty and distinct.

The foregoing list does not include any of the new varieties produced by Mr. Turner this year.

New Pelargoniums at Regent's Park.—The charming group of new large-flowered and fancy Pelargoniums shown by Mr. C. Turner, of Slough, at the meeting of the Royal Botanic Society on June 18, was so full of interest that it was a pity so much of darkness hung over the tent that the plants lost half of their attractiveness in consequence, and they were well worth inspection, for they represented the latest outcome of Mr. E. B. Foster's productions that had received names. The name of Foster has now been associated with the improvement of the Pelargonium for some forty years, and the march onwards from such starry, small-sized flowers as Gem of the West, Guardsman, and Bridesmaid in 1840, to such as the magnificent variety Magnate, shown on the above date, is indeed extraordinary. Catleugh, Gaines, Beck, Hoyle, and a few others not so well known to fame, but who in their day did worthy work on a smaller scale, have been the main actors in this transformation scene; and as the work done to-day is only an earnest of what will be attempted to-morrow, there is no saying to what length the work of improvement may go. On this occasion First-class Certificates of Merit were awarded to Magnate (Foster), a flower of great size and fine quality, having rich dark top petals with a wire edge of bright crimson, and salmon-carmine lower petals veined with dark, white throat; the flower of this was of unusual size, of the finest form, rare substance, and good habit of growth. This and Man of Arms (Foster) were awarded First-class Certificates of Merit; the latter has dark top petals with a wire edge of crimson, bright orange-carmine lower petals, with many heavily pencilled dark lines. The following new varieties shown on this occasion were also raised by Mr. Foster:—Democracy, rich dark top petals with narrow margin of crimson, rich pink lower petals with slight dark lines and blotches, large white throat—fine form and good quality; Outlaw, with dark top petals with wire edge of crimson, lively orange lower petals with slight dark blotches, and white throat—finely formed flowers, produced in bold trusses; Lively, a bright orange-crimson self, with a rich black spot on each top petal, and broad margin of deep bright scarlet—very bright and effective; Rising Sun, rich dark top petals, with margin of deep crimson and orange, crimson lower petals with slight dark pencillings, white throat—fine form and very free; Chief Secretary, large dark blotch on top petals, with broad margin of shaded crimson, warm pink lower petals, and white throat—Czar, shaded crimson lower petals with dark lines, rich dark top petals and white throat—distinct, fine form and very free; Fair Rosamond, glossy dark top petals with slight wire edge of deep rose, orange lower petals with slight dark stains and lines, white throat; Patrician, glossy dark top petals, with slight wire edge of crimson-rose, rosy-pink lower petals with slight dark blotches on each, white throat; Glowworm, bright scarlet, pure in colour and very striking, dark blotch on top petals, fine in colour, bold and showy; Purpurea, rosy-purple lower petals, glossy dark top petals with narrow margin of rosy-crimson, white throat—distinct, flowers a little rough, good habit and very free; and Democrat, dark top petals, deep rosy-pink lower petals, shaded with orange, white throat—good form.

The following varieties were also shown in very fine condition, and they may be taken as representing some of the best of the last year or two:—Confessor, black top petals with narrow rose margin, bright rose lower petals and white throat—large fine form and very free; Retreat, deep rose, deepening to scarlet, dark spots, white throat—very free and showy, and a fine variety for house decoration; Comet, bright red—very free and fine; Dido, bright scarlet: Retreat may be considered an improvement upon this; Margaret, a large flower of fine shape, rosy-purple lower petals, dark top petals, margined with rosy-purple, white throat—extra fine; Monarch, black top petals, edged with crimson, crimson-purple lower petals, white throat—extra fine; Royal Review, lower petals richly painted with crimson, very dark top petals, with wide edges of crimson—good habit, very free, extra fine; Scylla, maroon top petals, pale rose lower petals, white throat—very free and good; Statesman, pale rose lower petals, dark top petals, margined with rose, white throat—large and fine; and Veteran, dark top petals, lively rose lower petals, white throat—large flower, of fine shape. All the foregoing are also of Mr. Foster's raising.

Two new fancy varieties of Mr. Turner's raising were submitted for certificates, and to one the award was made, viz., Phyllis, deep purplish-rose, each petal having a wire edge of white, large white throat—excellent form and very free; and Murillo, in the way of the foregoing, but with more of puce in the colour, white throat, and also edged with white—very free and good form. During the past few years, new fancy Pelargoniums appear to have been produced somewhat sparingly. The striped sport, Dresden China, was shown on this occasion, very pretty where the flowers were nicely marked, but with the customary habit of sports to revert to that from which it sprang. A singular looking decorative variety, named Madame Albert Decaris, was also shown by Mr. Turner. It is of Continental origin, and has a large white throat, with a broad bright reddish-rose margin, and the flowers are uniform throughout, there being the entire absence of anything like blotches. It is very novel in character, and decidedly free. *R. D.*

DOWNTON COLLEGE OF AGRICULTURE.

After chatting through a summer evening with learned Professors, Messrs. Wrightson, Fream, Munro, and others, and retiring to rest under the same roof with forty students, all sons of gentlemen, some of noblemen, training for the business and pursuit of agriculture—they may make it a science yet, these energetic well educated young Englishmen, picked as they are, and as their appearance shows them to be, from the best of our race—I could not avoid reflecting on the changes impending in the mananagement of estates and farms. But the breezes of Wilts are pure and soporific when inhaled through a long day, and the quiet of this gentle valley in this chalk range, brought me the blessing that Henry IV. apostrophised in vain, and dreams followed, such as the historic atmosphere of Charford House, which has now been expanded into Downton College, by means of new wings and protrusions, would naturally inspire. Professor Wrightson occupied the old house and farmed 500 or 600 acres of land around it and took pupils here, and this formed the nucleus of a college which is enlarging every year and is likely to do so under his able management, even if there were twenty agricultural colleges in England instead of only two. But this is modern history.

In the Saxon *Chronicle* of the year 508 A.D., we read that Cerdic slew a British king that year near this very spot where the College now stands amid lawns and meadows, with a boat-house at the outskirts of the gardens and the Avon—as good a river for boating as the Cam itself, and affording pike which sometimes serve a numerous party with amazing appetites. Some of the meadows are watered and made thereby to produce early and most useful "feed" for the sheep, but the greater part of the College farm extends across the slope of the chalk range, and you will reach the rising ground with five minutes' walking from the College. Then you may traverse a lane running for more than a mile through fields of corn, as heavy as you will find this year, and yet upstanding, kept so by professional art, by soluble silica, or what else may be necessary according to the analysis of the soil.

But our history says, that circular embankment on the hill, enclosing now a clump of trees where ravens build, is Clayberry Ring. The irrepressible Romans were busy here on the hills throwing up

earthworks, but conquering — not colonising, so that all their records have been effaced except some roads, some earthworks like Old Sarum, some grass-grown and tree-covered camps in the hill, like Claybury Ring, or Whitsbury with the maze in it, Grimsditch—their work too, I believe—extends from here across the down towards Salisbury. We have not finished with Cerdic—may we never have done with his descendants, of whom the Queen is the latest reigning representative. In the first page of Green's *History*, the battle which was fought in this retired part of Wilts is mentioned as forming a new point of departure in the early history of the realm. It gave us, in fact, our long line of kings and queens—our present dynasty. Here Cerdic crossed the Avon, called the Christchurch Avon, and hence, Cerdicsford, now abbreviated and altered into Charford.

At this spot then, amid some of the most ancient and interesting memorials of our history, the old and the new may be said to meet, for except Cæsar's *Commentaries*, few narratives relating to England are older than the Saxon *Chronicle*, and on the other hand none of our institutions are newer and none are more necessary than the Agricultural College. Its object is to afford instruction in the art and science of agriculture by lectures delivered, either in the lecture room or the field, and by investigations in the laboratory. Numerous members of the coming race of landowners, land-agents, and farmers of the better class, will have reasons to be thankful for the teaching here. I listened to a lecture which expounded admirably the methods of cultivating a particular crop—the Turnip—and the use, and abuse too, of the new manures, whose effect on the soil, permanent or transient, has been so much discussed recently, and is at present so little understood by farmers. Farming has been found a perilous undertaking for Professors sometimes, but the large farm attached to the College is as well managed as that of any farmer in Wilts. There is no breed of sheep peculiar to the county, but the flock of 1200 Hampshire Down sheep has been raised to a high level of excellence in a short space of time, and the flocks that have attained a higher place after a longer struggle, might be counted on the fingers. Last year, August 12, lambs born about New Year's day, sold at £3 13*s.* each, a hundred of them. Cerdic may have paid a farthing a pound for mutton for his royal table; we pay fourteen pence! but only because our agriculture is defective. The good teaching which combines practice with science, will gradually attract a superior class of farmers with ample capital, and the price of mutton will be reduced. *H. E.*

FORESTRY.

FOREST WORK FOR THE MONTH.—Young plantations should be carefully looked over during the early part of the present month, and all rough herbage, Gorse, Brambles, Ferns, &c., be cleared from around the plants. Cut Thistles, Docks, and Nettles round the margins of plantations and along the sides of drives and roads. This work should be annually performed on all estates, so as to prevent as much as possible the dissemination of seeds. In this district recently planted trees and shrubs have suffered very severely from the long continuance of dry, warm weather. In light sandy soils numbers have been killed outright, while those that have survived so far look anything but in a promising condition. In the case of forest planting, at least on an extensive scale, watering is impracticable and altogether out of the question, but in the case of shrubs and ornamental Conifers a good syringing overhead in the evening may be administered with very satisfactory results.

Mulching the ground surface, as well as encasing the stems of the rarer trees for a couple of feet in height with a hay-rope, prevents the too speedy evaporation of moisture, and is usually attended with beneficial results. When once watering is started it must, however, be persevered with at regular intervals until rain sets in.

The pruning and disbudding of forest trees should be brought to a close with the month, and all branches removed from the woodlands previous to the young birds being introduced. Budding may now be successfully done, and being useful as well as highly interesting, should be practised by every young forester. Untie ligatures from early grafts, and, where necessary, stake and tie the young shoots. This is probably the best season for all water-work operations, such as repairing, deepening, or scouring drains and watercourses; piling and embanking rivers and streams, and, where necessary, draining ground intended for planting next season. As stated last month dig, hoe, and clean young hedges, and mow weeds and grass from the bottom of all live fences, as the getting up of a close fence near the surface of the ground can only be secured by keeping it clean and free from weeds. Ornamental hedges of Laurel, Yew, Box, Laurustinus, &c., may now be carefully trimmed with the pruning-hook, hedging-shears, or switching-knife. Have all prunings, especially of Yew, if practicable, burned on the ground, as they are pernicious to cattle.

Continue the tarring and varnishing of gates, fences, and tree-guards, and attend to the painting of outbuildings, rustic-houses, and seats. Remove blisters from fencing (iron) previous to using the tar or paint, and use the brush well down to the ground surface. In the nursery the chief work will be keeping down weeds, which there is every facility for doing during the present dry, sunny weather.

Attend regularly to the watering and shading of seedbeds, and to such seedlings as have been lined out during the past season. Turn heaps of Holly, Yew, and other store seeds, attend to grafts, and prune lightly where this operation is needed. Compost heaps may also be turned and a quantity of lime added, which not only destroys the germinative powers of many seeds but acts as a valuable fertiliser as well. As the peeling of Oak is now over for the season no time should be lost in the removing and lotting of timber, firewood and branches. Prune dead and broken branches from trees in the park and policy grounds, remove by felling or grubbing such trees as may now be seen to be either dead or dying, and pay attention generally to the pruning and cleaning of shrubberies, ornamental fences, and the interior of wire or wooden erections used as tree-guards.

Than the present no better time can be chosen for observing the ravages of insects among our timber trees, and devising means for their destruction. This is, unfortunately, a point in forest management by far too often neglected, the results of which are that in very many cases serious loss arises from the ravages committed by these pests in their various forms. It is by no means uncommon to see trees, especially Limes, stripped of their branches by the caterpillar of the Pygæra bucephala, while the bark beetle grub (Scolytus destructor) and the wood borer (Sirex juvencus) are equally destructive. To those interested in this subject one of the many manuals by Miss Ormerod will prove highly instructive.

Fencing in wood, iron, or stone should now be pushed forward with vigour, and all damaged fences strongly repaired. Tree-guards and rabbit-proof nettings will also require frequent examinations during the summer months. As previously recommended, continue the preparation of ground for autumn or spring planting. Where wet ground is to be planted in the autumn, no time should be lost in having the drainage effected. *A. D. Webster, Penrhyn Castle, North Wales.*

COLONIAL NOTES.

THE OUCHTERLONY VALLEY, SOUTHERN INDIA.—Starting from the Nedinuttum plantations by a bridle path across the intervening grass hills, the top of the Ouchterlony Valley is quickly reached, presenting to the observer a series of views of mountain scenery not to be surpassed anywhere in Southern India. Flanked on the left by the rocky, precipitous heights of the upper Nilgiri plateau, with forest-clad ravines, and gorges down which dash and foam the numerous mountain streams and torrents supplying the Pandi River, which after flowing through a portion of south-east Wynaad, enters the Nellumboor district, so famed for its Teak forests.

To the right it is bounded by a long spur of low fertile hills, the sides of which are covered with flourishing Coffee and Cinchona estates, interspersed with belts of jungle and primæval forests. The bridle path, which runs through the entire length of the valley, is a most interesting ride to any one possessing a botanical turn of mind, a continuous change occurring in the variety of vegetation met with as we descend from an altitude of 5500 feet above sea level to the lowest point, which is a little over 3000 feet.

At the commencement the scarlet Rhododendrons form, with the yellow-flowered Hypericum Hookerianum, the principal features of the landscape, the denser jungles having an almost impenetrable undergrowth of a tall-growing Strobilanthes, while most conspicuous amongst the numerous species of Ferns is the magnificent Tree Fern, Alsophila latebrosa. Palms are rare, but species of Dendrocalamus are plentiful in the jungles, the long canes of which are greatly in use for basket-work and tying purposes, and the dwarf Palm, Phœnix farinifera, grows on the open grass lands. The principal grasses, utilised greatly for thatching cattle-sheds and coolie lines, and for protecting the stems of freshly decorticated Cinchona trees, are Andropogon schœnanthus and A. Martinii.

About half a mile down we pass through the Balmadies Coffee and Cinchona Estate, where, although showing signs of being nearly worn out, are some of the finest Cinchona succirubra and officinalis in the district, the Coffee calling for no special remark beyond bearing crops above the average usually attained at a high elevation. A few acres of Tea are also cultivated.

As we pass through the jungle belts we notice specimens of the Nilgiri Nettle, Urtica heterophylla, which yields a fibre of considerable value, a sample of it, forwarded by me to a firm in London, being valued at £60 per ton. Numerous epiphytal Orchids occur on the trees, the principal jungle trees consisting of various species of Diospyros, wild Cinnamon, Artocarpus, Ficus, &c., the most valuable timber trees being Black-wood, White Cedar, Jack, Vengay, and Ben Teak.

The Guynd estate, a magnificent property of 800 acres of Coffee in a highly cultivated condition, is next reached. Here large numbers of Cinchonas are planted out amongst the Coffee bushes, great attention being paid to the valuable C. Ledgeriana. The usual crop of Coffee is between 200 and 300 tons annually. Three well-built bungalows are on the property, and a fine two-storeyed Coffee store, the pulping-house containing the largest pulping machinery in the district; this is worked by a huge water-wheel, christened "The Viceroy" by Lord Lytton when on a visit to the Ouchterlony Valley during his sojourn in India. Looking round on such flourishing properties one can hardly fancy that not a generation ago nothing was to be seen but dense, dark jungle, through which the wild elephants, bison, and numerous herds of spotted deer and sambur roamed unmolested.

From the adjoining estate, called "Tulloes," there is a fine panoramic view of South-east Wynaad, including the Devallah gold-fields and the distant Vellera Mulla hills, besides numerous outlying Coffee estates and extensive ranges of grass hills.

The jungles here contain fine specimens of Bambusa, including a scandent variety, and an ornamental Asparagus of the same nature, the Oak-leaved Platycerium being also common on the older forest trees, amongst which are to be seen numerous black monkeys, green pigeons, and the pretty Malabar squirrel.

Ipomœa malabarica, the fine purple Cispara creeper, and Gloriosa superba, are some amongst the many flowering plants; a bright scarlet-flowered Ipomœa growing over a granite rock near the Hope Bridge proved also very attractive. Small gardens cultivated by the estate coolies are here and there observed, containing principally Yams, Sweet Potatos, Castor-oil, and vegetables used in compounding curries, English vegetables being represented by Potatos, Cabbage, Carrots, Turnips, &c. Various kinds of tropical fruits are more or less plentiful, such as Plantains, Guavas, Limes, Citrons, Oranges, Shaddocks, Jack-fruit, Loquats, Pomegranates, and Papaws. The gardens around the planters' bungalows are generally very interesting, furnished with highly coloured Iresines, Alternantheras, and Coleus, as well as Pelargoniums, Fuchsias, Gardenias, Roses, Crotons, Hibiscus, and others too numerous to mention. Fine hedges are formed with Roses, Lantanas, and Datura sanguinea, and the various species of Thuia thrive remarkably well. All the bungalows on the Ouchterlony property, which is upwards of 50,000 acres in extent, are well built with burnt bricks and sawn timber, the total number of coolies working on the various estates often exceeding 8000 in number, and altogether over 4000 acres are already under Coffee cultivation, extension being made annually. Unfortunately this

fertile region has lately been the source of much troublesome litigation, owing to the disagreements of the various partners interested therein, in consequence of which it is under the ruling of the High Court of Madras, which conducts all its affairs through the medium of a receiver and manager. *W. J. Kemp.*

The Flower Garden.

The work in this department now consists chiefly in maintaining neatness and perfect order; to ensure this the various details of labour should be regularly and frequently performed, such as mowing, sweeping and rolling turf; shearing verges, weeding, sweeping and rolling walks; clipping hedges; weeding, stirring the surface soil, and mulching the beds with thoroughly decomposed manure, leaf-soil, cocoa-nut fibre, or other similar materials; clipping, pegging, pinching and tying the various plants into the required forms and designs, and where the beds are strictly geometrical and the carpet system of bedding is adopted, special care should be taken to keep the outlines of the patterns strictly accurate, and this cannot be effected except by daily attention in pinching, pegging, and training.

To accomplish this properly during the busy season requires a sufficiency of labour with which, in these days of economy, few gardens indeed are well provided, hence the necessity of adopting a method of bedding, which while being quite equal if not superior to that already mentioned, in effect, does not entail so much labour in its maintenance. To this end the more liberal use of flowering plants associated with those of elegant habit, fine-foliaged plants, annuals and perennials, as well as the late flowering bulbs such as Lilies, Gladiolus and Tigridias, so as to ensure sufficient variety and produce effects which shall be more graceful and pleasing, and at the same time assist in toning down the too brilliant colours, seems to be the system yearly increasing in favour and popularity.

Although slight disadvantages may attend this system, and although in late autumn it may be not inaptly termed "wild and weedy"—at which time the carpet beds are at their best—yet it must be admitted, on the other hand, that the latter does not in the summer months present nearly so gay and attractive an appearance as the latter, nor do carpet beds at any time lose that extreme sameness and formality which quickly satiates and dissatisfies the frequent onlooker. To do these mixed borders justice they require liberal treatment, not only when making their growth, but also when in bloom, not only by occasional dressings with rotten dung and artificial manures on the surface, but also by occasional soakings with liquid manure. By these means the quantity and quality of their bloom is increased and improved, the period of their flowering will be considerably extended, and the brilliancy of their colours considerably intensified.

Roses now require daily attention in clearing off old blooms, thinning successional buds, and more especially in destroying insects, mildew, and other pests immediately they appear. Aphides have been unusually plentiful this season, and unless destroyed instantly they soon cause great injury to the young shoots and buds. Tobacco-water syringed over the plants will disperse them, but this neither improves the appearance of the flowers nor the foliage. After frequent trials with clear water syringed overhead in the evening at a temperature of 135°, I feel assured no better antidote to this pest need be sought for, nor are the expanded blossoms at all injured thereby. Mildew can only be arrested out-of-doors in dry weather, and when in an early stage of development; for this purpose, sulphur dusted over the foliage in such quantity as to be plainly visible, and allowed to remain for at least two days, will effectually check its progress. If from any cause it is removed during that time, the operation should be repeated.

Lawns and Shrubberies.—The former should be regularly rolled and mown, but if in dry situations the least sign of brown turf is visible, the mowing machine should be dispensed with for a time, and the scythe only used to remove the quicker growing coarser grasses as they appear above the ordinary level. Where the early flowering shrubs, such as Rhododendrons and Azaleas, have finished blooming, the dead blooms and seed-pods should be removed. This operation will strengthen the plants and greatly improve their appearance. Moderate thinning and pruning, so as to prevent undue crowding, may still be practised, but on no account do this severely at this season, otherwise the effect will be very objectionable. Maintain the strictest cleanliness and order, neither allowing weeds nor dirt to accumulate, nor permit dead branches or leaves to remain so as to offend the eye where everything should be bright and pleasing. *T. S. C.*

The Kitchen Garden.

Onions.—From the middle to the 24th of the present month will be a good time to make the first sowing of Onions to come into use in April and May next; and again about the middle of next month, for use in June and July. In cold districts the first sowing should be made at the beginning of next week, and in order to secure the best possible results a dry and rather light soil should be selected in preference to a damp and heavy one, and the site should be well exposed to the south and west. The ground should be liberally manured and deeply trenched, and afterwards it should be trodden all over, and then roughly raked, and after receiving a good surface dusting of soot should be again raked—this time evenly, and with a finer tool. The drills should be drawn 12 or 15 inches apart, and 1 inch deep. The seed should be sown somewhat thickly and covered, and be finished off in the same way as spring-sown Onions, the after-treatment being identical with that given to the latter. The young plants can be thinned out when necessary, as required for salading in the autumn; they should, however, be left sufficiently thick in the rows to make allowance for mishaps during the winter months. The varieties most suitable for this sowing are the Queen and Early White Naples, and these come into use in the order in which their names appear. The Red and White Tripoli and Giant Zittau, if sown, as already stated, in the middle of August, will make a good succession. The result of these sowings will fill the blank that would otherwise most probably occur between the bulbs of the preceding and current year's growth, through that of the former becoming flabby, and consequently of little value for culinary purposes, from the bulbs starting into growth in May and June.

Celery Planting, &c.—The principal plantings should be made as soon as the ground is available for the trenches to be got out in the way detailed in a former Calendar, and before the plants become too large in the nursery bed, as in that case they would be subject to a severe check in the process of transplanting, and subsequently to "piping." The earlier plantings will now require to be earthed up by having a little of the soil from the ridges on either side of the plants cut down with the spade, and then with the hand placed around the plants, taking care in doing so that the soil does not get into the hearts of the plants. But before this operation is proceeded with the plants should have a few of the outside leaves, with any suckers that may happen to have sprung from the crown, removed. Celery being a moisture-loving vegetable, the plants during dry weather should have liberal and frequent supplies of water at the roots; and Peas, late sowings of which should be earthed up, sticked and mulched with rotten dung as soon as the haulms are high enough. Beans, Cauliflowers, &c., will also need seeing to in this direction. Shallots and Garlic bulbs should be taken up as soon as they have completed their growth, and be stored away in an airy loft when dry.

Parsley Sowing.—This will be a good time to make a sowing of Curled Parsley in a warm border, and where part of it can be afforded a little protection during the presence of frost or snow, so as to be able to obtain a daily supply of fresh Parsley for garnishing, &c., irrespective of the adverse weather. If the ground destined for this purpose is not vacant at the time the seed should be sown there need be no embarrassment experienced on that account, as a small patch of it (a square yard or two) sown at the proper time, and the necessary number of seedling plants subsequently transplanted in rows 12 or 15 inches apart and 6 or 7 inches from plant to plant in the rows, as soon as they are large enough to handle and the ground is ready, will answer the purpose just as well as if the seed had been sown in drills, in the ordinary way, and the plants afterwards thinned out to the distance above indicated in the rows.

The Mushroom-house.—Any spent beds which are still in this structure should be removed forthwith, the house limewashed, and woodlice, which are sure to be present in the old beds, destroyed, by pouring boiling water over them. Horse-droppings should now be got in readiness for the formation of fresh beds for the winter supply. In preparing the droppings care should be taken to see that the ammonia in the same is not wasted in the process of drying. The droppings should be spread out thinly in a dry shed, but not exposed to the sun, and be turned over for a few days until sufficiently dry to prevent rapid fermentation ensuing; and when the droppings have become moderately dry, not parched up, they will be in a fit state for taking into the Mushroom-house. There they should be allowed to remain, and be turned over for a few days, as the droppings will undergo another fermenting process in the house before being beaten down, which should be done as firmly as possible, and a test-stick or two put in the beds. One good-sized bed will be enough at a time, and when the heat, which should be ascertained by a ground thermometer, has declined to 70°, the spawn, which should be broken into pieces about the size of bantams' eggs, may be inserted under the surface of the bed 6 or 7 inches apart, and a little fresh droppings spread over it; and when it has been ascertained that the heat in the bed is not likely to rise above 70°, it can be covered over in the usual way with maiden soil, which should be beaten firmly together with the back of the spade, and in order to do this the soil should be sufficiently moist at the time of putting it on the bed to yield to the pressure of the spade. *H. W. Ward, Longford Castle Gardens, Salisbury.*

The Hardy Fruit Garden.

Those who have followed our advice in a previous Calendar, and mulched their Strawberries and bush fruits, will now see the advantage of so doing, by the plants better withstanding the drought and almost tropical sunshine to which which we are daily exposed. The Strawberry season will be a short one, on account of the heat, therefore encourage those on north borders by a liberal soaking, and even Cherries planted last autumn in the same situation, will need attention in this respect. There is no difficulty in arranging the netting to cover the wall and the border at the same time and to protect both crops. Black Currants will be ripe enough for preserving in many districts, and in gathering this and every other fruit for preserving it should never be allowed to get dead ripe; when this is the case, the fruit loses its briskness and the jam is flat. Let Raspberries be gathered up quite close every Saturday, for the quiet of Sunday gives the birds a double advantage unless this is done. The Apple crop from now onwards suffers from the saw-fly, the purple weevil, the codling moth, and other insects in all cases eat the heart of the young fruit, causing it to drop and sometimes in serious quantities; where this is the case they should be picked up daily, and be burned, to lessen their numbers next year. Wood-lice and earwigs are most destructive in dry, warm localities to Apricots and Peaches, tapping the finest fruit; bean-stalks stuck in amongst the branches and blown out daily into scalding water, or small garden pots filled with hay, will materially lessen their numbers; and if ants are numerous, guano strewn in their runs will drive them farther afield. Fill a sufficient quantity of small flower-pots with soil and place them in the Strawberry beds, and on these place the most promising runners, for the purpose of getting plants to form a new plantation, preferring those which have been fruitful to layer from. There is more in this than is generally supposed. Cut out superfluous shoots of Morello Cherries, and lay in those best placed for next year's crop, taking care to retain plenty of those near the stem and centre of the trees, otherwise they will get bare and unsightly. *J. Rust, Eridge Castle, Sussex.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 15	Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	July 16	Darlington Rose Show. Flower Show in Jephson Gardens, Leamington Bedford Horticultural Society's Show Sale of Imported Orchids, at Stevens' Rooms.
THURSDAY,	July 17	Rose Show at the Mansion House, E.C. Carlisle and Border Counties Horticultural Society's Show (two days). Sale of Messrs. Maule's Orchids, at Stapleton Road, Bristol, by Mr. J. C. Stevens.
FRIDAY,	July 18	Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	July 19	National Rose Society's Show, at Manchester.

WITHOUT in any way wishing to detract from the interest attaching to the Health Exhibition—which, indeed, grows daily—we may yet express the opinion that those who wish to exhibit a healthy condition in their own persons are more likely to obtain the desired result in the garden or in the country than in the hot and crowded galleries at Kensington. Some there are who are so fortunate as to be able to escape from the *fumum et opes, strepitumque Romæ*, and still more fortunate those who can enhance the delight of their holiday by the pursuit of some cherished hobby. We have no wish to proclaim our own particular weakness as the one of all others to give delight and refreshment to a weary brain, but at least we may testify to its good effects on all like-minded with ourselves. Hence, in these days of rambles in search of health, and especially in quest of plants, it may not be inappropriate to call attention to some of the approved methods for introducing into our gardens the gems which cause such pleasure when we meet with them in the mountain pastures.

As a rule, only moderate success results from these efforts to introduce the alpine denizens. The plants either die outright or lead an enfeebled existence and eventually succumb. The reasons for this are neither few nor difficult to appreciate. Perhaps the sustained power of endurance possessed by some plants is the more wonderful. Of this we have an illustration before us as we write.

The delicious little tufts of Sempervivum arachnoideum in the rocky clefts at Zermatt were so tempting that it was as hard to resist collecting them as it would be to a child to resist the temptations offered by a plate of Strawberries. Boxes were filled, and when their capacity was exhausted pockets came into requisition. And now for our tale of endurance. Many months, six at least, after the plants had been gathered, one of these said pockets, undisturbed after arrival at home, chanced to be examined, and in it was found a little tuft of the Sempervivum in question—apparently none the worse for its long seclusion. In fact, it looks worse now that it has been for some weeks under apparently healthier auspices than when first disinterred!

This poor little Stonecrop affords also an illustration of the difficulty that exists for the ordinary tourist, constantly on the move, to collect and transmit healthy specimens. No doubt our experienced correspondent, M. CORREVON, is amply justified in giving the preference to plants raised from seed, and we had the opportunity of judging for ourselves of M. CORREVON'S success at the Botanic Garden, Geneva, from which establishment he has since migrated, to undertake the direction of a "Jardin d'Acclimatation" in the same city. Nevertheless, as M. CORREVON himself admits, there are certain plants which it is more convenient to transplant than to grow from seed, such as Ferns, Lycopods, Heaths, Pyrolas, Orchids, and others of slow growth, as well as certain other plants the seeds of which are difficult to procure and difficult to raise.

In selecting plants for transplantation M. CORREVON recommends that, where possible, the plants should be removed from a soil the conditions of which offer facilities for the removal of all or the greater part of the roots in an unmutilated condition. As a rule, young specimens alone should be collected—strong tufts rarely transplant well, and flower indifferently. The newcomer must grow to his work. It is, however, difficult sometimes to find young plants, as in the case of Azalea procumbens, alpine Rhododendrons, Dryas octopetala, &c. Seedlings of these are rarely found among the old plants, but in separate colonies, at a distance from the parent plants, and where they constitute, as it were, miniature forests of their own. M. CORREVON mentions in a letter before us having found strong seedling plants of Azalea in moist peaty soil in the clefts and holes of the rocks, especially in those known as "lappiaz," which are hollows in the limestone rocks hollowed out by water or ice.

As to the plants of the alpine meadows and pasturages—the Gentians, the Primroses, the Silenes, &c.—young plants are easily found around the parent tufts, and as easily collected; but the case is different with true rock plants, which thrust their roots to great depths in the clefts of the rocks.

Success in transplantation mainly depends on the period at which it is done. If plants are uprooted when in flower they are almost certain to succumb, or to dwindle, when removed to another spot where the climatal conditions may be widely different. The poor plant in such cases is first of all mutilated, and then grown under strange and more or less unnatural conditions. No wonder if it fail in the struggle against such an untoward combination of circumstances.

M. CORREVON recommends the period immediately after the ripening of the seed as that which is best adapted for transplantation. The plant is then comparatively at rest, and is less injuriously affected by removal. August and September are, therefore, good months to select for this purpose, although some spring-flowering plants, as Gentiana verna, Soldanella alpina, &c., may be removed earlier, say in July. During their transit from the mountain-side every precaution should be taken to prevent the plants from flagging. We have ourselves successfully transplanted alpines in closed bottles, which thus become so many WARD'S cases.

On arrival at their destination the plants should be placed in a moist, sheltered situation, and then planted in suitable soil in the locality selected as best adapted for their requirements. In some respects our moist climate and vapour-laden atmosphere offer greater facilities for successful transplantation than does the transfer from the wet but sunny mountain-side to the dry and scorching atmosphere of Continental gardens.

—— PAPAVER UMBROSUM.—Whether this (fig. 13) is anything more than a variety of the common field Poppy, P. Rhœas, may well be doubted, but this is a matter of indifference to most people, who will be contented to take the plant on its own merits without prying too inquisitively into its origin. The brilliant crimson colour of the petals is set off by a large blotch of shining black, which produces a most striking effect. Müller tells us that the common field Poppy contains no honey and is moreover to a large extent, though not exclusively, fertilised by its own pollen. Assuming this statement to be correct it is obvious that the presence of the blotch is likely to be of benefit to the flower or to its offspring, by the invitation it holds out to insects. Müller tells us that the flowers of P. Rhœas are visited by pollen-eating insects, only as there is no honey for those who are partial to that substance, it would therefore be interesting if any reader who has the umbrosum Poppy in bloom would observe whether honey is formed therein, as the presence of the blotch would lead us to infer must be the case. The fleeting nature of the flower which BURNS alluded to when he declared that

> "pleasures are like Poppies spread—
> You seize the flower, its bloom is shed,"

is obviated by the abundant succession of flowers. As an annual of the easiest possible culture, this plant may be recommended with safety to the humblest cottager, who with it may produce an effect not to be excelled by those who array themselves in purple and fine linen.

——A VINE CONGRESS AT CHISWICK.—From force of circumstances, not altogether to be regretted, comparatively little has been done for practical horticulture in general, and gardeners in particular, at South Kensington this summer. This circumstance leads us to throw out a suggestion for consideration—that a meeting of practical horticulturists be arranged at Chiswick in the coming autumn. As there must be some inducement to come, we would suggest an exhibition (not competitive) of various Grapes, with a view to ensure correctness of nomenclature, the bunches to be accompanied in all cases with samples of the foliage. A conference might be arranged to discuss subjects of never failing interest to gardeners connected with Vine culture, such as the construction of borders, the cause and prevention of shanking, the various methods of training, the management of pot Vines, and anything else connected with the Vine. We do not pretend to have elaborated any scheme, but we make the proposal in the assurance that, at least, it is worthy of consideration.

—— ANOMATHECA CRUENTA IN EAST TROPICAL AFRICA.—Mr. W. MITTEN, the eminent bryologist, has just raised Anomatheca cruenta from seeds brought by Bishop HANNINGTON from the Usagura Mountains. The tropical specimens agree precisely with the Natal plant, as figured in *Bot. Reg.*, t. 1639.

—— PHYLLOXERA VASTATRIX.—There are at the Health Exhibition, south gallery, at the Austro-Hungarian stand, the "Weinlaube," some specimens of this insect in several stages of development on roots and foliage. These should be of interest to cultivators of the Vine in this country, as they frequently are alarmed by the quite innocent but abnormal appearance on leaf and root of their plants, and here there is the chance of becoming optically acquainted with the devastator. The stand is the property of the Government School of Lower Austria for Pomology and Viticulture at Klosterneuberg—a "berg" which grows some of the choicest wine to be found in the country.

—— BEWARE OF MILDEW.—It is scarcely necessary to say that fungoid parasites differ in their requirements in the matter of moisture as do other plants; some, like the dreaded Potato devastator, need a hot reeking atmosphere to bring their spores into active growth; others, like the moulds that attack Peas, Roses, and various other things, are most destructive in their effects in dry seasons when the atmosphere contains little moisture, and when the plants on which they thrive are languid through wanting enough water in the soil. It is thus that in dry seasons like the present, perpetual Roses often so far fail, after the first bloom is passed through the attacks of mildew, as to do little towards maintaining the character they have for successional flowering; and when the rows upon which rest the hopes of having Peas so late in the autumn that they are then even a greater rarity than in the early spring get their leaves white with mould, there is small chance of much crop, for even if plenty of moisture subsequently falls from the clouds the mildew once fairly established holds its own. The best preventives to parasitic attacks on Roses and Peas are plenty of root moisture, with equally sufficient manurial sustenance; where both these are abundantly supplied the mould is much less likely to put in an appearance. Copious drenchings of the roots, with mulching to diminish evaporation, are requisite; where these essentials are deficient, and the want is not promptly made good, there is not much prospect this season of late Roses or late Peas.

—— VINE ROOTS IN DRY SEASONS.—Those who are well versed in Grape growing are not in need of being reminded about the quantity of water which



Fig. 13.—Papaver umbrosum. (see p. 48.)

healthy Vines in full vigour will not only take, but must have, during the growing season, particularly whilst the formation of shoots and leaves and the swelling of the fruit is going on. But there are many engaged in the cultivation of this fruit whose years, or experience, are insufficient to enable them to fully understand the wants of Vines in this respect; beyond this so much has been said and written as to half the ills that affect Vines being attributable to the roots being wet, that a mischievously erroneous impression often prevails on the matter. Those who for any length of time have annually had an opportunity of seeing the results of Grape cultivation in numbers of places in various parts of the kingdom, where the rainfall varies in amount, from that which occurs in the southern counties to double or more, know that, soil and treatment being equal, there is much less shanking met with in the moister localities, with better finish in the matter of colour than in the drier districts—further than this, the Vines last longer. This points to the necessity of giving more water to outside borders in such seasons as the present, when all the conditions tend in one direction, that is, to an exceptionally dry state of the soil; for it is necessary to bear in mind that not only has there been much less than the usual amount of rain in most parts of the kingdom during the present summer and spring, with the consequent drier condition of the air daily drawing a more than ordinary amount of moisture out through the countless pores of the leaves of strong vigorous Vines, but, in addition to this, the soil, both surface and substratum, was very much drier to commence with at the end of winter than usual, the outcome of which is such that unless water is given in proportionately greater quantities the want will tell its own tale on the late crops. With fair drainage there is little danger of overdoing the work by giving too much. In cases where the soil in which the roots are placed is at all poor, manure-water of some sort will be of much use, and covering the border with fresh horse-droppings before applying the water will be equally beneficial.

—— INDUSTRIAL TRAINING.—"The Englishman has yet to learn that an extended and systematic education up to and including the methods of original research, is now a necessary preliminary to the fullest development of industry." These words were quoted at the opening of the new Technical School at South Kensington, and they apply with singular force to horticulture. With a few exceptions, there are no means and resources in this country open to young gardeners desirous of learning the principles of their profession. The state of horticultural literature evidenced by many of the books which appear in the market, however excellent from a practical point of view, is from that of scientific principles simply scandalous.

—— SUBTERRANEAN SEED-VESSELS.—There are a few cases—of which the Cyclamen, Trifolium subterraneum, and Arachis hypogæa are perhaps the best known—in which the unripe seed-vessel is thrust into the ground, there to mature its seeds, place them out of danger from predatory birds, and sow them in the most favourable conditions for germination. A short time ago, in uprooting a common Primrose which had come up as a wilding in a frame intended to be used for the growth of Vegetable Marrows, we were surprised to find, in addition to a number of seed-pods borne on erect stalks of the ordinary character, some five or six which were buried some 2 inches deep in the soil, owing to the downward curvature of the stalks. The capsules, instead of being dry and more or less membranous, were soft and succulent, although so thin that on exposure they rapidly became dry, so that after a short time, but for the curvature of the stalks, nothing particular would have been noticed. We are not aware whether this peculiarity has been noticed before in the Primrose.

—— NEW TUBEROUS-ROOTED BEGONIAS.—One may well ask, What is to be the future of this popular flower? What an advance in point of size and substance could be seen in the flowers of the new varieties shown by Messrs. LAING & CO., of Forest Hill, at a recent meeting of the Royal Horticultural Society. Some of them must have measured from 5 to 6 inches in diameter, they were stout in proportion and of the finest form. The most enthusiastic believer in the possibilities of the tuberous-rooted Begonias ten years ago, could scarcely have anticipated such a development in 1884. The two fine varieties awarded First-class Certificates were characterised by striking novelty of character; they were Her Majesty, white, or the most delicate flesh, with a regular and well defined margin or edge of bright pink—very distinct and pleasing; and Torey Laing, deep gold shaded with orange—a decided advance in respect of this colour. Lady Chesterfield, pinkish-rose; White Perfection, pure white—very fine; Lord Crewe, brilliant crimson; and Fireball (double), bright scarlet, were very fine also, but the flowers of some of them had unfortunately become damaged in course of transit to South Kensington. The Begonia will soon, if it does not already, rival the Pelargonium as a subject for exhibition. Of its decorative value there can be no possible cause for doubt.

—— A BEEKEEPERS' ASSOCIATION FOR MIDDLESEX.—An effort was made rather more than a year ago to start a county association, the headquarters being at Ealing, and the Association under strictly local government. This being found altogether inadequate as a fair representation of the county, a representative meeting of beekeepers and others interested in the work took place recently in the rooms of the Society for the Prevention of Cruelty to Animals, Jermyn Street, the Hon. and Rev. H. BLIGH, Vicar of Hampton, in the chair, the Rev. H. R. PEEL, of the British Beekeepers' Association, being also present, there being a good attendance of those interested in the movement. The Chairman stated that while there was a county association in nearly every one of the counties of England and Wales, there was none in Middlesex. He recommended such an extension of the Association as would make it county in fact. It was the business of the British Beekeepers' Association, whose assistance they had on this occasion, to work up the counties; the county association would act on the districts, and the districts set beekeeping going in the parishes. The Chairman trusted one result of the formation of the Association would be that a honey market would be opened in London similar to that at Reading. In reference to this market it was stated that it had proved most successful under the management of the Rev. H. V. MOYLE, and that Messrs. HUNTLEY & PALMER, the eminent biscuit makers, had commenced the manufacture of honey drops, a small biscuit in which honey was employed instead of sugar, and that they could use 2 tons of honey weekly. New rules were adopted, and an influential committee formed. The secretary is Mr. FOX KENWORTHY, of 55, Coleman Street, E.C.

—— MANURE WATER FOR POT PLANTS.—The advantages of manure, applied in a liquid state, whereby nutriment is at once put, as it were, within reach of the feeding roots of plants, are well known. But its use is presumably not always carried so far as with advantage it might be. There are few things that are not benefited by it, especially when their roots are confined within the limited space of a pot, where necessarily they have no chance of feeding for themselves in the way open to them when they can spread out as is their nature. One advantage in applying manure in this way, rather than in a solid form intermixed with the soil at the time of potting, is that in the latter way, if enough is given to sustain the plants so long as the roots are to remain in the soil within the pot, more must be used than is well for them to have access to all at once. With such plants as require liberal feeding the double course of mixing some solid manure with the potting soil, and of supplementing this with manure-water, is usually followed with satisfactory results. Another of the advantages of using manure-water to as great an extent as the nature of the kinds of plants to which it is given will bear, is that much smaller pots will suffice than where dependence wholly or in a great measure is put on solid manure, as the necessary sustenance can in this way be supplied without more extended root-room. This is especially the case with soft-wooded plants, particularly such as are grown up quickly for flowering in the autumn or winter from cuttings or seeds put in the preceding winter or spring. In all cases where manure-water is to be given, its application should not be so long deferred as to allow the soil to get too poor to keep up free growth, the want of which is sure to tell in the want of size the plants will show, with a corresponding inability to yield the full quantity of flowers they would were their wants better attended to. Quick growing plants need more food to build up their rapidly developed shoots and leaves, and naturally exhaust the moisture in the soil in proportionately little time, requiring the application of water daily, or all but daily, in dry summer weather, the result of the use of which is that much of the manurial elements in the soil get washed away through the bottom of the pots, leaving the roots with insufficient food unless it is supplied to them in the form of surface-dressing in a concentrated form, or by the application of manure-water, the last of which, when given strong enough, but not too strong, for the plants to bear, and at the right time, is the most certain means of having quick growing things in the best condition, and is equally effective with such as are of a more enduring description.

—— WINDOW GARDENING AT WESTMINSTER.—The eighteenth annual flower show, under the auspices of the Society for Promoting Window Gardening among the Working-classes in the united parishes of St. Margaret and St. John, Westminster, took place in the pleasant enclosure of the Dean's Yard on the 3d inst. It may be stated that the operations of the Society extend over nine districts, the two parishes being thus divided for exhibition purposes. The plants were all taken to a school-room in each district, and duly registered on the 27th of May last, and this is done in order that there should be no doubt as to the plants remaining under the care of the exhibitors until the day of exhibition. The plants are then taken to the show-tent, and on delivering the plants each exhibitor receives a number which he places on the pot, and a corresponding number which he retains, and on producing this number at the close of the exhibition the plant is delivered up to him; and no exhibitor can take more than one prize at the show. There was an immense number of plants brought together, and they were arranged in groups according to their several districts, but unfortunately so numerous were they that they were thickly huddled together, and the judges must have had great difficulty in selecting fitting subjects for their awards. One very interesting group was shown by the patients of Westminster Hospital. Fuchsias were largely shown, some trained to home-made trellises, looking like huge kites, and they must have occupied considerable space. They were drawn to a front, as if one side only had been presented to the light. There were very good Creeping Jennies, some capitally bloomed Nasturtiums, Gladiolus (a few), Carnations with single flowers, the variegated Japanese Honeysuckles, Cyperus alternifolius, Virginian Creeper, boxes of Mignonette, Begonias, Sedum acre, plenty of Pelargoniums, good Indiarubber plants, Mimulus, Agave americana, Chrysanthemum frutescens, Houseleeks, Myrtles, Southernwood, Aspidistra lurida, Ornithogalum longebracteatum, and here and there, as if the æsthetic tastes of the day had descended to Brown's Rents or Bakehouse Alley, Sunflowers. Two plants of Sunflower growing out of a carpet of Mignonette, had developed a flower-bud each, but the leaves had died away one by one. The healthiest and best grown plants came from the districts of St. James the Less, Holy Trinity, and St. Stephens. Peabody Buildings came out well, several prizes going to the inmates of these, and this fact seems to say something respecting the value of improved dwellings for the working classes. We wonder whether, in the case of such a competition, the judges take into consideration the character of the locality in which the plants are grown? It must be much more difficult to grow a plant in a darksome crowded alley than in the lighter and clearer atmosphere that surrounds the much more elevated pile of Peabody Buildings. In all respects it was a most interesting exhibition, and hundreds of children visited the show and frisked about on the grass plot, enjoying a romp in the quiet, respectable enclosure of the Dean's Yard.

—— PREMATURE FALL OF LEAF.—An interesting article by Mr. W. G. SMITH on the fungus which is attacking Yew trees in Cornwall, and which is now very actively at work at Sibbertoft, has called my especial attention to the fact that the lawn here is as thick with fallen leaves as it is in autumn. A large Yew tree in front of the vicarage is suffering from the identical fungus, and tens of thousands of leaves are scattered over the subjacent ground. The leaves of Apple trees especially are falling, in a very few cases only, from an attack of the Hawthorn blight, the conidia of the genus Podosphæria, but in the majority of cases from a marked defect of chlorophyll, so that the leaves are curiously mottled. I have, however, observed the same in former years. I find the Sphærella taxi principally on the under-surface of the Yew leaves, and most abundant on the parts where the chlorophyll has either not been exhausted, or better developed—a matter which has been observed in the parasitic Sphæriaceæ, as for example in S. fimbriata. The leaflets of Walnut trees, and even the leaves themselves, are equally deciduous, and, as with the Apple leaves, there is a great want of chlorophyll. In most cases the upper portion of each leaflet is dead and brown, but from what cause I am at present unable to say, as they were not noticed in an early stage of growth, but possibly from a low temperature when young. *M. J. B.*

——"AS HOT AS INDIA."—We have frequently heard lately the opinion expressed that the weather has been "as hot as India." A vague expression, considering that India comprises mountains thousands of feet above the snow line, as well as the parched plains of Sindh or Bengal. Presuming, however, that the speakers generally mean to speak of the lowlands of India, it may be interesting to note, that in 1883, on the Queen's birthday, May 24, the temperature at Madras was 107°.7 in the shade. The coldest temperature in Madras in 1883 was 61°, on December 28.

—— QUEENSLAND.—Under the title of *Contributions to the Flora of Queensland* Mr. P. A. O'SHANESY publishes a reprint of some newspaper articles descriptive of the flora of various parts of the colony, with special articles on Queensland Eucalypts and grasses. As to the latter, the author shows that it is not necessary to go beyond their own farms to find grasses for cultivation better suited to the climate than the introduced grasses. This is a point to which we have frequently ventured to direct the attention of colonists, and we are glad to find Mr. O'SHANESY confirming the view of the importance of endeavouring to develope the natural resources of the country by

selection and cultivation, as well as by introduction of foreign products. The keen eye of an intelligent observer, combined with a little patience in experimenting, will do wonders. We repeat our often tendered advice to colonial societies, to offer inducements in this direction rather than for the importation of European novelties. Mr. O'SHANESY'S chapters are interesting and suggestive, but they greatly stand in need of competent botanical revision, and we demur altogether to the first sentence of the chapter entitled "Epitome of Botany for Beginners" (in itself a misleading title), and which opens thus—"Botany is a description of plants." Mr. O'SHANESY'S own pages show that botany is vastly more comprehensive and useful than that expression would imply. The pamphlet may be had from Messrs. LOVELL REEVE & CO.

—— CHARCOAL FOR PACKING SEEDS.—We are glad to find the Agri-Horticultural Society of Madras confirming our statement as to the inefficiency of packing seeds in charcol for transit on long voyages involving variations of climate. Package in damp mould firmly pressed down is far preferable.

—— UNSEASONABLE BLOSSOMING.—Every year we receive specimens of Pears blooming out of season, and among these Napoleon is the most frequent. The period of flowering is, however, not the only point of interest; another may be found in the circumstance that the flowers in question are formed, not on "spurs," but at the ends of long wood shoots of this year's growth. These flowers are, in fact, formed on this year's wood, and must derive their food from the older branch out of which they issue. They flower out of season because the branch which bears them, instead of assuming the appearance of a spur, lengthens into a shoot. The spur is a reservoir of nutriment destined for a resting period, just as a tuber or a seed is. Such formations therefore indicate a resting period brought about by drought, by cold, or some other cause. It would be interesting to ascertain whether Pears, such as the Napoleon, having this tendency in excess, originated from varieties grown in districts where vegetation is not so subject to checks as it is in this climate; and, again, whether such varieties should not be selected for growth in warm countries. We do not, however, lay much stress on these points, as the common Laburnum is very subject to similar unseasonable flowering. Probably if the hot, dry period we have lately passed through be succeeded by a rainy autumn season we may have to chronicle numerous such cases. But as it is, we observe an instance of a Ghent Azalea in our garden producing a second crop of distorted bloom.

—— "CONSPECTUS FLORÆ EUROPÆÆ."—It is not long since we announced the publication of Mr. NYMAN'S valuable catalogue of European plants, and now we have to record the publication of a supplement containing the Ferns and allied plants, the Charas, and a complete index of species, varieties, and synonyms, which add immensely to the value of the book. Another supplement is promised, for additions.

—— SOLANUM COMMERSONI.—Mr. BURBIDGE kindly sends us a specimen of this plant, lately reintroduced under the name S. Ohrondi. The foliage is only slightly hairy, unequally pinnatisect; the segments oblong, crenulate, the terminal one broadest. The purple flowers are borne in cymes on long slender stalks, the sepals ovate, abruptly acuminate half the length of the purplish lanceolate petals. The anthers open long before the projecting style is ready for fertilisation; the plant offers thus facilities for cross-fertilisation, for there seems to be little chance of the flower being fertilised by its own pollen.

—— NEW MAPLES OF JAPANESE ORIGIN.—These handsome foliage half trees are now in the hands of some members of the nursery trads in considerable numbers, but still are seldom met with in gardens. The fault is with the trade itself, as in its haste to propagate and sell a great many weaklings are disposed of, which perish during the first hard winter, or become so injured that they make no satisfactory progress for a series of years. If such plants come into the possession of a gardener, instead of putting them in permanent positions at once the better plan would be to place them in a sheltered part of the reserve garden or in the kitchen garden, where they could have the very necessary care and protection in winter. Groups of them will get planted in time, which will add great richness of colour to summer foliage in the garden and home park, and also to that of autumn, as Maples mostly die off in beautiful colours, and these Japan species are no exception to the rule. The laciniated leaved section ought to make striking edgings to beds of other shrubs or tall flowers, as they have none of the robustness of the indigenous species, and would bear cutting-in without injury so as to form a regular outline.

—— THE SEASON.—We are indebted to Mr. GLAISHER for the following summary of the climatal features at Blackheath for the last few months :—

Rainfall in inches (six months.)

	Inches.	Average.
January ..	1.77 ..	1.88
February ..	1.50 ..	1.59
March ..	1.37 ..	1.54
April ..	1.12 ..	1.75
May ..	0.94 ..	2..6
June ..	2.11 ..	2.00
	8.81	10.82

Deficiency for six months, 2.01 inches.

The mean temperature of the air for April was 45°.1, being 1° to 2° below the averages of 113 years and forty-three years respectively; it was 1°.7 lower than in 1883, 2°.8 lower than in 1882, and 0°.8 lower that in 1881.

The mean temperature of the air for May was 54°.3, being 4°.8 and 1°.6 above the averages of 113 years and forty-three years; it was 1°.2 higher than in 1883, 0°.2 lower than in 1882, and 0°.2 higher than in 1881.

The mean temperature of the air for June was 57°.6, being 0°.6 and 1°.3 below the averages of 113 years and forty-three years respectively; it was 1°.4 lower than in 1883, 1°.1 higher than in 1882, and 1°.1 lower in 1881.

The mean temperature for the quarter was 42°.3, being 0°.1 above the average of 113 years, and 0°.8 below the average of forty-three years.

The mean high day temperatures of the air in April was 54°.3, being 3°.3 lower than the average of forty-three years; in May it was 65°.8, being 1°.6 higher than the average, and in June it was 67°.2, being 3°.7 lower than the average.

The mean low night temperature of the air in April was 37°.1, being 2° lower than the average of forty-three years; in May it was 43°.8, being 0°.1 higher than the average; and in June it was 50°.3, being 0°.4 higher than the average.

—— ALGIN.—Mr. STANFORD, in a recent paper at the Society of Arts, calls attention to a product from seaweeds, to which he gives the above name. It is a glutinous substance, obtained from various Laminariæ, Fuci, &c., and contains nitrogen. It dissolves in weak alkalies, but is insoluble in boiling water, and does not coagulate by heat, as albumen, to which it is otherwise allied, does. It is used for sizing fabrics, as an article of food, containing 3.7 per cent. of nitrogen; useful for thickening soups, or in the manufacture of jujubes, lozenges, &c.

—— A WARNING AGAINST CHEAP GREEN PEAS.—Dr. MUTER, of the South London Central Public Laboratory, cautions the public, through *The Times*, against certain green Peas which are sold in large quantities at a cheap rate in the poorer neighbourhoods. Samples have been sent in to the South London Central Public Laboratory, both by the magistrate's order and by a private consumer who was attacked after eating them with sickness and diarrhœa. They are affected by a fungoid growth (revealed by the microscope) on the inner surface of the testa or outer coating of the seed. When simply boiled with water they have a sickly pale green colour, with yellowish spots, but when cooked in water containing a little soda they develope deep violet-brown markings, and on keeping give off a pungent odour quite peculiar. Any one buying cheap or shelled Peas would be wise to put a small fragment of common washing soda in the water they are boiled in, and, if the above described appearances develope, reject them without hesitation.

—— A PLAGUE OF APHIDES.—Such springs as that we have recently passed through are proverbial for being favourable to the increase of aphides. The condition to which the young growth of most plants on which they thrive is reduced by the long-continued chilling easterly winds evidently favours their increase much better than the quick vigorous development of growth in genial weather. When the growth of plants is in a languid state the sap is better suited to the requirements of animal parasites of most kinds than when the extension of shoots and leaves is more rapid. This is evident, for a low chilly temperature in itself is by no means conducive to insect development, especially aphides, which show their preference for a genial atmosphere by the way they keep on increasing, even in the winter months, in the kindly warmth of a greenhouse. This spring all the conditions favourable to their appearing in quantities approaching that of a plague were present. We had no frost through the entire winter sufficient to destroy the breeding stock out-of-doors; Roses on walks, and other sheltered places, scarcely ceased growing; an examination of the green prominent buds of many plants on which aphides feed and increase at the latter end of winter disclosed their presence in numbers sufficient to give forecast of what was coming. So ravenous have these plant-lice been in the present season that they have attacked numbers of plants not usually affected with them; the young shoots of Ivy on walls in many places have been completely smothered with them, to the destruction or malformation of the first formed leaves, whilst herbaceous plants of many kinds seldom attacked have equally suffered by their presence. Even weeds of several kinds are swarming with them. As to fruit trees, especially Plums and Currants (black, as well as red and white), their condition is as bad as it could be; in the case of Currants of all kinds the leaves in many places promise to fall before the fruit is ripe, which, coupled with the drought, will reduce its size much below the average. The demand for Quassia amongst the Hop growers is such, we understand, as to have caused the price to run up to nearly double its usual amount. To those who note what occurs in exceptional seasons, and act accordingly, there is always something to be learned, or that which has been before taught further impressed. "Prevention is better than cure." If Roses, and other climbing plants, on buildings and in other sheltered places where the vermin escape through such winters as the past in more than usual numbers, were given, as soon as pruned, a thorough washing with the syringe or garden-engine with tobacco or Quassia-water, Gishurst, or even good drenchings with soapy water from the wash-house, repeated once or twice, not only would the plants on which the insects are lurking be in a great measure freed from them through the spring, but many other things to which they spread would be less affected.

—— THE MILLIONTH OF AN INCH.—One of Sir JOSEPH WHITWORTH'S feats was the construction of a measuring machine designed to ensure the similarity between gauges. So delicate is this machine that it will record differences in size to the one-millionth of an inch. An idea of this infinitesimal measure may be obtained by supposing the thickness of a piece of thin French writing-paper divided 4000 times.

—— HARDY ORNAMENTAL TREES AND SHRUBS.—One of those interesting and instructive exhibits of these plants, from Messrs. C. LEE & SONS' Arboretum at Isleworth, was set up by Mr. WRIGHT, the manager, at the exhibition of the Chiswick and Turnham Green Horticultural Society on the 3d inst. There were a large number of specimens of most valuable and useful things. Set up in an admirable manner, and illustrative of the wealth of subjects at service for the decoration of pleasure-grounds, &c. Among them were Alnus campestris latifolius, finely coloured Golden Elders, Æsculus aurea, Acer Negundo variegata, Castanea vesca aurea magnifica, Quercus Concordia, Acer colchicum var. rubra, Alnus imperialis, Acer Schrœderi, Robinia angustifolia elegans, Alnus glutinosa aurea, Sambucus laciniata variegata, Populus canadensis aurea, Ligustrum ovalifolium variegatum, Persica purpurea, Æsculus laciniatus, Fraxinus aucubæfolia, and Corylus Avellana purpurea. The foregoing by no means exhausts the collection, which was of a widely representative character, and distinctly striking.

—— OUTDOOR VINES.—One of the most remarkable effects of the recent heat has been found in the luxuriant growth made by outdoor Vines, although in a particular instance, in which some half-dozen kinds are concerned, the soil about the Vines has been literally of the dryest, so that surface crops were nearly roasted up. Very largely the soil is exhausted by the roots of larger trees, which penetrate beneath the wall upon which the Vines are growing, and come up and impoverish the surface soil. Yet, in spite of these drawbacks, conditions that might have been expected to check growth in the Vines, they have made splendid shoots many feet in length, and have produced large glossy leafage; yet not a drop of

water have the roots had beyond such as one of the dryest seasons on record has afforded. The Vines are of several years' planting, and therefore do not possess that youthful vigour always seen in plants more recently propagated. We are so very much accustomed to associate with vigour in Vines ample moisture to the roots, that an incident of this kind would seem to show that, after all, the best conditions of culture are not those commonly received. Perhaps Vine roots have power to extract moisture from the soil which many other tree or plant roots may not possess, and rather revel in such root conditions if the plants themselves are in ample warmth. The most successful results of Continental Vine culture are doubtless found where the greatest warmth and protection are associated with ample root-space and very free drainage in the soil. That we may ever again see in this country a return to the old wine-producing days is improbable. Such a season as the present may give to us all the conditions we desire, but two such seasons may not be anticipated in succession; perchance the next one may be wet and cold—the very opposite of the present.

—— PENTSTEMONS.—We find in these biennials—indeed, they might almost be termed annuals and perennials also—a class of border flowers always much fancied, yet not widely grown. It may be that some of this lack of common culture is due to the comparative absence of that robustness which will carry the plants safely through a hard winter; or perchance too largely the colours of the flowers have not always been of a striking kind, and perhaps something is due to the fact also, that these are not well adapted for cutting. On the other hand, a big bed of Pentstemons, when in bloom, as the plants now are, forms a very interesting and exceedingly pleasing feature in any garden, and in good holding soil the bloom is for a long time continued. We can get a good show of Pentstemons from seed easily, and if seed be sown under glass in March, so that the seedlings may be planted out early in June, a very fine show of bloom will result in the autumn, such as cannot be too highly prized. Then, should the winter prove generous, the following season will give a remarkable abundance of flowers, and many plants may continue to exist for a lengthened period. Still, so easily can seedlings be raised, and so well do good kinds reproduce good seedlings, that no plant need be retained longer than the second year, whilst exceptionally good kinds may easily be perpetuated through cuttings. No doubt, in the past, we have endured too much in the Pentstemon of these dull heavy red or purplish-red tints, that kept the flowers from being regarded with favour. Now, we may not only have plenty of very charming, bright, pleasing hues of colour, but very fine flowers with either pure white or elegantly pencilled throat, and produced on large bold spikes. It is a good time to sow seed now for the production of bloom next year.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 7, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has varied greatly in different parts of the kingdom. In most of the English districts it has been fine and warm, though towards the close of the period some sharp thunderstorms and heavy local rains were experienced. A thunderstorm occurred at the same time in the south of Scotland also. In Ireland and the west of Scotland it has been cloudy or dull, with rather frequent falls of rain, while in the east and north-east of Scotland a thick wet fog or mist has prevailed. The temperature has been about equal to the mean in "Scotland, E.," but from 1° to 4° above it in all other districts. The maxima were generally registered on the 4th, and varied from 69° in "Scotland, E.," to 86° in "England, S.," 87° in the "Midland Counties," and 88° in "England, E." The minima, which were recorded during the earlier days of the period, ranged from 42° in "Ireland, S.," and 43° in the "Midland Counties," and "Scotland, E.," to 51° in "England, N.E.," and 54 in the "Channel Islands." The rainfall has been a little less or about equal to the mean in "Scotland, N.," "England, E.," the "Midland Counties," "England, S.," "England, N.W.," and "Ireland, S.," but more elsewhere. Bright sunshine shows a marked decrease in "Scotland, E.," and a slight decrease in nearly all other places. The percentage of possible duration varied from 54 in the "Channel Islands" and 52 in "England, S.," and "England, E.," to 22 in "Ireland, N.," and 8 in Scotland, E." Depressions observed:—Beyond a few shallow "thunderstorm" depressions which passed over our islands during the latter part of the period, and a deeper disturbance which moved northwards over the west of Ireland on the 7th, there have been no depressions worthy of notice. Barometric readings have been, as a rule, exceedingly uniform, and the wind generally light and variable on all our coasts.

HOME CORRESPONDENCE.

Papaver Hookeri.—Seed of this showy annual was kindly sent to me by the distinguished botanist whose name it bears. It was sown in the open ground under a south wall in April, and is now in full flower. It grows from 2 feet to 3 feet high. In general appearance the plant is not unlike the common field Poppy (P. Rhœas), but the leaves are more slender and the branches more upright. The flowers in size and shape come very near those of P. Rhœas. The colour is most varied—from dark red to light rose and white. Some are quite single, and some the fullest double. The double rose and white are the most attractive, and I am marking the best flowers, from which I shall save seed, to see whether a large proportion of the seedlings follow the colour and habit of the parent. *C. Wolley Dod, Edge Hall, Malpas, Cheshire, July 3.*

Notes from a Buckinghamshire Garden: *June 29.*—In the clear darkness of these June nights a strangely lovely sight may be enjoyed on the lawn under the old Acacia tree. Millions of fallen blossoms whiten all the turf. From a little distance one would think it to be a sheet of snow that lies so white around the tree, melting into grey at the edges. Nearer it is snow no more—it is a veil of the richest lace. The pattern is intricate and very delicate, yet none can doubt that a true pattern there is of the most beautiful design; others who come to see it feel at once as I do—that this is no scattering anyhow of Acacia blossoms, but that the little Pea-flowers have formed as they

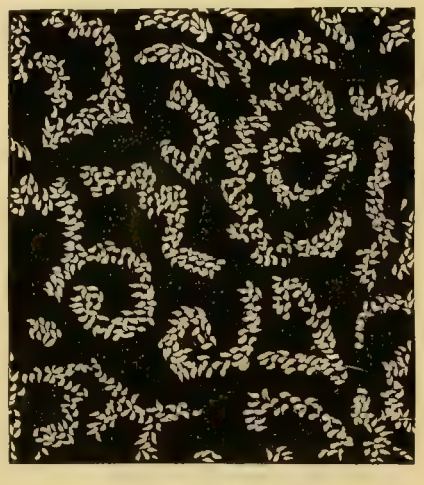


FIG. 14.—FLORAL PATTERN.

fell into bosses and leaves and parallel lines of perfect symmetry. Old Spanish lace, or Flemish point, are often seen of a pattern whose outline (for the outlines are not filled in as with lace) might be compared to this very flower-lace in miniature. There is the same kind of design also sometimes in Indian rugs, or in the older work of Persian looms. As the darkness deepens upon the dusky grass more vividly glows out the pure white flower pattern. I have tried to trace something like it on paper, but find the task of copying in the dark to be well-nigh an impossibility. With the morning light comes a change and a sad falling off. Snow, and lace, and Persian tapestry, have somehow gone away—nothing remains but a thin covering of shrunken, faded Acacia blooms upon the grass. One can scarce believe that, with the evening shades, will certainly again appear in perfect whiteness, distinct and fair, the lovely tracery of flowers. Again at nightfall the same attraction draws me to the same spot on the lawn under the old Acacia, and once more I try to preserve with paper and black chalk some clumsy record of its wonders. And more than ever am I curious to know if it is all chance—if, as some would have one believe, it is only the natural inclination of the human eye to form patterns out of nothing particular; or if by some fixed law of Nature petals and blossoms must, as they rain down from the tree, softly drop into symmetrical patterns, in the same way as snow, in greater perfection, has to crystallise into stars and wheels and diamond shapes; or as frost upon a window-pane, in never-ending variations of exquisite inflorescence; or as sea-sand arranges its myriads into circling patterns under the tremulous influence of music. Other blossoms are observed to fall in patterns; the Gum Cistus casts bold lines of tesselated pavement on the grass, and Apple blossom falls petal by petal into shapes and lines, but none, I think, approach in grace or finish the beauty of these Acacia patterns. *E. V. B.*

The Royal Horticultural Society's Winter Committee Meetings.—It has often occurred to me that these are twice too few, being one month between each, and I have at last determined to publicly ask my brother Orchid growers to help me in making a petition to the Royal Horticultural Society to hold its meetings of Floral (if not Fruit and Scientific) Committees twice a month in winter, as in summer. There are many, doubtless, who would have had plants to exhibit for certificates of the various denominations had there been a second meeting in each month, who, like myself, have been obliged to wait another year for it, and then, perhaps, some one else blooms another plant, and gets it noticed before the owner who bloomed it a year previously. Personally speaking, I have two years in succession bloomed a plant in January, just too late to catch the meeting, and, of course, in a month the flowers were faded and utterly unfit for exhibiting. This is experienced by many I know, and if they and all others will write to me who approve of the action I purpose to take I will get a petition formulated and send it round to them for their signatures, begging the Society to commence with 1885 by holding fortnightly meetings of the various committees throughout the year. In the interest of all concerned, and those of the Royal Horticultural Society itself, I think it would be a great step forward. I take the opportunity of using your valuable paper for the purpose of addressing those interested in horticulture generally. I hope that those most interested in fruit culture will also second me; if they do I shall be very much gratified to see I have struck their nail on its head: if not I shall be sorry and growers must try alone. *De B. Crawshay, Rosefield, Sevenoaks, Kent.* [The committee meetings are not held so frequently in the winter months because the number of subjects that would be brought forward is not large enough; besides, even committeemen require some cessation from labour, and some reduction in the strain on their pockets. ED.]

The Souvenir de Malmaison Carnation.—Your account of Mr. Leopold de Rothschild's Malmaison Carnations is most interesting, and I trust will induce others to raise this charming flower in quantities. I have myself about 300 plants now in full bloom and intend leaving them uncut until the 17th inst. for a bazaar in the Duke of Wellington's Riding School, in aid of the Kew church. We have grown Malmaisons for ten years in great quantities, indeed I fancy Mrs. Villebois and ourselves were almost the only growers; hundreds and hundreds of plants have been given away, but the attempts of our friends to cultivate them have certainly not been successful. The truth is, the plant has been too much coddled; it is essentially a cold-house plant, indeed were it not for the loose calyx, it would do better out-of-doors. The great secret of its cultivation is drainage; a couple of worms in the pot will destroy the labour of months; for this reason I employ soot-water all the year round: they require constant and careful watering during the summer, and neglect in this respect will show itself by the presence of a green centre. Mr. Jennings is quite right in propagating from layers only; but I know from experience that he is wrong in thinking that plants a year old give the best result in flowers: they take of course less room, but though I propagate every year, I always fill the centre of my house with four or five-year-old plants, and these are now smothered with bloom. I stand the plants out-of-doors from the middle of August to the middle of September, and repot in September. Alas! my house is only a span-roof, 20 feet long, while Mr. Jennings' is 40 feet; but if his blooms are twice as big as mine I should like to see them. By keeping a certain number of old plants the necessity for a centre stage is avoided, and the big plants stand on the ground. The reasons for failure in the treatment of this plant are so obvious that were it not for my fear of trespassing on your space I could ensure perfect success in the growth of them to any one with space enough at their command. *M. L.*

Alströmerias.—The dry parching weather, which is causing nearly all other flowers to wither and perish, is just suiting Alströmerias, as never before have I seen them in a higher state of perfection, which shows the valuable things they are to grow for making a fine show, or for cutting from at this season. Why so many fail with them is through planting them in unsuitable positions, as they require full exposure to the sun, with sufficient shelter to prevent injury from spring frosts and keen winds, which damage the young shoots as soon as they make their appearance when they are tender, and it is a good plan, therefore, just before they protrude through the ground, to give a surface-dressing of sifted leaf-soil, cocoa-nut fibre, or anything of that kind that will be light and loose. A mulching, too, of similar material put on in the autumn and left during the winter

is also a great help, as though considered hardy, Alströmerias are only really so through having their roots deep down, and if they cannot penetrate to a low level their tubers are sure to perish after very sharp frosts. The best situation for the plants is a sloping border facing south, and if backed up by a wall or close fence it will be all in their favour. The way we prepared the beds for ours was by digging out the earth a yard or so in depth, and then draining the bottom, when, after mixing some leaf-mould and sand with the soil dug out, it was returned and the plants put in 6 inches below the surface, after which they were well watered to give them a start. Although all this labour is necessary, and was bestowed on them at the beginning, they have required little or no attention since, beyond the protection referred to, and yet they have stood where they are for quite twenty years, and are now remarkably strong and form a fine mass. If plants are raised from seed they may either be sown where they are to stand, or in small pots, and then placed in heat, so as to get them up and strong, ready for turning out early in June, but a year at least will be saved by buying and planting the tubers. *J. S.*

Codonopsis ovata.—Herr Max Leichtlin gave me seed of this beautiful Himalayan Bellwort, and it is now flowering, having been planted out last autumn. Unfortunately the great beauty of the flowers, consisting in the kaleidoscopic markings at the base of the inside of the bell, cannot be easily seen as they grow, owing to their pendulous habit. It is, however, elegant in appearance and distinct in form. It is of procumbent spreading habit, and makes many branches, each of which rises in a flower-stalk a foot high, bearing two or three flowers, which succeed one another at different heights. It seems likely to have a very long flowering season. Its cultivation seems easy, and if really hardy will be a great acquisition. *C. Wolley Dod, Edge, July 3.*

Floriferous Sucker of Agave americana.—In removing the American Aloe which flowered here last season I found that it was putting up a sucker of unusual growth, which appeared to be of interest. It was producing flowers instead of leaves, as shown in the accompanying sketch (fig. 15), natural size. The flowers, which are not perfectly formed, are of a pale green colour, its growth having been made under the old foliage, almost in the dark; but it is now potted and exposed to the light, so that we shall see how it behaves under the altered conditions. *Wm. H. Baxter, Oxford Botanic Garden.*



Fig. 15.—Flowering offset of Agave americana.

Insects and Mildew.—There is a notion among many that when the atmosphere is hazy there is mildew in it, and, judging from the present appearance of vegetation the idea does not seem far wrong, for if there is not actual mildew in the air the condition of it now and for a long time past has been much in favour of generating or breeding that particular parasite, which seems prevalent everywhere, and is affecting some of the crops. The blade and straw of Wheat is of a peculiar glaucous blue hue, showing clearly that it is smitten—so much so, I fear, that unless rain comes quickly the ears and grain will suffer seriously, as the whole energies of the plant must be thrown out of work or impeded, and that just at a time when the corn wants the most feeding. In gardens Peas are giving up quickly and look very distressed, but not more so than Strawberries, especially British Queens, the leaves on which curl and show the mildew plainly, which is also thick on the fruit. This, instead of swelling, looks hard and starved, and what ripens is of very inferior flavour. The same has been the case with plants indoors, and it is only in certain houses where we syringed heavily, driving the water with force, that we have had Strawberries at all up to the mark. Not only is mildew rife, but insects are a perfect plague, for, look where one will, blue, green, or black fly is to be seen in such quantity that every twig, leaf and shoot is covered either with one or other of the aphis or the excreta from them. Cherries are poisoned, as the fly is not only on the leaves and stalks, but all round about the spurs and buds and on the stems of the fruit, where they are as close as they can pack, and the same with blue aphis on Plums, the trees of which they are crippling and spoiling for bearing next year. As to getting rid of them, the work is too formidable, for to destroy them would take a sea of liquid insecticide and an army of operators, and all that can be done is to ply the garden-engine and wash some of them off. Happy are they who have water laid on at high-pressure, as it must be a special delight to see these parasites drenched and carried away in a flood on the border. Would that I could have this joy in vanquishing such a pernicious pest instead of squirting at them in the feeble way we now do. A thunderstorm would help greatly, and may it soon come, for, if not too heavy, it will do incalculable good, not only in gardens, but all over the country, which wants rain everywhere, and in no district more than in this. *J. Sheppard.*

Warm Water for Plants.—This is indispensable for successful fruit forcing and plant growing, but which is not to be had in many gardens in quantity commensurate with the requirements. For plant watering, when such are in pots, enough may be drawn from the heating apparatus, or maybe there is a tank heated by a coil of pipes from the boiler available, but such supplies are perfectly inadequate when a Vine border 40 feet by 18 feet requires its 2½—3 feet of depth to be thoroughly soaked. Something more than tepid water is wanted to warm efficiently the cold manure-water, or other water, that must then be given, and the quantity altogether ought to be, at the lowest calculation, one gallon to the superficial square foot, which makes a total of 720 gallons, for a house of the size taken for exemplification; I would rather say 1000 gallons, of which at least 500 would be manure-water when such would be given, the other 500 would require, for mixing purposes, to be brought up nearly to the boiling point, so that to keep the pot boiling in a way that would cause no cessation of the work, a boiler containing 100 gallons should be made use of, and this, if once got hot, would suffice by repeatedly filling it up. Such a useful thing could be placed in any shed or outbuilding, and would be found exceedingly handy for a variety of purposes. It has been discovered that warm water has a very renovating effect on soils that have been long in use in pots and borders—it also seems to be a means for purifying soured and almost infertile soils; this may be the reason that old window plants, such as Myrtles, are kept in such an enviable state of health, by the ladies who indulge these favourites with warm tea and coffee at times—the good results springing from the warm water itself, rather than from the theine or caffeine contained therein. *M.*

Our Fruit Crops.—We have now arrived at that season of the year when we can safely form an estimate of our fruit crops. After seven years' wet unfavourable seasons it is very disheartening to find after the first dry season the fruit crops are only light and poor. With the exception of the Strawberry crop all the others are below an average. Apricots and Peaches coming early into bloom, and the weather being favourable, a good crop of fruit set; but the cold weather that followed and continued for so long a time was very injurious to the crop, which now turns out to be only moderate. Plums promised to be a heavy crop, but the frosts proved fatal, and the crops are only light. Cherries are a moderate crop. There was a great bloom on Pears, but the crop is poor. Apples are below an average crop, and the trees are troubled with insects. Gooseberries and Raspberries are only a moderate crop. Currants are plentiful, but the trees are covered with insects, and the quantity is only moderate in consequence. Strawberries are very fine and abundant; the late rains will have greatly benefited the crop by prolonging it and swelling off the fruit. Potatos are looking remarkably well, especially the late kinds. The early kinds are in general light, but are free from disease. *M. Saul, York.*

Ivy-leaved Pelargoniums as Climbers.—Having planted two of these beautiful climbers about twelve months since against two iron columns in a greenhouse here, I am desirous of drawing the attention of some of your readers to these plants as most desirable subjects for the above purpose. They were turned out of small pots into the border, and quickly started into a strong growth, and soon covered the unsightly iron columns. They are now

about 8 feet high, and are full of beautiful pink flowers which are well shown off by their handsome foliage, which even in the dull time of winter is a great attraction. They are the admiration of all who see them, and I am very frequently asked for cuttings as they are so easy to manage. I cannot too highly recommend them to any one desirous of covering an unsightly place in their conservatory or greenhouse. *Alfred Bishop, The Gardens, Wannock House, near Polegate.*

Sunlight for Climbers in Cool-houses.—How seldom are the climbers in cool conservatories in presentable order? The selection of species was a good one, the borders were well made, and most other points have had proper attention, but the plants have not been things of beauty for a long time past. The chief fault seems to lie in too much shade being given; this is done possibly to preserve the tender pot things, but it is generally at the expense of the permanent inmates. We do use too much shade undoubtedly for the benefit of the plants in our desire to preserve the beauty of some florists' flowers to as late a date as possible. That this is so we have only to observe the flowerless condition of Bougainvillea, the sun-loving Passifloras and Tacsonias, Bignonias that will flower finely only when their wood is, so to speak, roasted. As a proof that the excessive shading is the cause of this we may observe the great floriferousness of Stephanotis, Allamandas, Ipomœas, and others when grown on the roofs of Pine-stoves in the full blaze of the sun, and if shaded at all it is only by the thinnest of tiffany, and then only from 11 A.M. to 3 P.M. on very sunny days. Here we have wood that is well matured, there that which is green, sappy, immature, and incompetent to carry flowers. The writer saw a greenhouse not long since on which was no shading, nor the means of giving any; in this bright place the climbers hung from roof and pillar in orderly confusion and entanglement in all directions, and if not so thickly trained on the roof as to be detrimental to the plants under them, they just afforded that trifling amount of shading that plants in our too sunless country need. I think this absence of shade had aided in keeping the plants free from insects, or they had a robustness that put the insect attacks to nought, for cleaner plants could not be seen anywhere. *M.*

Spot in Lilium auratum. — The question has been raised in these columns, whether spot in Lilies adheres to the same plants from year to year, or whether the attack is, so to speak, accidental to each year. Last year I marked some very fine and strong bulbs of L. auratum which were attacked with spot whilst in flower, having previously seemed healthy. These were transplanted in winter, some to a bed where spot rarely appears, some were potted and put in the greenhouse, under which treatment I have hardly ever seen symptoms of spot. All these bulbs have failed to develope healthy buds, though L. auratum generally is looking well. I should be glad to know whether their blighty appearance is due to the disease called "spot." I can account for it in no other way. *C. Wolley Dod, Edge Hall, July 9.* [We see no "spot," but simply evidence of arrested growth, as if from cold. Still, it is very likely spot —*i.e.*, fungus—will develope later on. Ed.]

Potato Disease—Early and Late Years.—Mr. Jensen's views on this subject (see p. 21) are, in my opinion, probably erroneous. The fungus of the Potato disease varies in its time of appearance, just as noxious insects vary. Sometimes we have an early harvest of corn, sometimes a late; sometimes an early and good crop of Strawberries, sometimes a late and bad one; the crops of insects, fungi, corn, and fruit, are regulated by the warmth of the sun, the rainfall, and other causes; not by an occult, shadowy, oscillating pendulum. In the *Gardeners' Chronicle* for May 3, 1884, p. 589, Mr. Jensen says, that since 1877 (no very long time) the Potato disease has been alternately early and late. I have not yet found time to examine all the agricultural reports for seven years in confirmation — or refutation—of Mr. Jensen's views, but I am sorry he has stopped at 1877 (one of his late years), for 1875 was the earliest on record; therefore 1876, whether early or late, seriously upsets the Jensenian hypothesis. *W. G. S.*

—— Although Mr. Plowright may have found just a diseased leaf or two in a Potato field, or some other person may have been equally as successful, yet I think the general verdict is that, for the period of the year, the Potato crop has seldom been more free—or shall I, to be correct, say apparently more free?—from the attacks of the Peronospora than now. What may happen after rain it is not easy to say, because much depends upon the form the moisture may assume. A thorough good soaking rain, which would tend to produce renewed life and vigour in the plants, cleansing and purifying the air, foliage, and soil, would be productive of far less harm than stagnant humidity in the air—rain assuming the form of drizzle, accompanied at night with mist or fog. In this latter case we might see breadths blackened in a single night, but certainly not in the former case. It would, however, be then that the protective moulding would have a chance to prove how far Mr. Jensen was right or otherwise. So far moulded and non-moulded Potatos are all on an equality. As thunderstorms are frequent in places, and the disease may follow in their wake, it may be as well to remind readers that the once fondly held electrical theory of the Potato disease has no basis; in fact, that it is the humidity of the atmosphere thunderstorms promote which gives the fungus such occasional sudden and so extraordinary vitality. So far with early Potatos plenty of leaves thought to be diseased have been simply scalded by the great heat of the sun and the earth, especially when the night's dew has condensed into drops of water at the points of the leaves. *A. D.*

Iris fœtidissima.—At p. 11 of the present volume attention is called to an Iris described as I. Pseud-Acorus, for which I feel greatly obliged, and the more so seeing that on determination it proves to be I. fœtidissima, by far the rarer of the two British plants. The leaves of the latter much resemble those of the common Yellow Flag, and their flaccid nature appeared to be owing to the situation. Such chalky copses, however, are the true home of I. fœtidissima. The flowers were only in bud, but last year's seeds still hanging sufficiently distinguish the species. These are globose, with a soft testa, and although now somewhat wrinkled, are yet perfect in outline. The seeds of I. Pseud-Acorus, on the other hand, are very much compressed and flattened, with a hard testa. *X.*

Cabbage Lettuces.—In the face of the marvellously dry season we have so far experienced, I have had cause to marvel over the capacities of two or three kinds of Cabbage Lettuces to endure drought and yet turn in beautiful hearts—far beyond all I could have anticipated under the disadvantageous conditions of their culture. The kinds were, I believe, of French origin, the seed being sent me that I might grow them for trial. I sowed under glass in April, but when the plants were ready to put out the soil was so dry and harsh I laid a few of each kind in to wait for a rainy day. Still the rain did not come, and I had to water the soil, that the lumps might be broken to draw drills, and plant out my Lettuces, then water them in and leave them to their own resources. These, however, proved to be fairly good, for the plants took root in spite of drought and no more water, for there was none near, and recently hearted-in so admirably as to evoke surprise and satisfaction. I believe the majority of Lettuces in such cases would have become foul with aphis and have bolted off to flower almost at once. The kinds are Trocadero, a very handsome solid form of pale green colour, and partly tinged with bronze; White Chavigny, evidently a fine white Cabbage form, very firm and compact hearted; and Green Unctuous, the earliest and finest, something like All the Year Round, but larger. All the kinds are very sweet and crisp in spite of the drought, and seem to offer special usefulness for cultivation and consumption during hot, dry seasons. *A. D.*

FRUIT NOTES.

Fruit Prospects on the Clyde.—Fruit growing in Scotland is principally carried on as an industry in the districts of Aberdeen, Crieff, and along the valley of the Clyde. The latter, from the nature of its soil, sheltered position, climate, and proximity to Glasgow and the coalfields, which yield a large quantity of cheap labour, mark it distinctly as being the premier place for carrying on this industry. From an examination of the fruit district, extending along both banks of the Clyde from Lanark to Hamilton, the headquarters being Crossford, or the Tillitudlem of Sir Walter Scott, we noticed that the fruit crop will barely reach an average, and with a continuance of the present dry weather may be considerably short. Strawberries are the largest cultivated crop, and from present appearances will probably yield the best crop. A large extent of land has this year again been brought into bearing condition for this favourite fruit. The plants have generally blossomed extra well, but owing to the drought, or some other cause intimately connected with it, a large proportion of the blooms have not set. On some fields we examined these unset blooms would extend from 15 to 30 per cent. of the whole, while on others very few were noticed. The earlier varieties of Scotch Strawberries are just about ready for the market. In many cases it, however, will be smaller in size than usual, as, owing to the scarcity of moisture at the roots of the plants, the berries are ripening prematurely, and not swelling to their usual size. Many contracts were some time ago entered into with the preservers or boilers, as they are called in the district, at about the average of last year's prices. By at least the Clydeside men these prices are now considered to be too low, as present appearances do not warrant the crop which was expected a month ago, nor the yield predicted by many of the Scottish Press. Gooseberries and Currants are also likely to yield an under-average crop, particularly on the older plantations. Growers are sadly complaining of the increasing cost of growing the small fruits, and their fall in price—Strawberries within a few years having fallen from £45 per ton to £12 and £15 in many cases. Apples, Pears, and Plums are also a light crop, although neither in this district have got the best chance for some time, as the plantations are getting rather old. A few new plantations of Plums and Pears have been lately laid out, and are looking well; Apples are, however, quite neglected, being considered unworthy of attention. *North British Agriculturist.*

Apple Souvenir d'Etichove. — A medium-sized globular Apple, with short deeply set stalks, slightly ribbed around the closed eyes. The skin is deep red, longitudinally striped with yellow. It ripens in September, and keeps well till March. Described by M. Burvenich in the *Bulletin d'Arboriculture*, June, 1884.

Apple Mrs. Barron.—The June number of the *Florist and Pomologist* contains a striking coloured illustration of an Apple grown at Chiswick under the name of Yellow Belle-Fleur. The Apple Congress last year furnished the means of rectifying this appellation, and the Apple in question is henceforth to be known under the name above given. The fruit is large, ovate-conic, truncate at the top, with a short stalk set in a deep basin, and a broad funnel-shaped eye. The skin is of a rich yellow colour, flushed and streaked on the sunny side, the flesh pale straw-coloured, sweet. Season, October to February. The tree is of vigorous habit, a good cropper, and recommended for orchard culture.

Reports of Societies.

Royal Horticultural: *July 8.*

Scientific Committee. — Professor Michael Foster, M.D., F.R.S., in the chair. Present: Messrs. Grote, Bennett, W. G. Smith, Ridley, Murray, Boulger, Loder, Glaisher; Drs. Hogg and Masters; Rev. G. Henslow, Secretary.

Lancea tibetica. — Mr. Loder showed flowering specimens of this Tibetan Scrophulariad flowering, as was believed, for the first time in Europe. It is a dwarf herb with tufted, glabrous, oboval, oblong leaves, and blue 2-lipped flowers in loose terminal racemes.

Gentiana bavarica, &c.—Mr. Loder also showed flowering specimens of this beautiful species, which is difficult to grow. Mr. Loder had succeeded by growing it in peat amid stones. Other specimens, including Ranunculus cortusifolius, monstrous Plantains, &c., were also exhibited by this gentleman.

Proliferous Geum rivale.—Mr. Boulger showed flowers of this species affected with median prolification in the manner so frequent in this species.

Chlora perfoliata.—It has been observed that this plant opens its flowers with considerable degree of regularity about 9 A.M., and closes them about 4 P.M. Mr. Boulger had ascertained that, though shut up in a collecting-box, the flower opened at the usual time.

Æcidium Euphorbiæ.—Dr. Masters showed specimens of Euphorbia Cyparissias from Zermatt, affected with a fungus determined by Mr. W. G. Smith to be Ecidium Euphorbiæ, another form of which is supposed to be Uromyces pisi, growing on Peas; but we question whether there are Peas at Zermatt, and while the Æcidium is common the Uromyces is not known here. The special point of interest in the specimen consisted in the great alteration in the form and dimensions of the leaf. The normal leaves are linear, ¼—¾ inch long and upwards, and very narrow, while those leaves affected by the fungus were invariably shorter, broader, ovate or oblong, in fact, and slightly thickened in texture. Sometimes the whole plant was affected, and then on a superficial glance it might readily be passed as a distinct species.

Potato Experiments at Chiswick.—Dr. Masters briefly reported on the condition of the experimental rows of Potatos at Chiswick on the occasion of the second visit of the sub-committee. The disease had appeared in another quarter of the garden, but had not, up to the date of the visit of inspection on

June 30, appeared on the trial ground. The next visit will be paid on July 14, when the third series will be earthed-up in the Jenseniau method.

Puccinia vincæ.—Mr. W. G. Smith showed specimens of Vinca major destroyed by this fungus, which had caused the destruction of all the plants of this species in a London nursery.

British Gymnosporangia.—A paper was read on this subject from Mr. Plowright, giving a preliminary account of his experiments during the last two years, which so far as they have yet proceeded tend to confirm the statement of Oersted, that certain Rœsteliæ were simply stages of growth of a particular fungus existing in a different state on some other plant, hence the term "heteroicism" as applied to these fungi. This heteroicism is still doubted by some botanists, but has been confirmed by many observers and experimenters, and lately by Rathay. Mr. Plowright's independent observations tend in the same direction, and a specimen of Rœstelia lacerata on the Pear induced by the author was sent in evidence. Mr. Plowright also indicates the presence of two distinct and well-marked Rœsteliæ on the Hawthorn, stating that he had "produced them artificially on many different occasions, and they also occur naturally. Four times in 1882, and twice in 1884 he has produced upon Thorn (Cratægus) a Rœstelia from a Gymnosporangium on Savin, a Rœstelia which differs from R. lacerata in many points," which were indicated.

Rhubarb Stalks Dried.—Mrs. I. Jones sent a bundle of dried Rhubarb stalks for winter use, and which will be reported on after trial.

Miscellanea.—Various plants were exhibited, some of which will be reported on on another occasion.

FLORAL COMMITTEE.—Present in *Section A.*: Thomas Moore, Esq., in the chair; Messrs. J. Laing, H. Herbst, J. Hudson, J. Dominy, E. Hill, Dr. Masters, and the Rev. G. Henslow. *Section B.*: Shirley Hibberd, Esq., in the chair; Messrs. H. Bennett, J. T. D. Llewelyn, G. Duffield, and J. Douglas. Few plants were exhibited at this meeting, but cut flowers, especially of Roses and herbaceous plants, were plentiful and good. The new plants shown included a strikingly handsome example of the remarkably fine Vanda Sanderiana, with one spike bearing nine of its large and most attractive blossoms. This came from W. Vanner, Esq., Camden Wood, Chislehurst. Sir Trevor Lawrence had three good novelties in Aërides illustre, a supposed natural hybrid, of a high order of merit, its fine amethyst-purple lip being well set off by its white lilac shaded sepals and petals; the new Cypripedium Curtisi, a species with an unusually large and somewhat angular, rich brown lip, somewhat narrow, spotted petals, shading off to pink at the extremities, and the dorsal sepal margined with white; and Cattleya calumniata ×, a new hybrid raised in France by M. Bleu (C. amethystina × C. Acklandiæ), and flowering now for the first time in this country. Both in habit and in its variegated flowers it partakes most of C. Acklandiæ, the lip being violet-red, and the whitish-rose tinted sepals and petals spotted with violet. The seldom exhibited, small bright orange-red flowered Dendrobium erythroxanthum also came from the Burford Lodge collection. Mr. de Bary Crawshay showed a very fine white form of the new Cattleya Gaskelliana, the only colour about it being its bright yellow throat and a faint blotch of mauve on the lip. Cattleya Sanderiana, with two lovely coloured flowers, came from the same exhibitor; and the rare Odontoglossum mirandum, a showy yellow ground flower, with bold brown markings, came from Mr. H. J. Buchan, of Southampton. Messrs. James Veitch & Sons astonished us with a splendid display of varieties of the Japanese Iris Kæmpferi (more fully alluded to below), of which three were selected for Certificates, viz.:—Mary Anderson, pale lilac veined with purple—very fine; Princess Maud, extra fine in size, and pure white, excepting the yellow blotches on the outer segments; and Earl Granville, a remarkably fine flower, measuring 8 inches in diameter, and rich purple shading to lilac in colour. The same firm also sent Spiræa purpurea, a neat, compact-growing plant of medium height, with handsome purple, variegated, palmate leaves, and rich rose-pink flowers; Medinilla Teysmaniana, an erect-flowering species with large leaves, and a fine panicle of large rich rose-pink flowers; Torenia rubens, a useful stove trailing plant with dark purple flowers shading off to porcelain-blue; Carnation Celia, a fine Clove-scented bedding variety of the same size and colour as Mary Morris, but which the brightest sunshine does not burn at the edges; Campanula calycanthema rosea, with rose-pink flowers, pretty and novel; Indigofera floribunda alba, a pure white flowering variety; and Andromeda speciosa var. cassinefolia, a North-American hardy shrub, worth looking after for its grand clusters of waxy-white cup-shaped flowers. If this plant will force well, it will furnish something new for spring cutting. Mr. G. Duffield, gr. to H. K. Mayor, Esq., Winchmore Hill, exhibited a box of blooms of a pretty seedling Carnation named Martha, of medium size, very neat, yellow ground, with rose-scarlet and purple shadings. Mr. W. Bealby, Roehampton, showed in Delphinium Gloire de Nancy, a very fine branching double variety of a dark lilac colour; and a medium-sized pure white Tree Carnation named Madame Carle, a flower of good properties. Messrs. Cannell & Sons had a good white-flowered Begonia named Virginalis; some double Antirrhinums, and a truss of salmon-pink, semi-double zonal Pelargoniums of very large proportions.

The collection of Iris Kæmpferi from Messrs. Veitch & Sons, met with almost universal admiration for their exceeding beauty, rivalling that of the finest Orchids. The colours ranged from the purest white through various shades of violet-blue to the darkest purple, several being what may with propriety be called selfs, whilst very many are charmingly striped in varying degrees of density, or are suffused tenderly with harmonious tints, or have patches of gold on the exterior segments. It was supposed that these plants had disappeared from cultivation, which was partly true, but it has began to put in an appearance now in much greater variety. The same firm also showed a white and yellow climbing Lonicera japonica, named Halleana; a collection of Campanula calycanthema in variety, and a very fine collection of Tea, hybrid perpetual, and Bourbon Roses from their nursery at Langley, which show great robustness in flower and leaf. We noticed as nice blooms, Countess of Rosebery, Louis van Houtte, Auguste Rigotard, and Marie Baumann. For the collection of Roses a Silver Banksian Medal was awarded. Messrs. W. Paul & Son, Waltham Cross, showed four hybrid Tea-scented climbing Roses, the offspring of Gloire de Dijon—this sort probably as seed bearer; they were either crimson or pink, and if possessing the hardiness of "the Glory" these perfumed varieties would find much favour as climbers, the flowers, as at present seen, being of fairly good form. A large and remarkably good collection of Roses came from the same nursery, and, although sent not for competition, it contained some particularly fine examples of Jules Finger, Countess of Rosebery, Souvenir d'Elise, La France, Xavier Olibo, Jean Ducher, Reynolds Hole, and Crown Prince. There were about twenty baskets of Rose blooms and a great number of boxes—altogether a most liberal addition to the day's show. A Silver Banksian Medal was awarded. Messrs. Kelway & Son, Langport, Somerset, showed a large assortment of single and double varieties of Pyrethrums, Roses mostly of the Tea class, single perennial Gaillardias in many varieties—fine conspicuous flowers being observed in Magnifica, a crimson and brown; Leonidas, similar; Pamphos, a semi-double yellow; Paccius, crimson and gold; Babilis, the same tint; Valentia, with tubular florets, similar in colour to the last; several fine Delphiniums, especially striking being D. ranunculoides, a double violet-coloured flower, the petals of which are delicately margined sometimes with a darker colour; Sidalcea candida, rarely seen, a pure white flower set on slender spikes; Monarda fistulosa, and a variety of interesting hardy flowers. For the entire collection a Silver Banksian Medal was bestowed. Mr. T. S. Ware showed three varieties of Brodiæas—B. grandiflora, a deep blue flower, the plant being of slender habit; B. grandiflora major, a plant having a similarly coloured flower, but the growth stronger; and B. Wareii, a slender grower with pink blossoms. Mr. Ware had also a very large collection of hardy plants, for which a Silver-gilt Banksian Medal was awarded. There were many varieties of Lilies, notably the rather rare L. Browni, L. pallidiflorum, and a great spike of L. giganteum. There were many varieties of the handsome and but little grown Alströmerias, of Pentstemons, Aquilegias, specimen Lachenalia pallida, the great Spanish Thistle, Scolymus grandiflorus, border Carnations, Himalayan Poppies, Hemerocallis, Delphiniums, &c. Mr. Cannell showed two strange looking Antirrhinums that had malformed blooms—apparently an attempt at doubling, that can hardly be said to be imorovements on the simple form; and Mr. Jas. King, Rowsham, Aylesbury, another Antirrhinum, in which the mouth of the diminutive flower presents itself, quite opened—all of these being of more interest botanically than otherwise. Mr. Turner brought up a pretty display of Carnations and Picotees—a pleasant foretaste of the good things in this way we may expect to see at the next meeting.

The awards made were:—

FIRST-CLASS CERTIFICATES.

Section A.

To Sir Trevor Lawrence, Bart., M.P., for Aërides illustre.

To Sir Trevor Lawrence, Bart., M.P., for Cypripedium Curtisii.

To Sir Trevor Lawrence, Bart., M.P., for Cattleya calumniata.

To Messrs. James Veitch & Sons, for Medinilla Teysmaniana.

To Messrs. James Veitch & Sons, for Spiræa purpurea.

To Messrs. James Veitch & Sons, for Indigofera floribunda alba.

To De B. Crawshay, Esq., for Cattleya Gaskelliana alba.

Section B.

To Messrs. James Veitch & Sons, for Iris Kæmpferi var. Mary Anderson.

To Messrs. James Veitch & Sons, for Iris Kæmpferi var. Princess Maud.

To Messrs. James Veitch & Sons, for Iris Kæmpferi var. Earl Granville.

To Messrs. James Veitch & Sons, for Carnation Celia.

To Mr. W. Bealby, for Delphinium Gloire de Nancy.

To Mr. G. Duffield, for Carnation Martha.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair; Messrs. J. Smith, William Paul, G. T. Miles, G. Bunyard, J. Willard, and P. Crowley. Mr. House, of Peterborough, sent samples of his new Perfect Marrow Pea as grown under field culture without stakes, and which appears to be a good early variety of the Ne Plus Ultra section. The committee requested that it should be sent to Chiswick for trial, as also two or three other new varieties shown by Mr. Eckford. Mr. H. S. Forman, 28, Upgate, Louth, sent samples of three new Strawberries, the best of which was the oldest of the trio—Forman's Excelsior, a well coloured Cockscomb-shaped fruit, of good quality. Three or four seedling Melons came up for testing, but all were bad.

Crystal Palace Rose Show: *July* 5.—This, the best attended of the metropolitan Rose shows, was not quite such a brilliant affair as those of some former years, a state of things that may easily be accounted for by the admitted want of really fine blooms all through the home counties owing to the unusually prolonged period of dry weather. Many of our excellent growers, who reside in localities where light, porous soils prevail, found it impossible under the circumstances to compete with any chance of success in the open classes. Still, in spite of the dryness, our eastern counties, which are generally the first to suffer, contributed the major numbers of the winners in the larger classes; hence we find class 1, for seventy-two varieties of Roses shown in single trusses, that the 1st prize was awarded to Mr. B. R. Cant, Colchester, for a good lot of blooms for this season, the undermentioned sorts being those which were most noticeable for quality and general excellence:—Marie Baumann, Duke of Teck, Devoniensis, Abel Carrière, Auguste Neumann, John Hopper, Madame H. Jamain, Lady Sheffield, Countess of Rosebery, Caroline Küster, Lord Macaulay, Comtesse de Paris, Beauty of Waltham, Fisher Holmes, Maréchal Niel, and Souvenir d'Elise; 2d in the same class were Messrs. Paul & Son, the Old Nursery, Cheshunt, whose finest blooms were Hy. Ledechaux, Niphetos, Madame Gabrielle Luizet, Horace Vernet, Captain Christy, and Lady M. Fitzwilliam. The 3d prize was awarded to the Cranston Nursery Company, King's Acre, Hereford. For the competition for the forty-eight varieties in trusses of three each, distinct, the entries were more numerous, and the display was very satisfactory, notwithstanding the evident admixture of some blooms that were under the mark. 1st again Mr. B. R. Cant, with good examples of John Hopper, Antoine Ducher, Niphetos, Mons. E. Y. Teas, Madame Charles Wood, Marquise de St. Armand, Madame Marie Cointet, A. K. Williams, and Exposition de Brie; 2d, Messrs. Paul & Son, Cheshunt, in whose collection we noticed Lady Marie Fitzwilliam, Boildieu, Madame E. Verdier, and Alfred Colomb; 3d, the Cranston Nursery Company. For the best twenty-four hybrid perpetuals in trusses of three each the 1st prize went to Messrs. J. Jefferies & Son, Cirencester; the 2d to Mr. F. Cant, Colchester; and the 3d to Messrs. G. Bunyard & Co., Maidstone. Messrs. Jefferies & Sons' stand included flowers of fine quality in Général Jacqueminot, Souvenir d'Adolfe Thiers, and Mons. E. Y. Teas, Mrs. C. Wood, Madame Rougier, and Mons. Alfred Dumesnil; 3d, Mr. John House, Eastgate Nurseries, Peterborough. For twenty-four single trusses, 1st, Mr. Frank Cant, the Mile End Nurseries, Colchester, with fine examples of Madame Ducher, Madame G. Luizet, Souvenir d'Elise, and Boule d'Or, Madame H. Jamain, and Madame Lacharme; 2d, Messrs. Burrell & Co., Howe House Nurseries, Cambridge, with good blooms of La France, Comtesse Nadaillac, Abel Carrière, and Etienne Levet; 3d, Messrs. G. Cooling & Son, Bath; and extra 3d Messrs. Kinmont & Kidd. Mr. B. R. Cant took the 1st prize for eighteen tea-scented or Noisette Roses, among them being fair blooms of President, Caroline Küster, La Boule d'Or, Madame Bravy, and Moire; and the 3d was awarded to Messrs. Paul & Son, for a tolerably even lot of nice blooms. Mr. B. R. Cant was likewise the winner of the 1st prize for a collection of Roses shown in trusses of three each, Maréchal Niel, Madame Welsh, Marie van Houtte, Jean Ducher, and Etoile de Lyon being represented by fiue blooms; 2d, Messrs. Burrell & Co.; 3d, Messrs. Paul & Son. For the collection of white Roses, Mr. B. R. Cant, whose examples of Innocente Pirola, Devoniensis, Niphetos, and Madame Bravy were particularly noticeable, again came in 1st; Messrs. Burrell & Co. took the 2d, and The Cranston Nursery Company the 3d. In the competition for the best collection of pink Roses, Messrs. Paul & Son were 1st, with Madame Thérèse Levet, Madame Melanie Vigneron, R. Schultheis, Marquise de St. Amand, and Madame H. Jamain; 2d, Mr. J. Mattock, New Headington, Oxon; 3d, The Cranston Nursery Co. Mr. B. R. Cant took also the premier prize for the collection of crimsons, with similar blooms to those seen

in his other successful stands; 2d, Messrs. Paul & Son; 3d, The Cranston Nursery Co. For velvety-crimson.—1st, Mr. B. R. Cant. For eighteen Teas or Noisettes.—1st, Mr. B. R. Cant, whose Souvenir d'Elise were exceedingly fine examples; 2d, Rev. Page Roberts, Scole Rectory, Norfolk, with an even lot of Souvenir d'Elise; 3d, Mr. G. W. Piper, For the best eighteen Roses of the Marie Baumann colour.—1st, Mr. B. R. Cant, with good specimens of that kind; 2d, Messrs. Bunyard & Co., Maidstone, with the same; 3d, Messrs. Hugh Low & Co., Clapton, also with the same variety. For Roses of the Prince Camille de Rohan type, Messrs. Paul & Son took the 2d prize with Abel Carrière; whilst Mr. W. J. Grant, Hope End, Ledbury, for eighteen of the Francois Michelon type, was placed 1st, for Marquise de Castellane; Mr. B. R. Cant 2d, with Marie Verdier; and Messrs. Bunyard & Co. 3d, with François Michelon. For the best eighteen Roses of Captain Christy, or any similar variety, the 1st prize was taken by Mr. Hy. Bennett, Shepperton, for capital blooms of Lady Mary Fitzwilliam; 2d, Messrs. Paul & Son, with Captain Christy; 3d, Messrs. G. Cooling & Sons. For eighteen of the A. K. Williams type.—1st, Mr. B. R. Cant; 2d, Messrs. Paul & Son; 3d, Mr. John House. Mr. J. House took likewise the 1st prize for eighteen Roses of the W. A. Richardson type, with rather loosely formed blooms of that variety. Messrs. Paul & Son were the winners of the best prize for eighteen bunches of Moss Roses. For eighteen trusses of Niphetos, the 1st prize went to Mr. B. R. Cant, for extra fine examples of this fine variety, whilst Messrs. Keynes, Williams & Co., Salisbury, were 2d.

In the classes in which amateurs alone competed, Mr. W. J. Grant took the 1st prize for forty-eight varieties, his Ulrich Brenner, La France, Baroness Rothschild, Niphetos, Mrs. Woolchild, H. Vernet, Etienne Levet, and Duc de Montpensier, being fine blooms; Mr. J. Ridout, gr. to J. B. Heywood, Esq., Woodhatch Lodge, was 2d—this stand contained fine specimens of Duke of Wellington, Etienne Levet, Captain Christy, and Jean Ducher; 3d, R. J. H. Pemberton, Havering-atte-Bower, Romford. For the best twenty-four distinct H.P. Roses.—1st, T. W. Budd, 8, Gay Street, Bath—his Horace Vernet, La Havre, Xavier Olibo and Prince Arther being amongst his best blooms; 2d, Mr. Geo. Christy, Buckhurst Lodge, Westerham, who had superior examples of Henry Ledechaux, Duchesse de Vallombrosa, and Alfred Colomb; 3d, Mr. R. Gray, gr. to the Earl of Stanhope, Chevening Park. For the best twenty-four varieties, three trusses each.—1st, Mr. Jos. Davis, The Square, Wilton, Salisbury; 2d, Mr. J. Brown, gr. to A. J. Waterloo, Esq., Great Doods, Reigate; 3d, Mr. W. J. Grant. For the best twelve varieties H.P., shown in single trusses.—1st, Mr. J. Brown; 2d, Mr. C. Taylor, Swan Inn, Headington, Oxon; 3d, Rev. E. L. Fellowes, Wimpole Rectory, Royston. For the best twelve Tea-scented Roses.—1st, Rev. F. Page Roberts, whose fine examples of Catherine Küster, Comtesse Nadaillac, Madame Bravy, Maréchal Niel, and Innocente Pirola were particularly handsome blooms; 2d, Rev. E. L. Fellowes; 3d, Rev. Hugh A. Berners, Harkstead Rectory, Ipswich.

In the miscellaneous exhibits Messrs. John Laing & Co. put up a splendid lot of their finest Begonias, representative of all the newest and best of their own and foreign raising. For these plants, that were imposingly disposed at the eastern entrance to the tent, a 1st prize was awarded—a 2d prize for another smaller collection going to Mr. H. Coppin, Rose Nursery, Shirley, Croydon. Mr. Charles Turner, Slough, showed Lilium auratum, Carnations, Pinks, show and fancy Pelargoniums, for each and all of which 1st prizes were bestowed. Messrs. Paul & Son, Paul's Nursery, Waltham Cross, contributed, but not for competition, many boxes and baskets of Roses, many of the flowers being of much beauty, an extra prize being awarded them for Rose Mad. Cheddau Guinnoseau. Messrs. Keynes, Williams & Co. and Mr. Rumsey, Joyning's Nursery, Waltham Cross, likewise sent several collections of Roses, adding considerably to the attractiveness of the show. Some beautiful Pansies came from Messrs. Harkness & Sons, Bedale, which found many admirers, the flowers being of considerable merit from the florists' point of view.

From Mr. Rivers, Sawbridgeworth, came dishes of Cherries, Early Rivers, a splendid black fruit, like Circassian, but less rich in flavour, although earlier; Bigarreau Napoleon, Ludwig's Bigarreau, Black Hawke, Der Schucken Plum, Early Transparent Gage, a luscious fruit of a good size; Nectarines Goldoni, Humboldt, Pine-apple, and Victoria, and Peaches Sea Eagle, Nectarine Peach and Exquisite. These were stated to be the produce of pot trees, and were fine examples of their kind.

First-class Certificates were granted to Messrs. John Laing & Co., Stanstead Park, Forest Hill, for Begonias Alba Plena, Golden Queen, Mr. A. Forbes, Rose Perfection, White Perfection; and to Mr. Turner, Slough, for Pink (seedling) Captain Kennedy.

Royal Horticultural of Ireland Summer Show: *July* 3.—This exhibition took place in Mr. Guinness' grounds at Earlscourt Terrace, but the display in nearly all classes was very small, and the task of the judges must have been a very light one, excepting in the case of Roses, which were well shown by Mr. Hartland, of the Cork Nurseries, and Messrs. Alex. Dickson & Sons, of Newtownards—the former taking the Society's Cup for a stand of forty-eight varieties; and the latter took the lead in the other nurserymen's classes. Noticeable among Messrs. Dickson's blooms were Edward Morren, Marie Verdier, Marquise de Castellane, Star of Waltham, Caroline Soupert, Etienne Levet, Marquise de Mortemarte, Cheshunt Hybrid, and a new Tea named Ethel Brownlow, in every way a beautiful Rose, which no doubt will soon become very popular. Mr. Hartland's finest blooms were La France, Duchess of Bedford, Marie Baumann, Emile Hausberg, Marie Hausmann, Baroness Rothschild. In the amateur's class for thirty-six blooms (eighteen vars.), the Cup was awarded to D. L. Coddington, Esq. (Mr. Marry, gr.), who had good blooms of the leading varieties; and for twenty-four Teas the same exhibitor took 1st prize with a stand, in which Souvenir d'une Ami, Triomphe de Rennes, and Niphetos were very fine. The clsss for twelve stove and greenhouse plants brought out three competitors—1st, H. Deasy, Esq., Carysfort House (Mr. Darcy, gr.), who staged a good group of foliage plants, but the flowering plants were weak; 2d, J. Jameson, Esq., Blackrock; and 3d, the Chief Secretary, in whose group was a very fine and well-bloomed plant of Aërides odoratum. For six fine-foliaged plants, L. G. Watson, Esq., Newstead, Blackrock, was placed 1st with a nice group. Ferns were well shown, the 1st prize going to L. G. Watson, Esq., who staged well-grown moderate sized plants of Adiantum farleyense, Gleichenia semivestita, Davallia Mooreana, Nephrolepis fulva, &c. For six British Ferns, Phineas Raill, Esq., was 1st, with a nice lot, which included Scolopendrium Gloveri, Osmunda cristata, &c.

For six Orchids Mrs. Campbell, The Hermitage, was placed 1st, with a moderate lot, and the 2d prize was taken by the Chief Secretary (Mr. McKenna, gr.), whose group included a nice well-bloomed plant of Sobralia macrantha. H. Deasy, Esq., was awarded 1st prize for a new exotic—a well-grown plant of Alocasia Thibautiana. Kalosanthes were present in quantity: Mr. Tobin, gr. to W. J. Perry, Esq., Blackrock, took 1st honours with nice dwarf plants, profusely bloomed; and the same exhibitor was 1st for Pelargoniums, which were well shown.

Hardy plants in pots formed a special feature, especially those from the Rev. F. Tymons, who was easily 1st, most noticeable in his group being Gladiolus Colvillei var. The Bride, Iris xiphioides, double white Rocket, Statice Suwaroii, white Martagon Lily, &c. A nice group of plants, not for competition, was exhibited from the Glasnevin Botanic Garden, and included Masdevallia Harryana and the Bull's-blood variety of the same species, some well-grown Dracænas, Crotons, &c.; and Messrs. Henderson & Sons, of the Templeogue Nurseries, put up two neat groups of small, neatly-grown stove and greenhouse plants, Ferns, &c., which were Highly Commended by the judges.

The show of indoor fruit was exceedingly poor: Mr. M'Cullagh, gr. to Lord Powerscourt, Co. Wicklow, was placed 1st in all three of the Grape classes, with bunches which were mostly far from being ripe, particularly the Muscats. Melons were also poorly represented, only four being staged—Mr. M'Cullagh being placed 1st in the class for green-fleshed, and Mr. Tyler took the lead in the scarlet-fleshed class, with a seedling named Shelton Abbey, a variety very similar to Blenheim Orange, but much smaller. For a Pine Mr. Tyler, gr. to Lord Wicklow, Shelton Abbey, Arklow, was 1st, with a nice Queen. Peaches were shown by five or six competitors, the 1st award going to Richard Pinn, Esq., for a fair dish of Noblesse. Strawberries were very well shown by Lord Wicklow, who took 1st honours in both classes. For a dish of Cherries Mrs. Milner was placed 1st with a good dish of Royal Duke.

Taking the exhibits collectively they were only of second-rate quality (with the exception of Roses), and it seems a great pity that the citizens of Dublin do not promote their exhibitions by giving prizes worth competing for, for gardeners, as a rule (although they may obtain honour), are not in a position to lose money on account of the amount taken in prizes not being sufficient to defray their expenses. *Visitor.*

Winchester Horticultural: *July* 3 *and* 4.—The first summer show of this Society was held under favourable auspices, and was a great success in a horticultural point of view; the attendance, we are sorry to say, however, was not large, probably owing to the *fêtes*, &c., going on in the city in commemoration of the seven hundredth anniversary of the Mayoralty, which caused a large influx of visitors to make their way into the city. This young and enterprising Society deserves greater success, and we trust that next time it will be able to find a site for their show more suitable to the purpose both for the general public and exhibitors. The Honorary Secretaries, Messrs. Porter and Colson, worked hard to make the show a thorough success, and thanks are due to them for their energy and the courtesy shown to all concerned. The entries in most classes were plentiful, if we except fruit and vegetables, which were rather limited. Roses were a strong feature, and would have been more so had the continued dry weather not prevented many at the last moment from competing. Stove and greenhouse plants and groups arranged for effect were plentifully shown. We should like to see a change in the style of arrangement, all, excepting the 1st prize group, from Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, being much too flat and formal and too closely packed. The group abovementioned was a long way ahead of all others, being much lighter, and the plants of better quality for the purpose.

In class 1, open to all members, for twelve stove and greenhouse plants, six to be in bloom and six fine-foliaged, there were three exhibitors. Mr. E. Wills, gr. to Mrs. Pearce, took the lead, with fine healthy specimens of good quality, the principal among them being Latania borbonica, a healthy plant; Cycas revoluta, a good piece of Cocos Weddelliana, and a finely-coloured Croton Queen Victoria; the principal blooming plants were a very fresh Clerodendron Balfourianum, Cypripedium barbatum, and C. nævium with about forty flowers; a nice fresh Kalosanthes coccinea, and a rather small plant of Impatiens Sultani. Mr. Cox. gr. to R. K. Windham, Esq., Corhampton House, Bishops Waltham, followed with good blooming plants, but his foliage plants were weak as compared to the 1st prize lot. His best plants were a good Allamanda Hendersoni, Stephanotis floribunda, a small, healthy, well bloomed Medinilla magnifica, and a well bloomed plant of Bougainvillea glabra grown as a standard; the 3d prize went to Mr. E. Hillier, nurseryman, Winchester.

In class 2, for a miscellaneous group arranged for effect, space 11 feet by 10, there were only two competitors—Mr. Wills, who was 1st, and Mr. Hillier, whose group before stated was much too closely packed and formal. For six stove and greenhouse Ferns Mr. Cox was placed 1st, with healthy specimens of Adiantum farleyense and A. cuneatum, and a seedling Gymnogramma; 2d, Mr. Hunt, gr. to R. Moss, Esq., M.P., Weston Grove, Southampton, who had among others a good piece of Lycopodium scandens; 3d, Mr. E. Astridge, gr. to W. B. Simmonds, Esq., Abbots Barton, Winchester. For six stove and greenhouse plants, three in bloom and three fine-foliaged, Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, was a long way ahead of the other competitors; his plants were Alocasia macrorhiza variegata, Cissus discolor, Croton Queen Victoria, Allamanda Hendersoni, a very fine and densely-bloomed plant of Bougainvillea glabra, and a good specimen of Begonia Emperor; Mr. Hunt was 2d; and Mr. A. Prouting, gr. to Miss Butler, Thomas Street, Winchester, and Mr. E. Gandy, gr. to the Earl of Northbrook, Stratton Park, were placed equal 3d. The class for a smaller group (10 feet by 8) arranged for effect, brought four competitors, all of whose arrangements were much too flat and stiff—the best was from Mr. Neville, gr. to F. W. Flight, Esq, Cornsüles, Twyford, Winchester, who had a bright group, and had made the most of the plants at his disposal, which were not particularly well suited for the purpose; 2d, Mr. Axford, gr. to C. M. Shipley, Esq., Twyford Moors, Winchester; 3d, Mr. Hunt. For a single specimen foliaged plant Mr. Wills was 1st, with a healthy Cocos Weddelliana; 2d, Mr. Hillier, with Cycas revoluta, pale in colour; 3d, Mr. Astridge, with a small Alocasia metallica. For a single specimen blooming plant, Mr. Cox took the lead with a fine pyramid-shaped specimen of Bougainvillea glabra which was slightly past its best. Mr. Molyneux followed with a fine specimen of Emperor Begonia. Begonias, Pelargoniums (show and zonal), Coleus and table plants were well shown by Messrs. Hunt, Wills, Cox, and Hillier.

Cut Roses were shown in large quantities and generally in good condition, the principal class being for seventy-two varieties, the corporation giving a piece of plate value £10 as 1st prize, which only brought two competitors, no doubt owing to the hot dry weather, Mr. B. Cant, Colchester, was an easy 1st, his blooms being fresh, neat, and of good colour. Messrs. Keynes, Williams & Co., Salisbury, took the 2d prize, with blooms which were somewhat unequal in size and some past their best. For forty-eight distinct single trusses Mr. B. Cant was again 1st, followed by Mr. F. Cant, Colchester, and Messrs. Keynes, Williams & Co. For twenty-four varieties, distinct, three trusses of each, Mr. B. Cant followed up his previous successes by again taking 1st, La France and Dr. Andry being specially good; Mr. F. Cant and Messrs. Keynes, Williams & Co. following in the order named. For twelve Teas or Noisettes, distinct, Mr. Frank Cant was 1st, Mr. B. Cant being 2d. For twelve single trusses, any dark hybrid perpetual, Mr. B. Cant was 1st, with neat, fresh flowers of A. K. Williams; Mr. Hillier followed with the same variety. For twelve blooms, any light variety of hybrid perpetual, Mr. Hillier was 1st, with La France, in good condition; 2d, Mr. B. Cant, with Merveille de Lyon. For twelve single trusses, any one variety of Tea or Noisette, Mr. F. Cant was 1st, with very fine blooms of Souvenir d'Elise; Mr. B. Cant following, with Devoniensis. In the classes not open to nurserymen there were some good stands of blooms, Mr. Neville being premier exhibitor, winning 1st for twenty-four and twelve H. P.'s and twelve Teas; Captain Ramsay, Fareham, and Mr. Wills following. Hardy herbaceous flowers were limited in numbers, but good in quality, Mr. Molyneux leading with a neat stand.

Fruit was thinly represented but good in quality. A very fine collection was staged by Mr. Wildsmith, gr. to Lord Eversley, Heckfield (not for competition), consisting of three fine Pines, two Melons, two dishes of Strawberries, two dishes of fine Figs, two of Peaches, finely coloured; two of Cherries; three bunches of Black Hamburgh Grapes, both fine in bunch and berry, and grandly finished; three good bunches of Muscat of Alexandria, completed this collection, which was much admired. For three bunches of black Grapes, Mr. Molyneux was an easy 1st, with fine Black Hamburgh bunches, very fine in berry, and superbly coloured; Mr. J. Cox and Mr. J. Dauncey, gr. to J. B. Staine, Esq., were placed equal 2d, the former had fine bunches of Black Hamburgh, with good berries, but not quite coloured; the latter had smaller bunches of the same variety, better coloured, but smaller in the berries. For three bunches of white Grapes, Mr. Molyneux was 1st, with Buckland Sweetwater, nicely coloured; Mr. H. Galton, gr. to Mrs. Fredericks, Twyford, being 2d with the same variety, larger in the berry, but green. For six Nectarines, Mr. H. Galton was 1st, with Lord Napier, richly coloured; Mr. Dauncey 2d. Mr. Hunt had the best green-fleshed Melon, a seedling; Mr. Molyneux coming in 2d, with Hero of Lockinge. The latter was 1st, with Scarlet Gem, in the scarlet class; and Mr. Cox 2d, with Blenheim Orange. For twenty-four Strawberries, Messrs. Dauncey, Hunt, and Mr. R. Dicken, gr. to Mrs. Major Lowth, were the prizetakers, all showing fine fruit.

Vegetables were represented by two collections, the winning lot being from Mr. Molyneux; his best dishes were of Leviathan Onions, fine; good Hackwood Park Tomato, Stratagem Peas, Long White Marrows, and Early London Cauliflower; Mr. Dauncey was 2d, his best dishes being Tomatos, Artichokes, and Peas.

For a dessert table decoration, Miss Bessie Flight was an easy 1st, with a nice light arrangement; and Mrs. Colonel Nicoll, Westbourne Lodge, Winchester, was 2d, with an arrangement much too crowded. For a single vase for drawing-room decoration, Miss Bertha Flight was 1st; 2d, Miss Agnes Flight. Mr. Hillier was 1st for bouquet wild flowers; and grasses were shown in large quantities for the prizes offered to school children, upwards of eighty baskets being shown. (*From a Correspondent*).

Tunbridge Wells Horticultural: *July* 4.—The display within the tents in the well-adapted grounds and the lofty spacious hall, in which this Society hold their annual exhibitions, has rarely if ever before been of so uniformly meritorious a character as on this occasion, which, combined with the brilliant weather, supplied a most enjoyable treat to the throng of appreciative visitors that invariably attend the exhibitions at this fashionable place.

Stove and greenhouse plants are generally to be met with here in better condition and in larger numbers than in most places where the shows do not take place early enough to catch the Azaleas and other effective plants that bloom in spring, the presence of which is missed later on.

In the open class for eight stove and greenhouse plants there were four exhibitors, Mr. Gilbert, of the Springfield Nurseries, Hastings, taking 1st with a well-grown profusely flowered group, the best of which were Dipladenia amabilis, in good condition; Aphelexis macrantha rosea, quite fresh; a large densely flowered Kalosanthes coccinea, Stephanotis floribunda, and Statice profusa. Mr. Tudgey, The Exotic Nursery, Waltham Cross, who was 2d, had also a good lot, in which were Erica ferruginea major, E. Shannoni, a huge specimen of Azalea Brilliant, one of the best of all varieties for late flowering; and Allamanda nobilis. Mr. Rann, gr. to J. Warren, Esq., Handcross Park, Crawley, 3d. The class for four stove and greenhouse plants was also well filled, Mr. Moorhouse, gr. to J. W. Temple, Esq., Leyswood, being 1st, with, amongst others, an unusually large and well bloomed example of Erica obbata, one of the best of all Heaths; with it was a nicely flowered Stephanotis. Mr. Bolton, gr. to Mrs. Spottiswoode, Coombe Bank, 2d, his best examples being Clerodendron fallax, with numerous spikes of its brilliant scarlet flowers; Anthurium Scherzerianum and Statice imbricata. 3d, Mr. Gilbert.

FINE-FOLIAGED PLANTS were well represented. In the class for eight the competition was very close, Mr. Tudgey taking the lead with a very good set of plants, the most noticeable of which was Kentia australis, Pritchardia pacifica, Cocos Weddelliana, Cycas circina is, Croton Johannis, and Cordyline indivisa; Mr. Rann, who was a very close 2d, had immense examples of Phœnix tenuis, Thrinax elegans, Croton Queen Victoria, C. princeps, and C. Williamsii; Mr. Gilbert, 3d, also having a fine group, in which were large and well managed examples of Kentia Fosteriana and Chamærops Fortunei.

For a group of eight Ferns, Mr. Pope, gr. to J. J. Barrow, Esq., Holmwood, took 1st, with a nice selection of small growing kinds. In the amateurs' class for six stove and greenhouse plants Mr. Pope was a good 1st, with a pretty half-dozen, containing Ixora javanica, I. javanica floribunda, and Allamanda Hendersoni; Mr. Bolton 2d. Four stove and greenhouse plants (amateurs).—Here Mr. Cooke, gr. to De B. Crawshay, Esq., Rosefield, Sevenoaks, had 1st, with a group of well-flowered Orchids, consisting of Cattleya gigas, bearing twelve flowers; Epidendrum prismatocarpum, Disa grandiflora, and the scarce Anguloa Ruckerii sanguinea; 2d, Mr. Pope. Six fine-leaved plants (amateurs).—With these Mr. Rann took the lead, staging a large and well-grown group, remarkable in which was Livistonia rotundifolia, one of the best of Fan-leaved Palms, an excellent specimen of Bonapartea stricta and Croton Challenger—a fine variety; Mr. Moorhouse 2d. Six Ferns (amateurs).—1st, Mr. Bolton, with nicely grown, medium-sized plants; 2d, Mr. Wilkins, Shirley Hall, Langton.

Large-flowered Pelargoniums were in good condition, considering the advance of season and scorching weather. For six, Mr. Wilkins had 1st honours, with a fresh, nicely-flowered group; Mr. Shoebridge, gr. to W. Edwards, Esq., Fern Bank, 2d, staging a creditable lot of plants. With six fancies, Mr. Wilkins was likewise 1st; 2d, Mr. Turner, gr. to F. R. Lachene, Esq., The Wilderness. Zonal Pelargoniums were also well shown by Mr. Allen, who was 1st with six single varieties. Double zonals were beautifully flowered and not too stiffly trained—a fault very common with zonals of both the double and single sections. Six double varieties.—1st, Mr. Wilkins; 2d, Mr. Allen. Fuchsias were not so well shown as we have before seen them here, the competing groups being uneven in size. In the class for six Mr. Turner had 1st, Mr. Shoebridge 2d. Hardy Ferns.—In a close run Mr. Allen took 1st with even well grown plants, Mr. H. Scammell, gr. to C. Reiley, Esq., Nevil Park, being 2d. Gloxinias were shown in beautiful condition by Mr. Read, gr. to Mrs. W. C. Cripps, Mount Calverley Lodge, who took 1st in the class for eight with profusely bloomed examples, all erect kinds bearing unusually large flowers of well varied colours; 2d, Mr. Turner. Achimenes were equally well done, the growth of the plants being close and compact, in addition to their being profusely flowered. With six Mr. Scammell had 1st, staging Mauve Queen, Verschaffeltii, Longiflora major, L. rosea, L. alba, and Edmund Bossier, which represent a nice selection of colours of these useful summer flowering plants, not now so much grown as their merits entitle them to; 2d, Mr. Moorhouse.

GROUPS OF PLANTS ARRANGED FOR EFFECT were in great force, seven competitors putting in an appearance, the exhibits of which almost filled a large tent. In a keen competition Mr. Fennell, gr. to Mrs. Cazalet, Fairlawn, Tonbridge, took the lead with a very pretty arrangement in which form and colour in the materials of which the group was composed left little to be desired; Mr. Bolton, who was 2d, had also a well arranged lot of plants; as likewise had Mr. Cooke, who took 3d. Lycopodiums were contributed in beautiful condition by Mr. H. Scammell, and Mr. H. Aylward, gr. to Mrs. Foster, who were equal 1st.

ROSES were not forthcoming in such quantities as usual here, no doubt owing to the number of exhibitions on at the same time, and to the scorching weather, which makes short work of the flowers. In the open class for forty-eight varieties, single blooms, Messrs. Bunyard & Co., Maidstone, took the lead with a very good stand, well varied in colour, in addition to the flowers being fine, and just to the hour; 2d, Mrs. Wollard, Lewes; 3d, Mr. G. W. Piper, Uckfield. Twenty-four Roses, single blooms.—With these Messrs. Bunyard were also 1st, here again having a beautiful lot of flowers; Mrs. Wollard 2d. In the amateurs' class for twenty-four there were some good flowers staged, Mr. Ridout, gr. to T. B. Haywood, Esq., Reigate, taking 1st; Mr. Simmons, gr. to the Rev. R. C. Hales, Henfield, 2d. Twelve Roses.—1st, Mr. Ridout; 2d, Mr. Allen. Teas, as usual here, were beautifully shown, the Rev. J. G. Hodgson, Hythe, being 1st, with twelve, amongst which Catherine Mermet, Jean Ducher, Devoniensis, Madame Lambard, and Souvenir de Paul Néron, were represented by beautiful flowers; 2d, Mr. Allen, gr. to J. H. Field, Esq.

TABLE DECORATIONS are always plentifully shown here, and the present occasion was no exception. With three groups, Mr. J. K. Chard, Clapham, was placed 1st; 2d, Mrs. Bishop, Croydon; 3d, Mrs. Fennell, with a chastely beautiful set, in which the ordinary tall stands were dispensed with. Single stand: 1st, Mr. Bishop; 2d, Mrs. Gilmour, Hawkhurst; 3d, Mr. Chard. Single stand of wild flowers: Miss Kinmont, Canterbury, had 1st; 2d, Miss K. R. Ware, Frant. Bouquets were forthcoming in quantity, Mr. Gilbert being 1st and 2d for a bride's with beautiful examples; 3d, Mrs. Bishop. Ball bouquets: Mr. J. K. Chard was placed 1st, Mr. Gilbert 2d. Buttonhole bouquets: 1st, Mr. G. W. Piper; 2d, Miss K. R. Ware.

Collections of cut stove and greenhouse flowers in eighteen varieties were nicely shown by Mr. Johnstone, gr. to the Marchioness of Camden, and Capt. Green, Mr. Bolton, and Mr. Turner, who took the prizes in the order of their names. Wild flowers, unlimited as to the number, correctly labelled with their botanical and English names, are unusually well shown at Tunbridge Wells, and are an interesting and instructive feature. Miss K. R. Ware took the lead with a numerous and well arranged lot; Mr. Dixon, gr. to Sir Spencer Wilson, Fletching, being 2d.

FRUIT.—There was a considerable display of fruit, most of which was in good condition. For a collection unlimited as to the number of dishes, quality and arrangement to be taken into account, 1st honours went to Mr. Waterman, gr. to H. A. Brassey, Esq., Aylesford; his best kinds were Black Hamburgh and Buckland Sweetwater Grapes, in nice condition; a Queen Pine, Nectarines, Peaches, Strawberries, and Cherries. Mr. Hopgood, gr. to Sir Julian Goldsmid, Tonbridge, was a good 2d, his most meritorious dishes being Black Hamburgh and Foster's Seedling Grapes, Peaches, and Nectarines; 3d, Mr. Fennell. There were eleven exhibitors in the class for three bunches of black Grapes, most of which were in good condition. Mr. Henderson, gr. to F. Deacon, Esq., Tonbridge, had 1st, with Black Hamburgh, well finished, the bunches moderate in size; 2d, Mr. Moorhouse, who had larger bunches but not so heavily bloomed; 3d, Mr. Morris, gr. to C. F. Ebden, Esq., who likewise had good examples. Three bunches of white Grapes.—1st, Mr. Gore, gr. to Captain Taylor, Hastings, who had Muscat of Alexandria, very well coloured for the season; 2d, Mr. Waterman, with Buckland Sweetwater. Three bunches of any other three varieties of Grapes.—With these also Mr. Gore took the lead, having a nice stand, in which Madresfield Court was well coloured and even in berry; 2d, Mr. Allen; 3d, Mr. Bolton. Six Peaches.—1st, Mr. A. Bashford, gr. to Mrs. Stoddart Douglas, Tunbridge Wells; 2d, Mr. Fennell. Six Nectarines.—1st, Mr. J. Bashford, gr. to J. Corlett, Esq., East Sutton; 2d, Mr. Pope, gr. to J. J. Barrow, Esq. Scarlet-fleshed Melon.—1st, Mr. Moorhouse; 2d, Mr. Rann. Green-fleshed Melon.—1st, Mr. Moorhouse; 2d, Mr. Hopgood. Strawberries were well shown, Mr. Bridger, gr. to Lord de l'Isle and Dudley, taking 1st, with a grand dish of Sir Joseph Paxton; 2d, Mr. Amies, with Brüish Queen.

Chiswick, Turnham Green and District Horticultural: *July* 3.—The annual exhibition of this Society took place as usual in the gardens of the Royal Horticultural Society at Chiswick, a commodious tent having been erected on the fine piece of turf south of the Council chamber. It is a matter for regret that this Society does not grow in extent and importance commensurate with the growth of the neighbourhood, for a more fitting place in which to hold a show scarcely exists in the neighbourhood. The weather was all that could be desired, and the arrangements made by Mr. A. F. Barron and his staff perfect, but anything like an appropriate company was not forthcoming; while the productions, generally of a high-class character, were limited in quantity. There were some charming groups of plants arranged for effect—in the nurserymen's class Messrs. W. Fromow & Son, Turnham Green, beat Mr. W. Brown, florist, Richmond, staging a group arranged with excellent taste, and composed of Palms, Crotons, Orchids, Ferns, &c.; nor was Mr. Brown very far behind, for he is an adept in the art of floral decoration. There were five small groups, and here Mr. Wright, gr. to E. H. Watts, Esq., Chiswick, was 1st with a charming arrangement; Mr. E. Chadwick, gr. to E. M. Nelson, Esq., Ealing, being 2d; and H. Pearks, Esq, Chiswick, 3d. Two extra prizes were awarded. Mr. Chadwick was well ahead with the best six stove and greenhouse plants in flower, having good examples of Allamanda Hendersoni, A. Chelsoni, Vinca alba, Darwinia tulipifera, and Plumbago capensis; 2d, Mr. Wright, who had nice specimens of Clerodendron Balfourianum, Bougainvillea glabra, Odontoglossum vexillarium, and Cattleya gigas.

White Fuchsias and zonal Pelargoniums were of inferior quality. Tuberous-rooted Begonias were well shown by Mr. Harding, gr. to J. R. Starling, Esq., The Chestnuts, Gunnersbury; Mr. Chadwick being 2d. Both lots were nicely grown and flowered. Gloxinias were a leading feature, being well grown and flowered. The best twelve came from Mr. Starling, and the best six from Mr. J. J. Flack. Some very fine Achimenes were shown by Mr. Wright; his 1st prize six plants were very large, finely grown and flowered. Some smaller but well done plants were shown by Mr. J. R. Starling.

Foliage plants were a leading feature, and, being large, proved of great service in securing effect. Mr. W. Brown, Richmond, who had Areca cruenta, Ptychosperma Alexandræ, an extremely elegant Palm; Areca Herbstii, Croton variegatus, Pandanus Veitchii, and Dracæna Baptistii; 2d, Mr. Chadwick, whose best examples were Croton variegatus, Seaforthia elegans, Pandanus Veitchii, Latania borbonica, and Croton angustifolius; 3d, Messrs. W. Fromow & Son. Ferns were small but finely grown; Mr. Wright had the best six, Mr. H. G. Lake being 2d. Caladiums were very nice, especially the six pretty specimens shown by Mr. J. R. Starling, which were admirably grown; the sorts were Meyerbeer, Chantini, candidum, Cannærti, Prince Albert Edward, and Luddemanni. 2d, Mr. H. Pearks, with a good lot but rather drawn. Lycopods were finely shown by Mr. Wright very large and admirably grown specimens; Mr. Chadwick being 2d. Plants for table decoration were also a good feature.

In the cut flower class the best twenty-four blooms came from Messrs. G. Bunyard & Co., Maidstone, the Misses Christy, Kingston, being 2d. Stands of twelve bunches of cut flowers were also shown, Mr. Chadwick having the best lot. Cut blooms of Gloxinias, shown in pairs on stands, were a little disappointing. Messrs. W. Fromow & Son had the best three bouquets; Mr. W. Brown being 2d. There were vases of flowers for table decoration shown by ladies; among them a charming arrangement in wild flowers shown by Miss Barron, which was awarded a 1st prize in that class. There were a large number of bouquets of wild flowers shown by children, some of them very pretty indeed.

Fruit was not extensively produced, but there were some good Black Hamburgh Grapes from Mr. Wright and Mr. Baird, gr. to C. A. Daw, Esq., Ealing; the latter had the best two bunches of white Grapes, staging Duke of Buccleuch and Foster's Seedling, both very good. Other fruits consisted of Strawberries, Cherries, Melons, &c.

There was a very good lot of vegetables, the season considered. Mr. C. J. Waite had the best nine dishes, and Mr. Chadwick the best three dishes of Potatos, the new Midsummer Kidney being very good. In the class for special prizes for six dishes of vegetables, given by Messrs. Sutton & Sons, there were nine competitors, Mr. C. J. Waite being 1st, and Sir H. Meux 2d. Messrs. Carter & Co. offered prizes for three dishes of their new Peas, Mr. H. W. Ward, gr., Longford Castle, being 1st, with a very good lot; and Mr. J. Morton, of Aylesbury, 2d.

Mr. May, gr. to the Marquis of Bute, Chiswick House, sent a well arranged group of miscellaneous plants, not for competition; Mr. Webb, manager to Messrs. C. Lee & Son, The Arboretum, Isleworth, sent a fine collection of hardy ornamental plants; and Mr. Geo. Cannon, their manager at Ealing, some boxes of very fine cut Roses.

Salisbury Rose Show: *July* 9.—The first Rose show held in this city in association with the National Rose Society took place in the Episcopal grounds on Wednesday last, and though the weather was showery in the morning the sun shone out in the afternoon, with the result that the grounds and large exhibition tent were crowded by visitors, who were loud in their praise of the queen of flowers, which, notwithstanding the frosts of April and the dryness of the season, were shown in capital condition, and with the following results.

Division A. NURSERYMEN.—For forty-eight, distinct, single trusses, 1st, Messrs. Keynes, Williams & Co., Castle Street Nurseries, Salisbury, with a grand lot, consisting of François Michelon (prize Medal Rose), Duke of Edinburgh, Marguerite de St. Amand, Rosieriste, La France, William Koelle, Marie Baumann, Reynolds

Hole, Merveille de Lyon, Louis van Houtte, Marie, Victor Verdier, Madame Willermoz, John Bright, Edouard Morren, A. K. Williams, Beauty of Waltham, Souvenir d'un Ami, Baron de Bonstettin, Magna Charta, Duke of Wellington, Madame Lacharme, Lord Macaulay, Paul Néron, Madame Emilie Fontaine, Archiduchesse d'Autriche, Sénateur Vaisse, Comtesse d'Oxford, Auguste Rigotard, Antoine Ducher, Xavier Olibo, Madame Nachury, Madame Gabrielle Luizet, Marquise de Castellane, Duke of Teck, Niphetos, Charles Lefebvre, Etienne Levet, Fisher Holmes, Alba rosea, Bartholemy Joubert, Madame Eugène Verdier, Ferdinand de Lesseps, La Rosiére, Camille Bernardin, Catherine Mermet. This stand was also awarded the Silver Cup. The 2d prize went to Messrs. Paul & Son, Cheshunt, whose best blooms were A. K. Williams, Reynolds Hole, Fisher Holmes, Countess of Oxford, Sultan of Zanzibar, Mons. E. Y. Teas, Edward André, Beauty of Waltham, Le Havre, Ferdinand de Chaffolte ; 3d, Mr. B. Cant, Colchester, whose collection was only a few points behind the preceding ones. Class 2.—For twenty-four distinct trusses of each, Mr. George Prince, Oxford, secured chief honours with a grand lot of well-formed fresh blooms, the varieties being Prince Arthur, Duc de Morny, Catherine Mermet, Marie Baumann, Souvenir d'un Ami, Prince Camille de Rohan, Jean Ducher, Duke of Connaught, Marie van Houtte, Maréchal Niel, Souvenir d'Elise Vardon, Reynolds Hole, Mdlle. Thérèse Levet, Lord Macaulay, Niphetos, Xavier Olibo, &c. ; 2d, Messrs. Keynes & Co., with a stand only a few points behind ; and the same may be said of the 3d prize stand lot in this class, which was awarded to Messrs. Paul & Son. Class 3. Division B.—For 36 distinct, singles, Messrs. Cooling & Son, Bath, were awarded the 1st prize for fresh blooms, consisting of François Michelon, Marie Baumann, Xavier Olibo, Ferdinand de Lesseps, Lady Sheffield (very fine), La France, Alfred Colomb, &c. ; 2d, Mr. Frank Cant, Colchester, with large fresh blooms ; the 3d being secured, with a fine even lot, by Messrs. Cross & Steer, Canal, Salisbury. For eighteen, distinct, three trusses of each, Messrs. Cooling & Son was again to the front with, among others, Xavier Olibo, Pride of Waltham, Alfred Colomb, Louis van Houtte, Comtesse d'Oxford, La France, Marie Verdier, and Reynolds Hole ; the 2d and 3d going respectively to Mr. John House, Peterborough, and Mr. J. Davis, Wilton. Class 5. For twelve Teas or Noisette (extra class), the 1st honour was awarded to Mr. Prince, Oxford, who showed fine blooms of Comtesse Nadaillac, Marie van Houtte, Etoile de Lyon, Madame Jamin, Maréchal Niel, Souvenir d'un Ami, Niphetos, Madame Cusin, Madame A. Jacquier, Jean Ducher, Souvenir d'Elise Vardon, and Francisca Kruger ; the 2d and 3d being awarded, in the order specified, to Mr. B. Cant and Messrs. Paul & Son.

AMATEURS' CLASSES. Division C.—For thirty-six, distinct, single trusses.—1st, Thomas B. Haywood, Esq., Reigate ; 2d, Rev. J. H. Pemberton, Romford ; 3d, A. Slaughter, Esq., Steyning. The 1st prize stand, which was also awarded the Silver Cup presented by the Salisbury Local Committe, included Duchesse de Morny, Dr. Andry, Lady Mary Fitzwilliam, A. K. Williams, Baroness Rothschild, Charles Lefebvre, Countess of Oxford, Pierre Notting, Etienne Levet, Horace Vernet, Etoile de Lyon, Duke of Wellington, Reynolds Hole, Constance Nadaillac, Lady Sheffield, Prince Arthur, &c. The most telling blooms in the 2d stand were Duke of Wellington, Dr. Andry, Charles Lefebvre, and Beauty of Waltham. In the class (7) for eighteen distinct singles the 1st prize was secured by W. J. Grant, Esq., Ledbury, with a nice even fresh lot of blooms ; and the 2d and 3d by T. W. Girdleston, Esq., Sunningdale, and Miss Watson Taylor, Headington. And in class 8, for twenty distinct singles, the prizes were awarded to S. P. Budd, Esq., Bath ; Captain Christy, Sidmouth ; and Thomas Hobbs, Esq., Bristol, in the order in which their names appear. In class 9, for eighteen distinct singles, Mr. S. P. Budd was to the front again, and Mr. Thomas Hobbs, Bristol, and the Rev. C. Eddy, 2d and 3d. Class 10, for twelve distinct single trusses.—E. M. Bethune, Esq., Horsham, was 1st, being followed closely by J. T. Strange, Esq., Reading, and Captain Ramsey, Fareham ; and in class 11, for six distinct, single trusses, the prizes were awarded as specified—to Edward Mawley, Esq., Croydon, Rev. G. Gardiner, Box Vicarage, and the Rev. H. Cheales, Andover. The 1st position in class 12, for twelve Teas or Noisettes, was awarded to E. M. Bethune, Esq., the 2d and 3d going respectively to the Rev. J. H. Pemberton, and Thomas Hayward, Esq. Class 13, for six Teas or Noisettes.—The 1st prize out of nine lots was awarded to Joseph Smith, Esq., Warminster, and the 2d and 3d to Thomas Hobbs, Esq., and Captain Christy, in the order named. Class 14, for twelve single dark trusses of any hybrid perpetual (dark).—1st, Mr. Prince, Oxford, with Marie Baumann ; 2d, Messrs. Cooling & Son, with Alfred Colomb ; and 3d, Mr. B. Cant, with Reynolds Hole ; and for a like number of (H.P.) light Messrs. Cooling & Son were 1st, with La France ; 2d, Messrs. Keynes & Co., with François Michelon ; and Messrs. Paul & Son 3d, with Merveille de Lyon. In this class the competition was very keen, there being ten lots staged, including some splendid stands of Madme Gabrielle Luizet (which in the opinion of many ought to have been placed), from Messrs. Cross & Steer, which firm also showed several grand stands, not for competition. Class 16. For twelve single trusses of any Tea or Noisette.—1st, Mr. Frank Cant, with splendid trusses of Boule d'Or (this lot, which in form and freshness was as near perfection as could be, was greatly admired) ; 2d, Mr. G. Prince, with Comtesse Nadaillac, to a bloom of which the Silver Medal presented for the best Tea Rose in the nurserymen's class was awarded ; 3d, Messrs. Keynes & Co., for grand blooms of Marie van Houtte. This well-known firm also showed twelve fine blooms of Niphetos, and a like number of Alba rosea in fine form.

In the classes for home-grown Roses the 1st place was given, in class 22, to Mr. Hatch, Salisbury, for six trusses ; and in class 23, for twelve distinct singles, Captain Wigram, Downton, was placed 1st, and Mr. J. Curtis, Salisbury, 2d ; and in a similar class Captain Wigram and the Lord Bishop of Salisbury (gr., Mr. Smith) were 1st and 2d, in the order named ; and for twelve trebles, distinct, Joseph Smith, Esq., Warminster, was 1st ; the 2d and 3d going respectively to Phillip Grubb, Esq., Warminster, and Rev. W. Hickman, also of Warminster. For twenty-four distinct, singles, Mr. J. Hatch, Salisbury, secured the 1st place ; and Mr. F. W. Flight, Winchester, whose Madame Lambard secured the Silver Medal presented for the Tea or Noisette bloom, among the home or district grown Roses ; 3d, J. Rawlins, Esq., Warminster.

For six decorative plants, the prizes were awarded to Captain Wigram, the Lord Bishop of Salisbury, and Sir F. H. Bathurst, Bart., in the order named. Sam. Griffin, Esq., Wilton Road, Salisbury, also contributed a well grown lot of Ferns, including good specimens of Adiantum gracillimum, A. cuneatum, &c., as also did Mr. Smith, from the Palace gardens, including a fine A. farleyense.

In conclusion, a word of praise is due to the local hon. secretary and Mr. Griffin, for the manner in which they endeavoured to meet the wishes and wants of exhibitors.

Nottingham Horticultural Floral Fête : *July 9 and 10.*—Mapperly Park was the site chosen for the horticultural contests of Notts and the adjoining counties. The Society was extremely unfortunate in the day fixed, as rain fell almost uninterruptedly during the afternoon, so that, however much good it may have done to the suffering farmers, it brought only loss and embarrassment to our horticultural friends. The attendance was exceedingly scanty owing to the wet, so that the funds must necessarily suffer much diminution, which is the more to be regretted in consequence of the Society meeting with less generous support than its aims entitle it to. There were three large marquees, none of which could be said to be overflowing with specimens of the gardener's skill. One of these was mainly filled with groups of miscellaneous plants arranged for effect, in squares not exceeding 150 square feet ; these being disposed in a line in the centre of the tent, and having free access on all sides, were observed under unusually favourable conditions. The only fault, if fault must be found, was that the gardeners had been too liberal with their plants, putting them so thickly together, that the individual beauties of many were lost. This remark applies with equal force to all the specimens of bouquet work, and to nearly all the efforts in table decoration observed. The 1st prize for a group was awarded to S. Thacker, Esq., Ball Street, St. Anns, a gentleman who keeps no regular gardener, but whose plants, in most of the classes in which he exhibited, were exceedingly creditable to him as a cultivator. The group was lightly disposed, and consisted of many small examples of Palms, Dracænas, Alocasias, Tillandsias, Ferns in great variety, Crotons, Dieffenbachias, Marantas, and stove herbs too numerous to specify within our limits. The foreground was treated very artistically, the smaller specimens standing independently on hillocks of or on the plain surface of a black green moss this foreground forming a kind of rectangular recess. Mr. J. Edmonds, gr. to the Duke of St. Albans, Bestwood Lodge, was awarded the 2d prize, for a group disposed in quite another method, but which was also effective. It contained many fine Crotons, Orchids, Eucharis, Tuberoses, tuberous Begonias, Adiantums, Marantas, &c. The 3d prize went to Mr. German, gr. to T. B. Cutts, Esq., Malvern House, Nottingham, who had likewise a good lot of well grown stuff, amongst them being several fine new Crotons, first-class Amaryllis, capital Dracænas and Palms, and the deliciously scented Hedychium venustum ; 4th, Mr. J. Lyon, gr. to Viscountess Ossington, Ossington Manor, Retford, with plants not differing greatly from the preceding groups ; 5th, Mr. J. Lamb, gr. to P. Sewen, Esq., Pelham Crescent, Nottingham. Other groups, much smaller than the above, were displayed along the sides of this tent, as were common flat nursery baskets filled with Caladiums, Crotons, Dieffenbachias, Spiræa purpurea, Lisianthus Russelianus, &c., which were rather pretty objects so treated. For groups of miscellaneous plants, not less than twelve and not more than twenty, 1st, Mr. German ; 2d, Mr. John Meadows, gr. to C. J. Cox, Esq., Rock House, Basford ; 3d, Mr. H. Ralphs, gr. to J. Booth, Esq., Fern House.

Stove and greenhouse plants formed a main portion of the show, occupying as they did the greater part of one of the large tents, and consisted of some excellent examples of both flowering and foliage plants. For the best six, three of which were the former and three the latter, 1st, Mr. J. Ward, gr. to T. H. Oaks, Esq., Riddings Park, in whose collection we noticed good examples of Clerodendron Balfourianum, a beautiful Kalosanthes Frederick Dubois, 3 feet high and as much in diameter ; Statice profusa, even larger ; Chamærops excelsa, and Crotons Weismanni and Johannis ; 2d, Mr. Lyon, Ossington Park, with Alocasia macrorhiza variegata of robust growth, a beautifully coloured Croton Queen Victoria, Trachelospermum jasminoides, and Ixora Williamsii ; 3d, Mr. J. Meadows, with good Croton pictus and Clerodendron Balfourianum. In this tent, not for competition, Messrs. J. R. Pearson & Sons, the Chilwell Nurseries, had displayed some handsome wreaths, crosses, &c., that received high commendation ; and a few of Messrs. John Laing & Co.'s Begonias as plants and specimens of bloom were seen. Ornamental foliage plants were well shown by Mr. J. Ward, who was awarded the 1st prize for six examples, consisting of Dasylirion glaucescens, a fine plant of Cycas revoluta, with abundant leafage ; Croton Youngii, &c. S. Thacker, Esq., took 2d, his Croton Victoria, a young, vigorous plant of great merit, being the best Croton at the show : the other good plants in this group were Maranta zebrina and Phœnix dactylifera. Mr. J. Lyon took the 3d prize for his Alocasia macrorhiza variegata. The prize for the best stove plant in bloom was awarded to Mr. J. Ward for a bright example of Anthurium Andreanum with nine blooms ; and for the best ornamental foliage plant—1st, S. Thacker, Esq., Wall Street, for Cycas revoluta ; 2d, Mr. Swanwick, gr., Sherwood Lodge ; 3d, Mr. Lyon ; and for one greenhouse plant in flower, Mr. Ward, Mr. J. Meadows, and Mr. S. Harvey, Blythe Street Nursery, were respectively 1st, 2d, and 3d. For the best greenhouse foliage plant—1st, Mr. G. Kirke, gr. to John Whitman, Esq., 7, Villa Road, Nottingham, for Dasylirion gracile ; 2d, Mr. J. Ward, for the rare Beaucarnea recurvata—a very old plant. Table plants were of the usual character, and contained nothing that was novel in sorts. Exotic Ferns were shown in considerable abundance, and many plants of a large size were observed in the different lots. Here Mr. J. Ward took the 1st prize for Microlepia hirta, a large, healthy specimen ; Gymnogramma Laucheana, Neottopteris Nidus-Avis, over 6 feet in height ; Gleichenia rupestris glaucescens, Cyathea Smithi, and a Dicksonia antarctica. 2d, Mr. Eddington, gr. to H. Ashwell, Esq., Woodthorpe Cottage, with two good plants of Gymnogramma dealbata and sulphurea ; 3d, Mr. Swanwick. In the class for three exotic Ferns, Mr. Lyon and Mr. J. Meadows divided the honours. The best single specimen brought a fine example of Cibotium Schiedei from Mr. German, who was placed 1st, whilst Mr. Lyon took 2d for a robust Woodwardia radicans, and S. Thacker, Esq., 3d. A few examples of Tree Ferns were also shown, but there was nothing calling for especial mention—Mr. Ralphs, gr. to — Booth, Esq., being 1st, and Mr. Meadows 2d. Some well grown Tuberous Begonias were shown by Mr. Sam. Harvey, these consisted of old kinds, but telling colours—a 1st prize was awarded ; Mr. E. Wooley, gr. to Mrs. Herbert, The Ropewalk, Nottingham, was awarded the 2d, and Mr. Ralphs the 3d prize. Some brilliant zonal Pelargoniums as medium-sized examples were, with no name attached, exhibited by Messrs. J. R. Pearson & Sons. It is much to be regretted that the naming of exhibits is not more insisted on at horticultural shows, and here this defect was abundantly noticeable in almost every class, robbing the show of much of its value to *connoisseurs* and professionals. Coleus were observed in considerable variety, but none were particularly novel ; the like may be remarked of Caladiums.

The Fuchsias had the centre portion of a large marquee to themselves, being arranged in two imposing straight lines down the entire length, and were almost without exception good specimens of culture. They were all grown as pyramids, and would range from 6—7 feet in height, regular, even, and mostly full of flower. For the best six, 1st, Mr. German ; 2d, T. Argill, Esq. For the best three, 1st, Mr. Wooley ; 2d, Mr. German. Gloxinias were exhibited in some numbers, but were below the standard we have seen them further south ; and zonal and double-flowering Pelargoniums were not very brilliant of their kind. Some nice healthy pans of Selaginellas were exhibited by Mr. Collins, gr. to H. M. Barns, Esq., Elm Bank, but there was no competition. A few Orchids added their attractions to the show, Mr. J. Edmonds showing a very fine and large Lælia purpurata ; Mr. Meadows a grand bit of Oncidium macranthum, a small Cattleya Mendeli, and Cypripedium barbatum, and a good variety of Epidendrum vitellinum. The Petunia was shown by Mr. H. Ralphs, who obtained the 1st prize for two doubles and two singles ; Mr. Ward the 2d, and Mr. Meadows, 3d.

The cut blooms were well shown by—1st, Mr. Lyon, with chiefly stove blooms, in well chosen kinds ; 2d, Mr. Ward ; 3d, Mr. Swanwick, gr. to C. J. Seeley, Esq., M.P. The hardy herbaceous plants came out in great force, exhibiting their use in certain kinds of gardening, but almost useless to those unacquainted with them, by reason of the general omission of the names. Bouquets, table decorations, buttonhole bouquets, in all imaginable varieties, were there. Of the first-named, we are forced to admit, they did not exactly please us—the arrangement wanting a lighter hand. Indeed it is doubtful if a heavy-handed gardener has the requisite lightness of touch that is essential for the good bouquet maker. Some good intermediate Stocks were seen, Mr. J. Foljambe being 1st, Mr. J. Collins 2d, and Mr. Corah 3d. Roses of course found a prominent place at the show—some few good flowers, considerering the prevalent dry weather, were observed in all the collections. The winner of the 1st prize for the champion bloom was Mr. J. Foljambe, on whose stand were nice blooms of Dupuy Jamain, Etienne Levet, Alfred Colomb, François Michelon, Dr. Andry, Louis van Houtte—the winning bloom being Baron Bonstettin. Mr. H. Frettingham took the 1st prize for the best thirty-six single trusses, his Baroness Rothschild, Madame Gabrielle Luizet, Marie Baumann, Souvenir de Späe, Lady Sheffield, and Dr. Andry being very good. For twenty-four single trusses Mr. Howe was placed 1st, the stand showing fair examples of Camille Bernardin, Dr. Andry, A. K. Williams, Madame Victor Verdier, and Dupuy Jamain ; 2d, Mr. J. Foljambe, whose Charles Lefebvre, Captain Christy, and Marie Baumann were of some merit ; 3d, Mr. H. Frettingham ; 4th, Mr. F. Yates ; 5th, Mr. C. R. Palmer. Mr. J. Foljambe won also the 1st prize for the best dozen distinct blooms, his Alfred Colomb, Etienne Levet, and Dupuy Jamain being good examples ; Mr. Howe was awarded the 2d prize, Mr. Frettingham 3d, and Mr. Yates again had to be contented with the 4th place.

FRUIT.—For the fruit prizes some very superior items were staged, the 1st prize for the collection of six varieties

being taken by Mr. J. Edmonds, with a handsome Queen Pine, just in the right state; very large Chancellor Peaches, Highcross Hybrid Melon, and Black Grapes, well coloured and large in bunch and berry; Muscat of Alexandria were also of fair quality. The 2d prize was awarded to Mr. J. Ward, who had splendid Muscat Hamburgh Grapes and Queen Pines; 3d, Mr. Roberts, gr., Prestwold, who had Stirling Castle Peach in fine order; 4th, Mr. Webb. For Black Hamburgh Grapes, two bunches, 1st, Mr. J. Edmonds, with heavily-shouldered, perfectly black bunches; 2d, Mr. J. Ward, a good sample, also remarkable for colour; 3d, Mr. D. Melville, gr. to Mrs. Hornsby. The white Grapes were generally good in colour and not deficient in other qualities: 1st, Mr. German, for Muscat of Alexandria of medium sized bunch but large of berry; 2d, Mr. Webb, gr. to J. H. N. Sutton, Esq., Kelham Hall, for good bunches of Foster's Seedling; 3d, Mr. Ebbutt, gr. to F. Wright, Esq. Foster's Seedling Grape was shown by a great number of the unsuccessful men. Pines seem to find favour in the county, and many fine examples were seen in the two classes in which they came. For the best fruit Mr. Roberts was awarded 1st prize for a Queen of fine proportions; Mr. J. Edmonds 2d for the same variety; 3d, Mr. T Hare. gr. to R. H. Neville, Esq., Grantham. There was an abundance of seasonable small fruits, the Strawberries being especially fine.

The Vegetable classes brought many good things forward, Cauliflowers, Cucumbers, Cabbages, Onions, and Tomatos being the best of them. Peas were generally small of pod, and Potatos very inferior, both in size and outward appearance.

Messrs. Barron & Son, Elvaston, exhibited a group in the open of handsome Conifers, Hollies, and other hardy trees and shrubs, as also did Mr. Burrel, nurseryman. Local and distant firms contributing specimens of hothouses, patent glazing, &c.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, JULY 9, 1883.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.		
July	In.	In.	°	°	°	°	°	°				In.
3	29 85	+0.03	84 0	55.0	29.0	69 3	+ 8.1	58.1	67	E.		0 00
4	29 73	—0 07	86 5	60 5	26 0	72.3	+ 10 0	59 2	62	E.N.E.: E.		0.00
5	29 78	—0 03	77 0	61.0	16 0	66.4	+ 4 9	62.8	88	S.: S.S.E.		0 08
6	29 80	—0 01	71 6	56 8	14.8	61.3	— 0 3	56 3	82	W. SW.		0 13
7	29 80	—0 01	77.0	55.2	21 8	64.9	+ 3 1	56.4	73	S.		0 00
8	29 72	—0.05	84 0	56 0	28.0	70.8	+ 8 8	56 1	60	S.E.: S		0 00
9	29 01	—0.21	84.0	52.5	21.5	70 8	+ 8 7	60 8	69	S.: S.S.E.		0.00
Mean	29.76	—0.06	80.6	58.1	22.5	68.0	+ 6.2	58.5	72	S.		0.21

July 3.—Very fine day and night.
— 4.—Distant thunder between 12.30 P.M. and 1 P.M. Very fine day and night.
— 5.—Dull, rain from 2 P.M. to 3 P.M., fine afterwards.
— 6.—Occasional light showers of rain, one flash of lightning with thunder in the afternoon. Fine clear night.
— 7.—Dull morning, fine afternoon and evening.
— 8.—Very fine day, cloudy at midnight.
— 9.—Fine day, few spots of rain falling at 2 30 P.M. Fine afterwards.

LONDON: *Atmospheric Pressure.*—During the week ending July 5, the reading of the barometer at the level of the sea decreased from 30.17 inches at the beginning of the week to 29.99 inches by 3 P.M. on June 29th, increased to 30.22 inches by 9 A.M., decreased to 30.20 inches by 3 P.M., and increased to 30.23 inches by midnight on July 1, decreased to 29.98 inches by 3 P.M. on the 3d, decreased to 29 88 inches by 3 P.M. on the 4th, and was 29.98 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.05 inches, being 0.06 inch lower than last week, and 0.06 inch higher than the average of the week.

Temperature. — The highest temperature in the shade in the week was 86°.5, on July 4th; the highest on June 29th was 73°. The mean of the seven high day temperatures was 78° 2

The lowest temperature was 52°, on June 30th; on July 5th the lowest temperature was 61°. The mean of the seven low night temperatures was 56°.4.

The greatest range of temperature in one day was 29°, on July 3; the smallest was 16°, on June 29 and July 5. The mean of the seven daily ranges was 21°.8.

The mean temperatures—on June 29, 62°.9; on the 30th, 63°.2; on July 1, 65°.4; on the 2d, 64°.4; on the 3d, 69°.3; on the 4th, 72°.3; and on the 5th, 66°.4; and these were all above their averages by 1°.6, 2°, 4°.2, 3°.3, 8°.1, 10°, and 4°.9 respectively.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 144°, on the 4th. The mean of the seven readings was 128°.9.

The lowest reading of a minimum thermometer was 44°.5, on June 30. The mean of the seven readings was 47°.4.

Rain.—Rain fell on two days, to the amount of 0.19 inch.

ENGLAND: *Temperature.*—During the week ending July 5 the highest temperatures were 88°.2, at Cambridge, 86°.5 at Blackheath, 85°.8 at Nottingham; the highest at Sunderland was 66°, at Plymouth 73°, and at Bristol 73°.7. The general mean was 79°.5.

The lowest temperatures were 43°.2 at Nottingham, 44° at Truro, 45°.5 at Wolverhampton,; the lowest at Liverpool was 54°.5, at Preston 54°, and at Blackheath, Bolton, and Bradford 52°. The general mean was 49°.3.

The greatest ranges were 42°.6 at Nottingham, 41°.5 at Cambridge, 34°.5 at Blackheath; the smallest ranges were 16° at Sunderland, 22°.5 at Liverpool, 25°.1 at Bolton. The general mean was 30°.2.

The mean of the seven high day temperatures was 81°.3 at Cambridge, 80°.9 at Nottingham, 78°.2 at Blackheath; was lowest at Sunderland, 61°.1, at Plymouth 69°.9, and at Bristol 70°.9. The general mean was 74°.2.

The mean of the seven low night temperatures was highest at Preston, 57°.4, at Liverpool 57°, at Blackheath 56°.4; and was lowest at Hull, 50°.4, at Cambridge and Wolverhampton 51°. The general mean was 54°.1.

The mean daily range was greatest at Cambridge, 30°.3, at Nottingham 29°.4, at Hull 26°.4; and was least at Sunderland, 8°.5, at Liverpool 16°, at Plymouth and Preston 16°.3. The general mean was 20°.1.

The mean temperature was highest at Blackheath, 66°.3, at Leeds 64°.6, at Cambridge 64°.3; and was lowest at Sunderland, 54°.9, at Plymouth 59°.9, at Bristol 60°.3. The general mean was 62°.3.

Rain.—The largest fall was 2.30 inches, at Bristol, of which 2.15 inches fell on June 29, 0.67 inch at Hull, 0.60 inch at Liverpool; the smallest fall was 0.02 inch at Brighton, 0.04 inch at Bradford, and 0 05 inch at Leeds. The general mean was 0.43 inch.

SCOTLAND: *Temperature.*—During the week ending July 5, the highest temperature was 80°, at Edinburgh; at Aberdeen the highest was 67°.5. The general mean was 74°.1.

The lowest temperature in the week was 50°.5, at Glasgow; at Greenock the lowest temperature was 52°. The general mean was 51°.2.

The mean temperature was highest at Paisley, 63°.5, and lowest at Aberdeen, 56°.9. The general mean was 59°.8.

Rain.—The largest fall of rain was 1.49 inch, at Greenock; and the smallest fall was 0.02 inch, at Aberdeen. The general mean fall was 0.5 inch.

JAMES GLAISHER, F.R.S.

Law Notes.

BENYON *v.* GRIEVE AND SMITH.—In the High Court of Justice, Chancery Division, Mr. Justice Kay had recently before him the case of the Rev. E. R. Benyon, deceased—Benyon *v.* Grieve and Smith, of Bury St. Edmunds. This case raised a short but rather interesting point of construction affecting the defendant, Mr. Peter Grieve. Mr. Smith, one of the defendants, claimed under the will of the deceased £100, a year's wages, and after a very short time the judge decided that Smith, being a servant at the time of the decease of Mr. Benyon, was undoubtedly entitled to that sum. As to Mr. Grieve the case presented a different aspect. According to the report in the *Times*, the will of the testator, who died in July, 1883, contained a bequest in the following terms:—"To each of my servants who shall at my death have been in my service twelve calendar months or longer, one year's wages, in addition to anything owing by me, and to my gardener, Peter Grieve, £300 in addition." In the will itself the clause read:—"To each of my servants who shall at my death have been in my service twelve calendar months or longer, one year's wages, in addition to anything owing by me. And to my gardener, Peter Grieve, £300 in addition." The will was dated November 23, 1876, and in August, 1880, Mr. Grieve, who had been in the testator's service for 33 years, relinquished his situation, so that the question arose whether in these circumstances he was entitled to the legacy of £300 or not. It appeared that when he left the testator made him a present of £100, though this fact did not, of course, affect the construction to be put upon the will. Mr. Grosvenor Woods and Mr. Jason Smith (instructed by Messrs. W. Salmon & Son, of Bury St. Edmunds) appeared for the several parties. Mr. Justice Kay said that, striking out the words in the middle of the bequest "in addition to anything owing by me," could there be any reasonable doubt that what followed "and to my gardener, Peter Grieve, £300 in addition," was governed by the condition precedent that the servant should have been in his service during the twelve months preceding the testator's death? To what could the expression "in addition" apply, except to the year's wages, which were only given on that condition precedent? In his lordship's opinion such condition applied both to the wages and to the legacy, and this construction was unaltered by the restoration of the words with reference to anything owing. As Mr. Grieve, therefore, did not fulfil the condition, he was not entitled to the £300. The costs of both parties the judge ordered should be paid out of the estate.

Answers to Correspondents.

FASCIATION: *J. C.* This condition is very common in Asparagus. In your case the edges of the upper coils have become united so as to form a cup.

FRUIT SPURS: *Enquirer.* Undoubtedly they are branches, but branches adapted for a particular purpose. The cellular part preponderates over the woody or fibrous portion, as might be expected when the use of the spur as a depôt for nutritious matter is considered.

GRAPES: *J. Calvert.* The heaviest bunch of Grapes that we have any record of was the bunch of Trebbiana exhibited in Edinburgh in September, 1875, by Mr. Curror, of Eskbank, Dalkeith, and which weighed 26 lb. 4 oz.—*C. D.* Some of the berries are shanked, and others scalded. The former is brought about generally by a combination of evils at the roots; the latter by the sun catching the berries early in the day while bathed in atmospheric moisture. — *W. Toomer.* The small caterpillar which has attacked your Grapes is the larva of a little moth (Lobesia reliquana). A correspondent, who wrote about the same pest in our number for August 19, 1882, states that as soon as disturbed it will drop from the bunch, and can then be easily caught. We have had it from one or two other sources this season.

NAMES OF PLANTS: *J. B. J.* Euphorbia Lathyris (the Caper Spurge).—*D. D.* 1, Hypericum perforatum; 2, Erythræa Centaurium; 3, Carduus nutans; 4, Echium vulgare; 5, Hyoscyamus niger (Henbane); 6, Rumex crispus.—*A. W.* Heracleum giganteum.—*T. I. & Sons.* Poa trivialis.

OAKS IN THE ARDENNES: *C. N.* Our correspondent in Namur states that the leaves of the Oaks have been almost completely destroyed by the caterpillar of a moth (Tortrix viridana).

SCOTTISH PANSY SOCIETY: *A Subscriber.* No report was sent by the secretary.

STRAWBERRIES: *E. W. Hoare.* We cannot attempt to name Strawberries from a couple of berries reduced to pulp before they reach us.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

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INTELLIGENT READERS, PLEASE NOTE: — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

STEPHEN BROWN, Weston-super-Mare — Seeds for Summer and Autumn Sowing.

J. BRUNELL & CO., 10, Great Queen Street, Westminster, S.W.—Horticultural Buildings.

EUGÈNE VERVAET DE VOS, Swynaerde, near Ghent, Belgium — Indian Azaleas, and other Stove and Greenhouse Plants.

COMMUNICATIONS RECEIVED:—E. M. (many thanks).—J. V. & S.—F. Sander & Co.—E. P.—C. H.—Lucombe, Pince & Co.—F. K., Namur (best thanks).—J. H.—Wright & Co. (2).—T. C.—J. A. D., Boston, U.S (many thanks).—P. MacO., Cape Town.—H. G. S.—W. V.—W. H. L.—J. B. W.—W. W. G.—J. O'B.—T. W.

DIED, at View Villa, Kilmarnock, on the 5th inst., ROBERT PATON, of the firm of Wm. Samson & Co., seedsmen, aged seventy-five years. Friends will please accept this intimation.

Markets.

COVENT GARDEN, July 10.

THE soft fruit season has now well set in, and supplies are more than equal to the demand, prices all round being much lower. Business flat. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve ..	7 0	12 0	Lemons, per case..	10 0	14 0
Currants, black, per ½ sieve ..	3 6	4 0	Pine-apples, Eng., lb.	2 0	3 0
Figs, per dozen ..	2 0	3 0	— St. Michael's, each	2 0	5 0
Grapes, per lb. ..	2 0	5 0	Strawberries, per lb.	0 4	1 0
			Peaches, per doz. ..	2 0	12 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz. ..	3 0	5 0	Horse Radish bund.	3 0	4 0
Asparagus, English, per 100 ..	4 0	8 0	Lettuces, Cabbage, per dozen ..	1 6	..
Aubergines, each ..	0 4	..	— Cos, each ..	0 2	..
Beans, French, p. 100	1 6	..	Marrows, each ..	0 6	..
Beet, per doz. ..	1 0	..	Mint, green, bunch..	0 6	..
Cabbages, per doz..	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun. ..	0 8	..	Onions, per bunch ..	0 9	..
— New French, per bunch ..	1 3	..	— Spring, per bun.	0 0	..
Cauliflowers, English, dozen..	2 0	3 0	Parsley, per bunch..	0 9	..
Celery, per bundle..	1 6	2 6	Peas, English, quart	1 0	..
Cucumbers, each ..	0 6	1 0	Radishes, per doz. ..	1 6	..
Endive, French, per dozen ..	2 0	..	Rhubarb, per bund.	0 4	0 6
Garlic, per lb. ..	0 6	..	Small salading, per punnet ..	0 4	..
Herbs, per bunch ..	0 2	0 4	Spinach, per strike..	3 0	..
			Tomatos, per lb. ..	1 0	..
			Turnips, new, bun...	0 8	..

POTATOS—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £7 to £9 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Fuchsias, per doz. ..	4 0	12 0
Arbor-vitæ (golden), per dozen ..	6 0	18 0	Heliotrope, doz. ..	4 0	9 0
— (common), dozen	6 0	12 0	Hydrangea, per doz.	9 0	18 0
Begonias, per doz. ..	4 0	12 0	— paniculata, doz.	18 0	36 0
Calceolarias, per doz.	4 0	9 0	Lilium longiflorum, per dozen ..	24 0	36 0
Cockscombs, doz. ..	3 0	0 0	— lancifolium, doz.	9 0	18 0
Cyperus, per dozen	4 0	12 0	Marguerite Daisy, per dozen ..	8 0	18 0
Dracæna term. doz...	30 0	60 0	Mignonette, per doz.	4 0	6 0
— viridis, per doz..	12 0	24 0	Myrtles, per doz. ..	6 0	12 0
Erica, various, doz.	12 0	48 0	Palms in var.. each	2 6	21 0
Euonymus, various, per dozen ..	9 0	18 0	Pelargoniums (show) per dozen ..	6 0	18 0
Evergreens, in var., per doze ..	6 0	24 0	— scarlet, per doz ..	3 0	9 0
Ferns, in var., dozen	4 0	18 0	Petunias, per dozen	6 0	12 0
Ficus elastica, each	1 6	7 0	Rhodanthes, p. dozen	6 0	9 0
Foliage Plants, various, each ..	2 0	10 0	Spiræa, per dozen ..	8 0	12 0
			Spiræa palmata, doz.	18 0	30 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Mignonette, 12 bun.	3 0	6 0
Arum Lilies, 12 blms.	3 0	6 0	Pelargoniums, per 12 sprays ..	0 6	1 0
Bouvardias, per bun.	0 9	1 0	— zonal, 12 sprays	0 3	0 9
Calceolaria, 12 sprays	0 6	1 0	Pinks, various, 12 bun.	2 0	6 0
Carnations, 12 bun.	2 0	6 0	Primula, double, bun.	1 0	1 6
Cornflower, 12 bun ..	2 0	4 0	Pyrethurm, 12 bun.	2 0	6 0
Eschscholtzia, 12 bun.	2 0	4 0	Rhodanthes, 12 bun.	6 0	12 0
Eucharis, per doz. ..	3 0	4 0	Roses (indoor), doz.	1 0	4 0
Forget-me-not, 12 bunches ..	2 0	6 0	— (outdoor), 12 bun.	3 0	9 0
Gardenias, 12 blms..	3 0	6 0	— coloured, doz. ..	2 0	0 0
Gladiolus, various, 12 bunches ..	2 0	9 0	Stephanotis, 12 spr.	2 0	4 0
Heliotropes, 12 sp. ..	0 6	1 0	Stocks, 12 bunches ..	3 0	6 0
Iris, various, 12 bun.	3 0	12 0	Sweet Peas, 12 bun.	1 6	4 0
Lapageria, white, 12 blooms ..	3 0	6 0	Sweet Sultan, 12 bun.	2 0	6 0
— red, 12 blooms..	1 0	3 0	Tropæolum, 12 bun.	1 6	3 0
Marguerites, 12 bun.	3 0	6 0	Tuberoses, per doz..	0 6	1 6
			White Jasmine, bun.	0 6	1 0

SEEDS.

LONDON: *July 9.*—The seed market to-day ruled quiet. New Trifolium, both English and foreign, is now appearing and meets with fair enquiry. Rape seed has become exceedingly scarce. Hemp seed, being in short supply, is held for more money. There is no change in Canary seed. Fine blue Peas have now got into narrow compass. Other articles at this inactive season offer no subject for remark. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

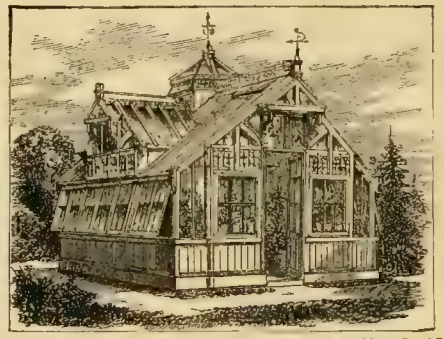
CORN.

At Mark Lane, on Monday, English Wheat maintained late value, but foreign was hardly so well supported. The flour trade was very slow. Beans and Peas were without alteration. Maize was quiet, and common qualities of Oats were 3*d.* lower.—On Wednesday sales of Wheat to any extent were impracticable, and the little that was done showed easier rates. Flour was exceedingly dull, and the tone depressed. Barley was quiet. Oats of common qualities were again 3*d.* lower, Beans and Peas remained unaltered, and Maize rather easier in all positions.—Average prices of corn for the week ending July 5:—Wheat, 37*s.* 1*d.*; Barley, 23*s.* 5*d.*; Oats, 23*s.* 6*d.* For the corresponding period last year:—Wheat, 42*s.* 4*d.*; Barley, 28*s.* 11*d.*; Oats, 23*s.* 5*d.*

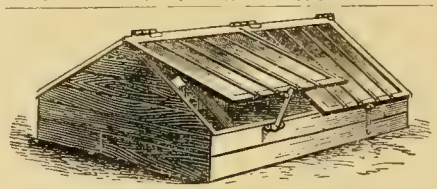
POTATOS.

The average prices during the week were as follows:—Kidneys, 120*s.* to 140*s.* per ton; Midas, 100*s.*; Early Rose, 120*s.*; Regents, 120*s.* Foreign—Jerseys, 150*s.* to 160*s.*; Cherbourg, 120*s.* to 150*s.*; rounds, 120*s.* to 130*s.* per ton; Dutch, 2*s.* 6*d.* per basket.—The imports into London during last week comprised 3397 cases from Cherbourg, 100 tons St. Malo, 4018 packages 70 tons Jersey, 439 baskets Rotterdam, 16 casks Boulogne, and 490 boxes from Barfleur.

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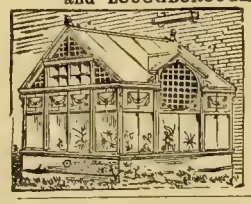
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12 feet long, 5 feet wide, " " "	6	10	0

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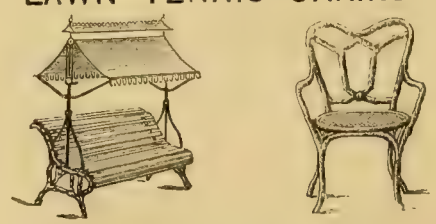
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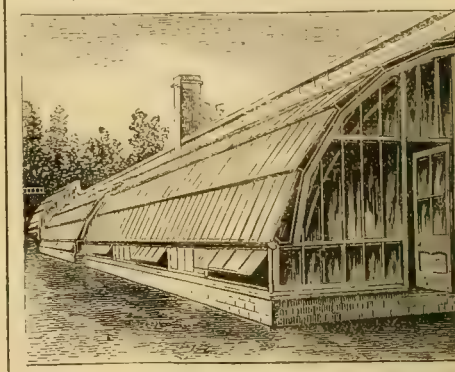
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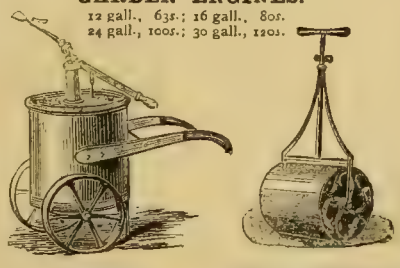
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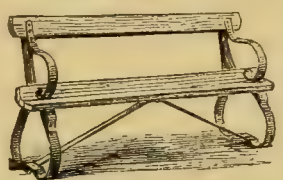
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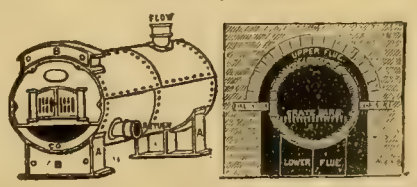
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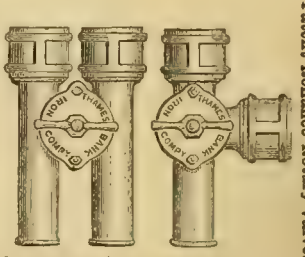
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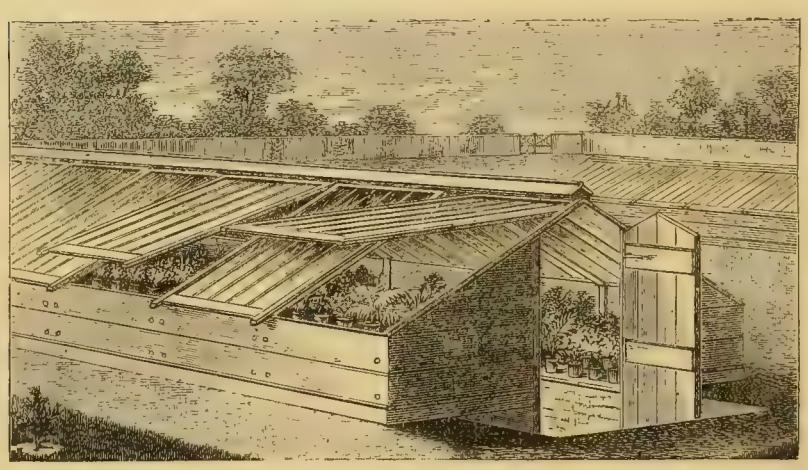
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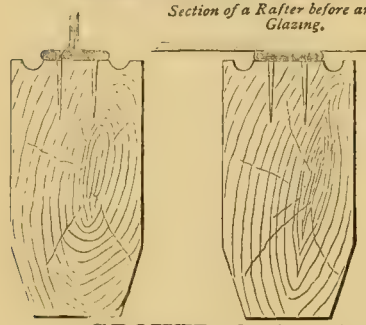


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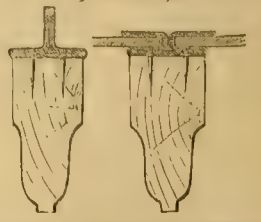
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Printed by William Richards, at the Office of Messrs. Bradbury, Agnew, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said William Richards, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—Saturday, July 12, 1884.
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 551.—Vol. XXII. { New Series. } SATURDAY, JULY 19, 1884. { Registered at the General Post-office as a Newspaper. } Price 6d. Post-free, 5½d.

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WILLIAM DENMAN, SALESMAN and HORTICULTURAL AGENT, Covent Garden, London, W.C., is now open to receive instructions for the DISPOSAL of all kinds of STOVE and GREENHOUSE PLANTS, ORCHIDS, NURSERY STOCK, BULBS, SEEDS, &c.
Having had long practical experience in all branches of Horticulture, and being connected with numerous Market and other large Growers, W. D. is in a position to dispose of very large quantities of various stock, more especially Lily of the Valley, Spiræas, Azaleas, Tuberoses, Bulbs, and such things as are forced annually in enormous quantities.
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WISE AND RIDES, FRUIT and FLOWER SALESMEN, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.
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IN EXCHANGE for Small Plants of CROTONS, DRACÆNAS, and GREENHOUSE PLANTS, three overgrowing PALMS, one in tub, and two in pots; also CYCAS REVOLUTA in tub, 6 feet through; one PANDANUS VEITCHII, 6 feet through, too large for present owner's houses. For full particulars apply to
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WANTED, 1000 IVIES, from 5 to 10 feet high. Send price to
W. WILLETT, Rosery Gardens, South Kensington, S.W.

To Rose Exhibitors.
MISSING from the CRYSTAL PALACE SHOW in April, three ROSE BOXES—two 24's, one 12, with upright cups fixed to bottom. Each box branded at end "J. Mayo, Oxford." The same were given to two men with van (who represented themselves in the employ of Mr. Turner, Slough), to bring on for me to Slough. Any one giving information as to recovery of same will be rewarded.
JOHN MAYO, Oxford.

NARCISSUS INCOMPARABILIS GIGANTEUS, "SIR WATKIN."
A splendid new variety, eclipsing all others. Received First-class Certificate from the Royal Horticultural Society, under name of "James Dickson." Price, 3s. 6d. each, 36s. per doz., 250s. per 100. Coloured Plate free to intending purchasers. For full particulars, see large Advertisement in *Gardeners' Chronicle* of July 5.
JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

AUSTRALIAN FERN TREES (BALANTIUM ANTARCTICUM).
Orders for next spring will be promptly attended to.
Price, 10s. per foot under 5 feet high, 12s. 6d. per foot over 5 feet high, free to London.
They are the same as at the Crystal Palace Shows.
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FOR SALE, for want of room, 5 dozen healthy young Plants of GARDENIA, a foot to 18 inches each way, 12s. per dozen.
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OUR TRADE LISTS, Nos. 68 and 69, just issued, contain all the North American Lilies, Rare Bulbs and Plants, Calochorti, Fritillarias, Heuchera micrantha, &c., Ferns and Cypripedia, to be delivered next autumn, to order, at unprecedentedly low prices; also Lilium auratum, Japanese Bulbs, Maples, Iris, Narcissi, to be delivered in same way. To ensure certain delivery, please order at once.
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HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
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Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
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Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

FOR SALE, a splendid TREE FERN (Dicksonia antarctica); also large plants of AZALEAS, ROSES in pots, &c. Price and full particulars, apply to
A. LAW, The Gardens, Ford Place, Thetford, Norfolk.

PRIMULAS.—PRIMULAS.—PRIMULAS.
Fifteenth year of distribution.
WILLIAMS' SUPERB STRAIN, 1s. 6d. per doz., 10s. per 100.
CINERARIAS same price. Package and carriage free for cash with order. Above are strong and fit for potting into 3-inch pots.
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EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
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FOR SALE, splendid Specimen CAMELLIA STORYI, fine pink, 8 feet high, 6 feet wide, in fine health, and set with over 1000 bloom-buds. Price £5 5s.
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Daffodil, Daffodilly, Daffodowndillies.
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REMAHL AND PLANTHABER, SEEDSMEN, Stockholm, exporters of Swedish CLOVER, TIMOTHY and ALOPECURUS PRATENSIS.

SALES BY AUCTION.

Thursday Next.—(Sale No. 6603.)

MOST RARE IMPORTATIONS,

Consisting of a grand lot of ANGRÆCUM CAUDATUM. This superb Orchid is most difficult to introduce, and not at present in collections. The dried flowers, and the plants covered with long spikes, will give a fair idea of its beauty. The flower-spikes seem to spring in pairs from the leaf axils, and the spike grows in a triangle, producing a flower in each angle, so that they stand boldly out. Some extraordinary masses will be found among this importation. Some six other new species of Angræcum will be offered; also the free-flowering and lovely ONCIDIUM NIGRITUM, in large and fine plants. It is fully described in the *Gardeners' Chronicle*, June 23, 1883. ZYGOPETALUM BURKEI, a rare and valuable species, figured in last month's *Orchid Album*; together with many other ORCHIDS of value.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, July 24, at half-past 12 o Clock precisely, the above importations of ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA DOWIANA.
LÆLIA ELEGANS.
CATTLEYA LEOPOLDI.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, July 25, at half-past 12 o'Clock precisely, grand importations of the above, also CATTLEYA MENDELI, C. SPECIOSISSIMA, C. MOSSIÆ, ODONTOGLOSSUMS, and many other ORCHIDS.

On view morning of Sale, and Catalogues had.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of FLOWERING ORCHIDS will take place on TUESDAY, July 29, and they will be glad to receive particulars not later than Monday, the 21st inst.

Offices, 67 and 68, Cheapside, E.C.

Friday, August 1.

Highly Important SALE of ESTABLISHED ORCHIDS, the property of J. S. Bockett, Esq., The Hall, Stamford Hill, N., the Estate being at once required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., at half-past 12 o'Clock precisely. the third portion of this valuable COLLECTION of ESTABLISHED ORCHIDS. Amongst many other fine things will be found :—

Cattleya exoniensis	Lælia anceps Dawsoni
Phalænopsis Portei	,, elegans
,, Stuartiana	Oncidium macranthum

On THURSDAY, August 7, the whole of the choice STOVE and GREENHOUSE PLANTS, valuable COWS, and other LIVE STOCK, GLASS ERECTIONS, &c., will be SOLD by AUCTION, on the Premises, The Hall, Stamford Hill, N. More detailed particulars will shortly appear.

WANTED TO PURCHASE, a FLORIST'S BUSINESS or PREMISES suitable for one : neighbourhood of Kensington or Bayswater.
Address, with particulars, S. B., Mr. Bigg, 27, Russell Street, Covent Garden, London, W.C.

WANTED TO RENT, on moderate terms, a few Acres of NURSERY GROUND, or SMALL NURSERY, with Dwelling-house, near good town.
Apply, H. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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TO BE SOLD, about 1½ Acre Freehold Walled-in GARDEN, suitable for a Florist Business, &c., with frontage to Pope's Grove, close to Strawberry Hill Station. Plans and particulars, apply to
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To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD, by Private Contract, with early possession, the Old-established BUSINESS (of over 150 years and only changed hands three times) of a NURSERYMAN, SEEDSMAN, and FLORIST, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Princes Street, Yeovil.

The Merriott Nurseries comprise 27 acres of excellent Land, completely stocked with splendid young, valuable, and saleable Fruit; Coniferous, Forest, and Ornamental Trees and Shrubs; and well stocked Greenhouses, &c.

The Residence, Offices, Stabling, Manager's Villa, and Cottages, and a portion of the Nursery Grounds, are the proprietor's Freehold, and may be Purchased or taken on Lease.

The small Hendford Nursery is well stocked, and is provided with newly erected and conveniently-fitted Greenhouses, and other Erections adapted for the business. These Premises may also be Purchased or taken on Lease.

The age and state of health of the Proprietor alone induce him to retire, and he will be prepared to Sell on advantageous terms.

The Yeovil Branch Business could be taken separately if so desired, or the whole affair in its entirety, which would in the latter case afford an excellent opportunity for Partnership.

For further particulars and cards to view, apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or, to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.—June, 1884.

TO BE DISPOSED OF, a FLORIST BUSINESS, near London. Long lease. Particularly suited for any one having a shop in London. Patronised by Royalty. Prettily and newly erected Cottage and Greenhouses, well stocked Garden, and near railway station.
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FOR SALE, a NURSERY GARDEN, at Red Hill, Surrey, with 3 Glasshouses and Shop fronting on a main street. Held under lease, with 18 years to run, at £35 per annum. Comfortable Cottage on the ground. Price for lease and stock, £60.
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TO LET (or the LEASE would be SOLD), a charming nine-roomed HOUSE, with Garden back and front, with Ornamental Conservatories and Hothouses; corner house in the Fulham Road.
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TO BE LET, a 4-roomed COTTAGE, in good repair, having Out-house (Apple-room over), and other domestic conveniences, with a GARDEN well stocked with Fruit Trees, Vegetables, and Flowers, in which are a Span-roof Greenhouse, 33 feet long, 14 feet wide, with six good fruiting Vines; a span-roof Stove-house or Fernery, 30 feet long, 14 feet wide; 48 feet of brick-built Melon and Cucumber Frames; 30 feet of Plant Preservers—the whole heated by one Boiler (Weeks' Improved Upright Tubular); a roomy Potting Shed, suitably fitted up; a covered Fowl-run, 50 feet long, 8 feet wide; an enclosed Tool Shed, &c.
Apply to the HOUSEKEEPER, Tweed Bank.

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TO BE LET, with Immediate Possession, the above Old-established NURSERY, consisting of 14 Acres of excellent ground, stocked with Trees and Shrubs, six divisions of Greenhouses heated with hot water, a large number of Pits and Frames, large Packing Shed, good Stable and Cart Shed, Piggeries, &c., together with an excellent Residence, and 10 Acres of good Pasture Land joining the nursery. The above forms one of the most compact and desirable business premises to be met with, and has been carried on by the same family for nearly 70 years, and is now to Let owing to the death of the late proprietor and failing health of his successor. Stock and Fixtures to be taken at a valuation.
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HUGH LOW AND CO. have large quantities of FRUIT TREES, ROSES, and other Outdoor Nursery Stock, of fine quality, at their Nursery, near the Bush Hill Park Station of the Great Eastern Railway, and they cordially invite their friends to inspect the same; also the Glass Erections, which consist of Long Ranges of Pits and Thirty-three Houses, averaging upwards of 100 feet in length, many of them 25 feet wide, containing Acacias, Azaleas, Adiantums, Camellias, Cyclamens, Dracænas, Ericas, Gardenias, Genistas, Grape Vines, Jasmines, Palms, Pelargoniums, Roses, Solanums, &c. Clapton Nursery, London, E.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE (No. 374A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1884 and 1885, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out for this speciality. The collections of every description of the establishment are in the most desirable excellent condition.

H. LANE AND SON respectfully invite their Patrons and Friends to visit their Nurseries during the present month to view their fine Collection of ROSES, now in full bloom. Purchasers can select from many thousands. Standards, 15s. to 18s. per dozen; Dwarfs, 9s. to 12s per dozen.
A choice and immense stock of RHODODENDRONS, CONIFERS, TREES and SHRUBS, FRUIT TREES of all descriptions, extensive ORCHARDS in full bearing. VINERIES of all the leading kinds of Grapes, &c.
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Special Offer of White Begonias.
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THE
Gardeners' Chronicle.

SATURDAY, JULY 19, 1884.

HAM HOUSE.

THE manor of Petersham, bounded by the Thames, Richmond Park, and the grounds of Ham House, belonged to the abbey of Chertsey, whose tutelary saint was St. Peter. It remained the ham or dwelling of Peter till the fifteenth century, when it passed by gift to Henry V. In 1541 it was granted to the divorced Queen Anne of Cleves. In 1617 it was devised by letters patent to Sir Francis Bacon and others as trustees for Charles, Prince of Wales; and twenty years later it was granted by the same prince, then King Charles I., to William Murray, page and whipping boy to the Prince of Wales, a son of the Rector of Dysart, in the county of Fife, and afterwards, by creation, Baron Huntingtower, and Earl Dysart in the peerage of Scotland. In default of male heirs Scotch peerages usually descend to females, and the title and estates of the earl accordingly descended to his eldest daughter, Elizabeth, whose marriage with Sir Lionel Tollemache, Bart., of Helmingham Hall, in Suffolk, brought the earldom of Dysart into that ancient family.

Sir Lionel died, and two years later his accomplished lady, "the beautiful, witty, eccentric Lady Dysart," as she was justly called, married the Earl (afterwards Duke) of Lauderdale. By the Duke she had no children; by Sir Lionel she had a numerous family, one of whom married Lord Lorn, afterwards first Duke of Argyle, and in consequence of this alliance Ham House became the birthplace of two children who were both in turn Dukes of Argyle. Ham House, in fact, has been the cradle and home of dukes and earls—Landerdales, Argyles, and Dysarts. The brothers just mentioned were both distinguished as statesmen, and one of them as an arboriculturist at the time when tree planting became the fashion in England, and was carried into Scotand by several of the great proprietors of that country. The elder brother is best known from his flattering portrait in the *Heart of Midlothian.* His English suburban residence was at Sudbrook Park, Petersham, where he planted the Cedar of Lebanon, which is now frequent in the same district, where the earliest seedlings were reared and distributed. The oldest Cedars of Lebanon in the country are found hereabouts, and among them are some good specimens at Ham House. The same interesting historic character probably planted the Silver Firs which now grow so magnificently in the woods of Inverary Castle, and no doubt he sowed the first seed of this tree, which reached him from abroad, in his nurseries at Sudbrook Park. The timber then planted here would now be mature, but the devotion of the site to the public recreation by adding it to Richmond Park many years ago has obliterated all traces of the ducal plantations.

John, Duke of Argyle, sometimes called Jeannie Deans' Duke, was renowned both in peace and war, and although we cannot now describe the great place he held in the history

of his time, we may say in his praise that he fought at Ramillies under Marlborough, drove the Pretender out of Scotland, was noted for his high courage, and filled great offices both in England and Scotland. He earned his statue in Westminster Abbey, if only by the timber he planted, and deserved better verses than Pope's well known and rather pompous couplet :—

"Argyle, the State's whole thunder born to wield,
And shake alike the Senate and the Field."

The duke died at Sudbrook Park in 1743.

Ham House, in three storeys of red brick, is a good specimen of the houses of its period—1610; one front faces the river, another looks upon a terrace and lawn in the opposite direction, and in seeking an opening through the Elms which thickly envelope the mansion, it is found in the avenue reaching to Ham Common. One of the Elms in this avenue is said to have suggested Hood's poem "The Elm Tree." It is difficult to get a view of the house from any distant point, since the Elms, which thrive so well, and grow so large on this level land on the banks of the river, enshroud it on every side. Immediately around the house, however, an ample open space has been secured by those whose taste and good sense laid the original plan, and the Elms and their inner edging of fine old Scotch Firs are kept at a proper distance by wide lawns and walks and terraces.

During more than 200 years this house has been the residence of the same noble family, and the richness of its decorations, the pictures, old furniture, books, bijouterie and tapestry, and a magnificent staircase, bespeak wealth and something besides, which the unassisted purse cannot attain. The Countess of Dysart must have been a wonderful woman. It was she who refurnished the house; its decorations are hers; the inlaid floors and tables bear her cypher. The great gates are of Charles II.'s time and hers, and bear the Tollemache Fret and the Murray Mullets, with the arms of her second husband, the Duke of Lauderdale—that very great man, the chief of those despotic Ministers whose initials form the word "cabal," and who sat in council here in the Cabal Chamber. Great as he was, she was mistress here. "The Lady Dysart," says Burnet (*History of His Own Times*), "came to have so much power over the Lord Lauderdale that it lessened him much in the esteem of all the world, for he delivered himself up to all her humours and passions." She spent his money freely, and hence the costly magnificence of her house, and hence our notice of the beautiful, intriguing, talented countess. As a lover of beauty and the arts what a garden would have been hers if she had lived now! Dibdin, the bibliographer, called her library at Ham House "a wonderful book paradise." She filled her rooms with the portraits and varied works of Janssen, Vandyck, Lely, Kneller, Cuyp, Wouvermans, and others of that date. The very recesses of her fireplaces are enriched by the hand of art. The backs are of metal richly embossed and overlaid with coats-of-arms. The dogs and "irons" upon the hearth are, in several of the rooms, of silver and bronze. The coverlet and pillows in her bed-chamber are richly embroidered. Her hangings are of satin, her fringes are of gold and silver; a silken canopy, now in tatters, formed a stately awning to her arm-chair. Her own apartments, called the Duchess of Lauderdale's, remain very much as she left them. Perhaps the most magnificent legacy of the past, so far as the decoration of the house is concerned, is the massive staircase from the hall to the principal rooms above. Oak and walnut do not fade, as the tapestry and rich hangings of some of the apartments have done. The ballustrades, as well as the entablatures and pillars of the doorways on the landing, are beautifully ornamented with carvings of fruits and flowers, military trophies, and weapons of war.

Another Countess of Dysart gains distinction in the family history by her length of life. This venerable lady, who died in 1840 at the age of ninety-five years, lost her surname, as ladies will, by marrying Mr. Manners, M.P. for Leicestershire, a grandson of the Duke of Rutland, and she recovered it by royal licence, that the ancient name of Tollemache might be continued. Her grandson was the sixth earl, the present Lord Dysart is the eighth, and the present occupants of this old and aristocratic seat are his uncles, the Hon. Frederick and Hon. Algernon Tollemache. *H. E.*

New Garden Plants.

ONCIDIUM TRICUSPIDATUM, *Rchb. f.*

This is one of the numerous curious Costa Rican discoveries of Herr Oberhofgartner Fl. Wendland. It belongs to the Leochilian section. The bulbs are narrow, ultimately much wrinkled, 1-leaved, and with an inferior leaf. Leaves cuneate, oblong acute, of parchment texture. Peduncle panicled, surpassing the leaves. Flowers with orange sepals, having a brown mid-line. Petals lightest sulphur with very numerous small brown spots and back, forming a curious contrast with the sepals. Lip very shortly cuneate at the base, with a great oblong bilobed blade, sulphur, with transverse brown bars at the base, a callous elevation between. The column has two ligulate blunt arms from the infrastigmatic part and a beaked rostellar process. It is botanically interesting. The fresh plant at hand was kindly forwarded by Mr. F. Sander, of St. Albans, and I presume it was collected by Mr. Hübsch, since the same collector sent lately dried inflorescences at hand. *H. G. Rchb. f.*

CATTLEYA GUTTATA WILLIAMSIANA, *n. var.*

A fine Cattleya, very near Sir Trevor Lawrence's Cattleya guttata lilacina, but without any spots on the fine purplish sepals and petals. Lip white, with dark purple front lobe. It was kindly forwarded by our excellent Orchidic patriarch, Mr. B. S. Williams, who received it from W. Lee, Esq., Downside, Leatherhead.

THE TUBEROUS BEGONIA.

Those who have been in the habit of visiting the Stanstead Park Nurseries, Forest Hill, cannot fail to notice the decided improvement made during the past year in this useful greenhouse flowering plant. Mr. Laing works on the same lines as were laid down many years ago by the late Mr. George Glenny. The old veteran's teachings have been greatly ridiculed by some members of the modern school of gardening, but it is a remarkable fact that wherever any successful results have been obtained in the field of floriculture, it has been by adhering less or more to Glenny's rules formulated when floriculture was in its infancy, and the rule is the same whether the flowers are single or double. Even the single Dahlia is no exception, for I have observed when the merits of the new single Dahlias have been under discussion those with circular flowers, and great substance of petals have been preferred to those with narrower petals, and which did not take so well to the rounded form. In selecting the best seedling Amaryllises the same rule has been applied, the flowers with narrow petals and openings between them are rejected at once, while those with broad stiff petals, which form a rounded flower, are always preferred—colour of course playing an important part, bright and decided colours being preferred to those that are dull and undecided.

The correctness of Mr. Laing's taste in dealing with the Begonia has been proved by the profusion with which First-class Certificates have been positively showered down upon his flowers by all the great London societies. The most recent exhibition of the Stanstead Begonias was the very fine group exhibited at the Crystal Palace Rose Show. In that group were two new white varieties; the one under the name of Bridesmaid was first brought under the notice of the judges, and it was thought to be well worthy of the honour of a First-class Certificate, until the other white kind, White Perfection, was inspected; this had much rounder flowers, and it was preferred at once to the other. My notes of White Perfection are —"The best white variety yet raised; habit of plant dwarf and compact; flowers round, of good substance, pure white, and 3¾ inches across." Bridesmaid forms an erect plant, very floriferous; flowers large, pure white, and of good form. Between the white and rose coloured kinds are Her Majesty, a most remarkable variety, white, or rather blush in the centre, shading to rose at the margin; plant of good dwarf habit, flowers large, of good substance, and fine form. Distinction is a very pretty flower, white, edged with rose. Mr. Laing is hopeful that this is the forerunner of a new type that will be edged like the Picotee.

There are many fine rose-coloured varieties, the best is Lady Chesterfield; it has deep rose flowers of large size and fine quality. Marchioness of Bute is a very good pale rose-coloured kind. Lady Brooke forms a good habited plant, with very large bright rose flowers. William Spinks, rose, large flowers and good habit of plant. Mrs. Weekes has flowers of a peculiar pinky tint. Rose Perfection, a fine, rich, clear rose, of very fine form. Hon. Mrs. Goschen, deep rose. Miss A. Green, violet-rose, very free flowering. Mr. A. Forbes is worthy of a high place amongst scarlet flowers; they are of a large size, whitish at the centre. Lord Chesterfield is one of the best crimson coloured kinds, very large and of good form. H. Walter, brilliant orange-scarlet; and Ball of Fire, scarlet, are both good. The largest flowered Begonia raised at Stanstead is vermilion-scarlet, Stanstead Surprise; the flowers are 6½ inches across. Swalby, rich bright scarlet. If improvement has been great in white varieties it has been equally so in the yellow and bronzy-yellow colours. Golden Queen, certificated at the Crystal Palace, has larger flowers than any yet seen; it is clear golden-yellow, and the flowers are freely produced. Torey Laing, bronzy-yellow—a fine dwarf-habited plant. Countess of Rosslyn is dark bronzy-yellow, a distinct and good kind.

Amongst double varieties Alba plena forms neat rosettes of pure white flowers, in the same way as Canary Bird forms neat rosettes of clear yellow. Virginale is also a fine double white, and Sulphurea is yellowish-white. Prince of Wales is the largest and best double dark crimson. Dr. Duke is the best of the scarlet double varieties, flowers of large size. Rosamonde Leguin, rosy-salmon—very fine, with handsome drooping flowers. The system of culture pursued at Stanstead is a very simple one. The plants like a rich open compost, and when they are coming into bloom air must be freely admitted. It is a good plan to start the plants in heat, indeed, if this is not done they will flower late. They may be started early in the year in any early vinery, and be grown on there until they are shaded by the Vines, when they should be taken into a lighter place, and be placed near the glass. After this they must be kept growing steadily, and when the flowers begin to open let them have plenty of air and light, shading from bright sunshine. At Stanstead Park a large span-roofed house is exclusively devoted to their culture: under such conditions the plants receive exactly the treatment they require. *J. Douglas.*

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* *Oncidium tricuspidatum.*—"Beitr. Orch. Kund. Central Amerikas," &c., 7 li. -Aff. Oncidio carinato, Knw. Westc.: labello ante basin ascendentem deflexo cuneato dilatato bilobo; callo in basi transverso tumore anteposito oblongo apice bilobo; columnæ brachiis ligulatis; rostello ornithorhyncho æqualibus. Pseudobulbus ligulatus monophyllus pollicaris. Folium cuneato oblongum acutum valde coriaceum siccum multistriatum ac favulosum duos usque octos pollices longum plus duos latum. Folium stipans inferius vulgo bene foliaceum subæquale; vaginæ stipantes pedunculi scariosæ acuminatæ. Pedunculus validus usque bipedalis robustus vaginis distantibus acutis, sursum paniculatus. Rami plures crassi, longiores. Bracteæ triangulæ carinatæ ovariis pedicellatis bene breviores seu subbreviores. Sepala ligulata acuta lateralia supra nervum medium carinata. Tepala breviora obtusiora. Labellum basi arrectum statim deflexum subflabellato bifidum; laciniis anticis obtusangulis, callo semirotundo vertice retuso; callo oblongo antice bilobo anteposito. Columnæ brevissimæ brachia ligulata duo ligulata obtusa. Rostellum ornithorhynchum. *H. G. Rchb.*

Jamaica Fruits. — The export of Pine-apples from Jamaica last year amounted, according to the Report of the Director of the Botanic Garden, to 7722 dozens, of the value of £1158. Oranges are exported to America at the rate of 34,000,000, yielding £37,560. Of Bananas 937,951 bunches, of the value of £93,795 were exported.

POTATOS AT PENGE.

Chiefly by reason of his position as the active Secretary to the International Potato Exhibition, Mr. P. McKinlay, of Penge, the well-known amateur cultivator of Potatos, has for some time refrained from exhibiting largely for competition at the Crystal Palace shows, and with a view to obtain useful information as to the general qualifications of new or of recently introduced kinds, now chiefly devotes his cultural attention to these. As a member of the Seedling Committee of the exhibition, and thus called upon to take an active part in the examination of the new kinds grown for trial in anticipation of receiving certificates at Chiswick now yearly, it is a matter of special value thus to have the assistance which cultivation under one's own eyes of many of these new kinds gives. It is a peculiar fortune that in the garden specially devoted to Potato culture at Penge Mr. McKinlay has one of the most beautiful soils that can well be found, though, perchance, the considerable addition of much of the sweepings from the London streets to it has very materially helped it. This soft rich soil is some 3 feet in depth, and as it always works freely it presents for Potatos almost a soil paradise.

Usually well manured, it was thought that for once no fresh manure should be added, and therefore all the seed tubers were this year planted without any additional help in the way of manure, still the growth of strong robust kinds has been marvellous. In many cases there are between the rows intervals of 4½ feet, yet in spite of such a width there may be seen row after row, the tops of which touch each other, each row presenting wonderful banks or masses of foliage. Specially grand in growth are Prime Minister, Reading Russet, Chancellor, The Dean, Lady Truscott, Wiltshire Giant, and others; indeed had the rows been closer together the tops would have been injuriously crowded. In no case are there any rows closer together than 3½ feet, and although in a few instances the whole of the room is not occupied yet in by far the larger majority it is amply filled.

Usually an early planter, Mr. McKinlay did not begin this year till the middle of April, but of course the sets were well selected and prepared, so that growth was immediate and robust. Thus too late to receive injury from the severe April frosts, the plants were from the first unchecked, and the growth is such as is rarely seen in the best of gardens. Rather an unusual incident in Potato culture is seen in the supporting erect by means of stakes and cords of the tops of one robust kind that had been planted by mistake amongst dwarfer sorts. Looking at the dense leafage and hedge-like form of the tops, it would seem as if such method of supporting the haulm would prove to be the best protection to the tubers beneath from heavy rains and washing in of the fungus spores. It will be presently further matter of special interest to note how much longer the leafage of a kind thus held from contact with the soil will remain free from fungoid attacks than will the leafage of a similar kind the tops of which lie sprawling all over the soil. Mr. McKinlay is quite satisfied of the danger of promoting what Mr. Jensen terms after-sickness in the newly lifted tubers by taking up a crop whilst the tops are yet alive with fungus spores. Some sad experience of this practice in previous years especially with the handsomest samples has made him wary, and if early lifting is found indispensable in some cases ample care will be taken that before doing so the affected tops are first carefully removed a day at least before lifting. It will be well if all Potato growers should bear this matter in mind, for its importance cannot be over-estimated: of course the warning only applies when disease is prevalent.

In addition to such older kinds of Potatos as International, Woodstock Kidney, King of Potatos, Reading Russet, Vicar of Laleham, Bountiful, and others, we saw at Penge Cosmopolitan, Recorder, Lord Mayor, Alderman, Snowdrop, Sanday's Seedling, a form of Lapstone; Lady Truscott, The Dean, Prime Minister, Chancellor, Sunrise, Edgcote Purple, Life Guard, and others of the most recent introduction, and not a few very promising seedlings, most of which are also being this year grown at Chiswick. In a few cases there is a development of rust chiefly amongst the American kinds, though some few of these in newer forms are doing finely, and will doubtless shortly turn out some handsome samples. Unfortunately American kinds show little improvement.

CHOICE PLANTS FLOWERING AT CAMBRIDGE.

Nelumbium luteum.—This beautiful plant is now blooming in the Cambridge Botanic Garden, and as it is difficult to flower the manner of its treatment may be of some interest. There is no proper aquarium for tender water plants, and they have to be grown in tubs, which stand on a stage in the Cactus-house, where there is all possible light. The tub in which this grows is 14 inches deep and 2 feet 3 inches wide at the top. The soil is 8 inches deep, and consists of about two parts fibry turf, one part rotten cow-dung, and one part rough sand. Three tubers were planted early in April, and the result now is a handsome, though not large, specimen, with about three dozen leaves, and five flowers in different stages, to be seen at the present time. The earliest flower is poised on a stalk about 3 feet high, reaching rather above the leaves, and its pale sulphur colour is lovely and the form most elegant, while the delightful perfume seems to suggest the smell of very sweet hay. Remarks have several times been made in the gardening journals about the possibility of flowering this Nelumbium out-of-doors, chiefly, if our memory serves, upon the strength of its enduring in the wild state a cold more severe than that of our own winters. With our winters no doubt it would be quite satisfied, but success rather turns upon the more important matter of temperature for its summer development, and as our summers have not the warmth and sun of its American home, we have but small hope of succeeding with it out-of-doors under our skies. True, it does flower in the Jardin des Plantes of Paris, but there the climate is more favourable. We do not discourage trials, and where there is any chance of success, as, for instance, in the Isle of Wight, they should still be made. The case of Zizania aquatica is somewhat parallel with this probably. It has grown well in the bog garden at Cambridge for the last four years, but it never flowers, the reason being, no doubt, that our summers are not hot enough. Perhaps in this case, if we had colder winters, the cold would make the plant more susceptible to the warmth we have.

Antigonon leptopus.—This fine climber, which so rarely flowers, is now blooming. Special means have been taken to make it flower, and probably by the principle adopted it can always be made to bloom without difficulty. It was introduced to Kew by seeds, and the plant, which flowered for the first time in Britain (figured in the *Botanical Magazine* of 1868), was grown in the propagating pit and trained close to the glass, and it was potted on with a number of other plants for the purpose of giving shade, in order to do without the roller-blinds as much as possible. It was thus flowered by means of free growth and plenty of light, and following upon this the Cambridge specimen was planted in a brick inclosure made for it behind the pipes in the Cactus-house, where it has a good mass of soil, and the shoots are trained close to the glass over which there is no shading. These shoots are now 12 feet long, and having made a free unchecked growth, have attained the development which alone will produce flowers. The fruit has not yet been formed in this country. The tendrils are formed by modification of the flower peduncles, and it is interesting to observe, when flowers are produced, that the stalks of the upper part of the inflorescence are still modified to tendrils, and are apparently active in the purpose they are intended to serve. This plant was not examined by Mr. Darwin, and it does not seem that an exactly similar case has been recorded.

Iris hexagona.—When Mr. Baker wrote his monograph of the genus Iris for our pages some years ago he spoke of this species as being very desirable to introduce, and, though it has now been cultivated for some time, we learn that it has flowered here recently for the first time in this country. Though hard to flower it is a fine plant; the flowers are probably over 5 inches across, and of a blue-purple, like that of some of the Kæmpferi varieties. The plant which flowered grew in the border of a greenhouse, and it seemed to show, what we have so often observed, that stemmed monocotyledonous plants must have active roots as near as possible to the growing point to do well. When this specimen, with a piece of rhizome, was taken up for the Scientific Committee, it was found that at the very end of the rhizome, directly below the flower-stem, descending as if they belonged only to it, was a mass of vigorous roots. The monocotyledonous stem, as a rule, appears to be a poor transmitter of sap, and even in the case of Palms, which often have tall trunks, it will be seen that the most important roots are those the higher on the stem, and nearly the youngest, which are not long very often in superseding those that are earlier formed. With few words more about this Iris we may add that it will prove one of the best if it can be flowered with any degree of certainty.

Vitis gongylodes.—Though already figured in our pages (January 13, 1883) from the first flowering specimens produced in this country, grown in the Cambridge Botanic Garden, we may once more revert to it, as it is again flowering there. We may do so because of the very handsome appearance of the main stems, which are beautifully undulating in their growth, and bear numerous lateral flowering branches. The appearance of this plant is now very fine, and it is even difficult not to regard it, in its habit of growth, as the finest species, so that it ought, in our opinion, to be more often cultivated in large houses, where it can never fail to be an object of interest and beauty if well treated.

A SUBURBAN WINTER GARDEN.

This term, Mr. Lascelles, of Sydenham Road North, Croydon, has appropriately given to a cheap form of glass-house which he has built and furnished with shrubs and plants for his own comfort and pleasure. As Mr. Lascelles truly says, he has a perfect winter garden, with numbers of plants blooming all the year round, and this without the aid of expensive hothouses for bringing plants into bloom to supply what are generally termed conservatories. He also contends that very few plants will continue in bloom with good appearance for a satisfactory length of time if they be removed from a hothouse to a conservatory, even if the latter be kept at the same temperature as the former. He instanced a case where twelve hothouses were kept going and several men employed to keep a large conservatory projecting from a mansion well stocked with plants in full bloom.

This plan necessitated the change of many plants once a week, and when done the result was a dazzling blaze of colour, without anything natural to attract or afford real comfort or pleasure while they are being inspected. The temperature, too, is necessarily too high under this highly artificial system to be either comfortable to visitors, or safe for their health. Mr. Lascelles aims at maintaining a moderate temperature in his winter garden throughout the year, which he generally succeeds in doing by employing an inexpensive system of hot-water pipes (to be explained below) in winter, and shading in summer. This temperature he prefers because it suits the plants he cultivates, and because he says it is the most comfortable temperature for human beings to live in, whether they be healthy or invalids.

The winter garden is 180 feet in length, 14 feet in width, with a span glass roof 12 feet high at the ridge. This roof is built to a wall on the south side, so that the aspect of the wall in the house is due north. According to general notions, this house should have been built to the wall on the other, or north side of the garden, so that the glass front would have had the full effect of the mid-day sun. But this is just the point that Mr. Lascelles preferred to avoid. There is plenty of light for the plants on and near the wall with its northern aspect, as shown by their healthy and vigorous growth; while, with the exception of a few hours at mid-day in summer-time, the path on this side is shaded, and any one can promenade, cut flowers or otherwise attend to them in a comfortable temperature. The shade of this wall in the heat of summer is considered to be advantageous to the plants in the house generally, while the extra fire-heat required to counteract its effect on sunny days in winter is but trifling. The object is to have a warm winter garden and a temperate-house in summer, and flowers to cut or take into the dwelling-house all the year round. With a southern glass front—unless there be an expensive system of shading by canvas, or the unsightly plan of whitewashing inside be adopted—the temperature from 9 A.M. to 4 P.M. must partake too much of the character of an Indian

climate or a Turkish bath to please or suit the English taste.

The glass side to this winter garden is, as will be inferred, on the north. A brick wall 3 feet in height is first built, and then glass sashes 5 feet high are fixed, to take the bearing of the roof.

The flooring of the house is divided in a very convenient and attractive manner. There is rockwork about 18 inches in width and 3 feet in height projecting from each wall, with spaces intervening for planting Camellias, Fuchsias, and so on, in the bottom soil. Between these blocks of rockwork, as they may be termed, concrete baskets containing Ferns, rock plants, and so on are fixed. Thus the bare stems of Rose trees and Fuchsias, which are trained to blossom in front of the glass on the one side, and high up the wall on the other, and under the roof on both sides, are hidden by charming foliage and small blossoming plants. At the foot of each wall, on both sides, a Fuchsia is planted under each tie-rod. These are trained up to form an arch by means of the main stems, and as the spaces between them are interwired they will soon form a pleasant shade over the paths. Fuchsias of the same or a similar colour are planted under each tie-rod, dark and light colours being grown alternately. There are seventeen of these cross-ties so covered. The effect already is charming, for as one sits at either end of the winter garden and looks over the paths the effect of the foreshortening is to give a complete panorama of blossom and foliage.

In the soil of the blocks of rockwork there are concrete vases placed on a level with the surface. These are for filling with rotten manure, on which are then placed large Pelargoniums, small Rose trees, and other blooming plants in pots. There are 130 Rose trees, large and small, in pots, and about the same number of Pelargoniums and Fuchsias. The object of placing the tubs of manure in the rockwork is that they may be crowned with Fuchsias, Pelargoniums, Roses, and so on, in pots a foot in diameter and a foot in depth. The roots of these plants find their way through the hole at the bottom of the pot, and therefore, just at the time when they are required to make a vigorous growth and send out a mass of bloom, they have extra food within reach to enable them to do it. These plants are lifted twice a year, and so vigorous has the growth of roots often been that the manure comes bodily out of the sub-pot or tub on removing the top one. The roots are then cut off under the bottom of the pot the plants stand in, the tubs are refilled with fresh rotten manure, and plants replaced for another vigorous growth. If I say that the top of these blocks of rockwork are filled up with small Ferns and rock plants, and moss that gets a taste of the rotten manure and forms a perfect collar 5 or 6 inches in depth around the base of the top pot, and also that the basket-like projections are made in the front of the rockwork and filled with suitable plants, the reader can fill in the remaining details and appreciate the effect of the whole.

The centre of this winter garden is equally interesting. There are two lattice paths about 3 feet 6 inches in width, one on each side, the outer line of each being against the 18 inches of rockwork. This leaves about 4 feet for the centre bed, which is filled with larger trees and plants. This bed is lined with concrete slabs, 2 feet deep. It is also divided across by slabs every 3 feet. Mr. Lascelles' object in doing this is to confine the roots of each tree or plant as much as possible to its own soil. Some trees and shrubs are gross feeders, and if their roots be allowed to run without check they will starve less vigorous ones, while, if it be desirable to move a plant or shrub bodily to another part of the house or elsewhere, it could not be done without injury to both plants as the roots would be interlaced and much of them sent out by both plants would have to be cut away to get them parted; but, by confining the main roots of plants to a given space each one may be removed to a more convenient place according to the size to which it has grown, or packed and sent to any part of the kingdom without causing any permanent injury. As evidence of the success of this plan, I may add that most of the trees and shrubs now in this house had been growing in smaller houses eight or ten years, and they were transplanted without the loss of a bud or leaf withering.

Mr. Lascelles divides his blooming plants, and brings them forward according to their respective seasons. The main crops are Roses in the spring, Pelargoniums and Fuchsias in the summer, Chrysanthemums in the autumn, and Camellias in the winter. Respecting the Chrysanthemums, I may say that these plants were in full blossom last year from October till after Christmas. But this year Mr. Lascelles has provided for a relay, for which purpose he has 350 plants in pots. Half of these will be introduced to the house at the usual time, and the other half will be kept in a cold house till December. Thus he will have a fine show of these charming winter flowers from the beginning of November till the end of January. Of course there are varieties of minor plants brought forward, such as annuals, for grouping and spotting about to make gay any dull corner or gap from other plants or shrubs having ceased flowering.

In the centre bed there is a Camellia planted exactly half-way between each pair of the cross-tie rods. Between the Camellias are a variety of choice and interesting plants, such as the winter flowering Chorozema, the spring-blooming Clematis indivisa, the Japanese Jessamine, the blue winter-flowering Lasiandra, Oleanders; fine specimens of the much-respected old-fashioned Myrtle; Jackman's large pale-coloured Clematis, blooming all summer; the ladies' favourite lemon-scented Verbena; Genista, a fine plant, 6 feet high, with four stems tied into a pyramid; Plumbago capensis, 12 feet high, clean and vigorous; Datura, 12 feet high and 8 feet through, close up under the glass, full of its long bloom-buds; and so on.

The economy in the materials used, the conveniences for its easy management, and its efficiency in regard to the purpose for which it was designed, leave nothing to be desired. The roof is formed of suitably light wooden rafters, and the glazing is done by puttying. Mr. Lascelles' experience is that iron and glass without putty are not economical. Heat generated by the fire escapes between the crevices left by the imperfect fitting of the glass and iron. It is now, also, frequently, if not generally, found that these crevices harbour mischievous insects. The fitting of the roof at the eaves over the glass front side is glass to glass—that is, the lower panes of the glass of the roof rest on or join to the top of the panes of the glass front. The roof panes slightly project over the front panes, but not far enough to shoot the water clear, as it is preferred to have the water from the roof run down the front glass, whereby it is washed. The mode of ventilation is cheapness itself. Sashes for opening at the top and sides are simply hinged on to the runners. The opening and holding iron is of a modified "S" form with an eye in the centre for screwing it to the upright which the sash closes against. A slot is made in the lower end of the "S" into which a knob on the frame of the sash is inserted. By depressing the top of the "S," the knob is acted upon, and the sash may be opened an inch and held perfectly "taut" in that position, or it may be opened 6 inches or a foot, and left safely in either position. The "S" is of cast-iron, its width 2 inches, and its cost 3*d*. Mr. Lascelles says that, so far as he knows, not a single pane of glass in this house has been cracked, although it was completed over two years ago.

Another feature attached to this house is found to answer admirably. A bank of soil with concrete facing is raised against the wall on the glazed side. This is 3 feet high, and in the form of two steps, each 18 inches high. The bottom layer is about a yard in width, and the top one half that distance. The main object of this is to catch the rain-water from the roof, so that it may follow down the wall, and percolate through the rockwork and the soil in which the intermediate plants stand. Ample provision is made by ingenious drainage for preventing the soil from getting waterlogged. The wall side of the roof is troughed, and the water conducted into the house on that side for the same purpose by lead pipes; thus just as much rain-water as would fall on the ground if it was uncovered is conducted into the house for the use of the plants. In the event of an absence of rain for a long time, every facility for keeping roots cool and for producing vapour by means of evaporation from water heated by the hot pipes is provided. In the middle of the house there is a tank for water to be heated in it. This is between the two paths, and covered with two flaps simply hinged together in the middle, so that one may be opened for a dip from either path. The hot-water pipes were cheaply but efficiently laid the whole length of the building in the trough under the lattice path.

One merit of this winter garden is the small cost of the glasshouse and its fittings. The roof is quite plain, but Mr. Lascelles says he has long found that the plants and shrubs he likes to grow thrive better with a plain glass span-roof placed at a comparatively low height than they do under high domes of iron and glass. Besides, the eye soon ceases to be attracted by fine ornamental work at a high elevation. The cost of this house, everything included, was about £3 per foot lineal measure. Of course these houses can be constructed 50 feet, 100 feet, or any other length at about the same proportionate rate. The cost of fuel averages about 3*s*. per week the year round.

Every plant on the floor can be reached from the paths, for tying or trimming, or for gathering flowers from, while, with the aid of 6-feet steps, those on the cross-bars and wires, as well as those at the top of the roof, may be similarly attended to. Mr. Lascelles and his family amuse themselves so much in this way that his gardener says he can get through the work of shifting pots and the heavier watering in summer in an average of a quarter-day's time, which does not entail much expense for manual labour.

The winter garden is admirably adapted, too, for invalid establishments and for hotels and boarding-houses in such humid climates as Torquay, the Lake, and other districts. With such an attraction and its accompanying comforts visitors would often stop over a few rainy days, instead of saying, "We can't stand this; we had better pack up and go." Where one is required for a large establishment, Mr. Lascelles recommends that it should be built in three sections, the width of his own, so that a 10 feet wide flooring may be allowed for promenading and wheeling Bath chairs and perambulators. The cost of a house in three sections of 14 feet each would be less in proportion, as there would be ample light without any side glass.

The concrete slabs and the pieces of concrete for rockwork are Mr. Lascelles' invention, and are now largely made at the works of the firm of which he was formerly a partner, at Stratford. The slabs are also used most successfully for house building, of which there are several specimens in the Sydenham Road, Croydon. With 2-inch walls the houses are perfectly water-tight, and as the concrete is impervious no moisture can rise from the foundation, or the soil outside, by capillary attraction. The outsides of the houses are faced with rough work in various patterns and colours, of the same material. The colouring is done by mixing oxides and carbonates with the concrete on a plan similar to that adopted by painters for mixing their paints.

There are small Fern-houses, Grape-houses, and Peach and Nectarine-houses in Mr. Lascelles' garden. They are built to the north and east walls, exposure to the full glare of a mid-day summer sun, with the roots of the trees kept cool, suits them. There is also a conservatory leading from the dining-room to the winter garden. This is 20 feet in length, with an arched roof 15 feet to the crown. It is used entirely for foliage plants, and among them are some rare and fine specimens. *Amateur.*

TRAVELS OF A USEFUL PLANT.

In M. Mangin's work, *Les Jardins*, published at Tours in 1867, a curious account appeared of the importation of the Coffee plant into France, and of its subsequent conveyance to Martinique; and the same story was repeated in the *Famous Parks and Gardens of the World*, an illustrated volume, published in London in 1880, by T. Nelson & Sons. We learn from M. Mangin that the Coffee plant first struck root in French soil in one of the hothouses of the Royal Gardens of Versailles, in 1703. But the gardeners of that time were necessarily inexperienced in the cultivation of exotics, and the plant died from ill-treatment. The Dutch being then large importers of produce from the East, another Coffee plant soon reached the Royal Gardens as a present from the Burgomaster of Amsterdam. The plant flourished, and having been successfully propagated by cuttings, a young plant was given by Antoine de Jussieu to the Chevalier Déclieux, a naval officer, who undertook, at the request of the donor, to convey it to the French colony of Martinique, the climate of which was believed to be suitable, so that Coffee might be raised there as an article of commerce. Aided by gods and man, by Minerva, Bacchus, and Hercules, and by

various enterprising and colonising nations, from the Greeks and Romans to the modern English, unnumbered plants have been removed from their original stations to others in very different regions, sometimes in another hemisphere, or at the antipodes, and frequently the new stations have suited the emigrants better than the old ones.

The travels of transported plants have been often attended with danger. Sometimes they have encountered *en route* a latitude too cold for them; sometimes the ship's crew have mutinied, as in the case of the *Bounty* with the Bread Fruit on board; and still more frequently the plants have been neglected. But the French captain was just such an enthusiast as our great plant collectors and importers are glad to meet with, and he brought his pet plant—for he only kept the cutting from Versailles alive by petting it—safely to Martinique. The dangers of the voyage are summed up briefly in the words, "Want of water." Nothing in a sea voyage can be more terrible than a failure of the store of water. The ration of the precious fluid which was served out to M. Déclieux, at last, did not exceed a small glassful daily, and perhaps no other such example of self-denial in favour of a valuable plant can be offered than that which forms the subject of M. Mangin's very interesting narrative. The Chevalier's devotion to the Coffee plant entrusted to his care saved its life. He suffered severely, but he still persisted in sharing the glass of water with the plant, and he brought it to its destination in safety.

If Professor Asa Gray reads this story I hope he will regard it as making amends for an error I committed a year or two ago in half-killing the wrong plant in these columns. This was done on pretty good authority, too. The Professor discovered my mistake, and corrected it, but he did not give the true version of the story, which I trust has now been done, as it should have been done before if I had met with it sooner. *H. E.*



FIG. 16.—SENECILLIS CARPATICA: FLOWERS YELLOW.

SENECILLIS CARPATICA.

STRICTLY, we suppose, we ought to refer this to Senecio, but as that genus is so densely populated we may be excused for retaining the garden name of this fine herbaceous plant. A specimen was sent us from Newry in early summer, by Mr. Smith. The figure we give (fig. 16) is more expressive than words, and will suffice to corroborate our statement, that this is a very stately herbaceous plant, with yellow flowers, suitable for the back rows of the herbaceous border, or adapted for growing in front of shrubs, and like situations. The plant is a native of the Carpathians, and is but little known in gardens. It is allied to Cineraria glauca.

FORESTRY EXHIBITION.

(*Continued from p.* 39.)

SWEDEN AND NORWAY.—For real practical utility perhaps few exhibits can excel or even equal that of the above countries. Some idea may be formed of the immense Pine and Fir forests which cover a very considerable surface of this peninsula, when we state that the value of timber yearly exported from these countries to the United Kingdom alone is close on £5,000,000. Until lately but little restriction has been placed on the cutting of timber in these countries, so that great as the forests are they cannot be said to have escaped injury, or that planting has been engaged in to the extent it should have been. The Forest Culture Society, the object of which is to protect the forests and promote tree culture, though only in its infancy, is doing good work in this way, and already a considerable portion of ground has been planted or sown. Amongst the exhibits are several fluted columns, 21 feet in length and 4 feet in circumference, each fluting consisting of one planed board an inch in thickness. These columns have a remarkably light, clean appearance, and from the conspicuous positions in which they have been placed attract a good deal of attention. Several well finished herring barrels and a butter firkin show plainly what can be done in this way by the Scandinavians. Neat models of sledges and rafts for the conveyance of timber are also on view, as well as the implements used by the woodmen, and a picture showing the manner in which timber is transported in winter from the forests to the rivers. Sections of Pine and Fir are also exhibited, which, with an interesting collection of young Firs and Pines, showing the trees at different stages of their growth up to four years, cannot fail to be of great practical value to the arboriculturist.

ST. VINCENT.—Occupying one of the side tables in the central transept is a series of most interesting and curious exhibits from the Island of St. Vincent. Particularly noteworthy amongst these is a numerous collection of fruit-bearing trees and shrubs, as well as a large representation of their edible products. Of tree seeds there is also a fair collection, and good examples of the various woods used for dyeing purposes. The model of a woodman's hut constructed of Bamboo, and thatched with coarse grass, as used by the natives for temporary shelter, boats, hats, and baskets, are also included in the collection. Chocolate, or rather the fruit of the Cacao from which it is made, and the roots of the plant from which arrow-root is obtained, are well worthy of inspection, as are also the "Old Man's Beard," a native seaweed, and the nest of one of the termite family, popularly called, from its destructive influence on wood, the "Carpenter's Friend,"

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both of which may be regarded more as curiosities than otherwise.

Denmark.—Of great value to practical forestry is a series of masses showing the mean heights of various forest trees from 20 up to 120 years of age, and the cubic contents per acre at the same stages of growth. Sections of old Oak and Beech, for which this country has long been famous, as well as various other woods, to all appearance of good quality, are sent for exhibition. The Crown forests of Denmark are well managed by practical foresters, and a society has also been established for the planting of waste land with timber. In 1881 nearly 500,000 acres were under woodland. Models of the ploughs used by the society for reforesting the waste lands, and grubbers which are employed for breaking up ground in the woodland intended for the reception of seed, are well worthy of imitation by such of our own foresters as are at times engaged in a similar pursuit. Beautifully coloured plates of trees, leaves, and forest insects, photographs of remarkable trees, fungi considered detrimental to tree life, and a handy and to all appearance practical instrument for measuring the heights of trees, are all placed on the table for inspection. The above, with various specimens of wooden shoes, some made entirely of wood, others of wood and leather, form a most interesting collection of the various forest products from Denmark.

Cape Colony.—This name is often applied to the English colony now better known as the Cape of Good Hope. The principal forest of this country is the Knysna which covers an area of about 2500 miles of the mountainous region between Algoa and Table Bays. Great inducement is now offered for extended planting at the Cape, which, with the measures of conservation recently adopted by the Government, will ultimately be productive of beneficial results in not only checking the threatened deforesting of the country but in clothing the vast flats and waste lands with flourishing woods and plantations. The principal indigenous tree here is the Yellow Wood, which not only attains a large size, but is particularly valuable for flooring purposes as well as the construction of carts, waggons, &c. In the manufacture of furniture the Stinkwood is largely employed, being of an unusually rich appearance and susceptible of a high polish. Black and white Ironwood, Sneeze-wood, which is of great specific gravity; Camphor-wood, the Stone Pine, and the Cape Box, are also exhibits as well as a working model of a forest waggon bearing a variety of the native woods. Of curiosities tastefully arranged on the table, we particularly noted a number of native articles of adornment, such as necklaces and bracelets of Melon seeds, bead-work, hats ingeniously constructed of weeds, and an interesting collection of the now famous Zulu assegais, ostrich eggs, &c.

Sierra Leone and Gambia are also well represented by large and varied displays of forest produce. Thirty-two specimens of native trees have been sent by the Government, none, however, of any particular value, but generally well adapted for ordinary purposes. The Rosewood and Mahogany from Gambia are very inferior, both in graining and texture, to what is generally used in this country, but they may no doubt be turned to good account by the cabinet-maker of ordinary pretensions. Perhaps the most useful of the West African trees is the Koorooloongo, which is not only plentiful but of very superior quality, and used for similar purposes to what the Oak is with us. The produce of the Rubber-Taul, one of the best rubber-producing trees of the colony, is well exemplified in various samples of this commodity shown both in pure and impure states. Other trees are valuable for their medicinal qualities, while for the production of fruits, wine, gums, and various dyes, including indigo, various others are much in request. Samples of the grasses and cereals grown in this country are also shown, as well as ropes and nets made from fibre. One of these fibres is of very substantial quality, as is illustrated by a hammock made from it and forwarded for exhibition. Other exhibits on this stand are the Mandingo saddle, which is made of wood, various cooking utensils, models of native huts, canoes, drinking cups, and chairs; all of which are tastefully designed, and at once convey the idea that the natives are quite at home in these various classes of workmanship.

The Californian Redwood Trees.—At the intersection of the western transept with the nave is conspicuously displayed a cross section of one of the giant Redwoods from California. From its immense size this tree (Sequoia sempervirens) must be ranked among the grandest and most impressive in the exhibition. Some idea of this colossal section of wood and bark may be realised when we state that the tree from which it was cut was 295 feet in height, and contained no less than 6250 cubic feet of timber. It is certainly difficult for even the liveliest imagination to form any adequate conception of such a leviathan, and if such a task be one to tax the fancy what must the reader think of other trees in the groves of California that have measured over 400 feet in height! The exhibit in question consists of a slice of the trunk, 13 feet in diameter, and several inches in thickness, around which is placed in position a section of bark from the same tree 12 feet in height, thus forming a complete chamber whose interior would accommodate the inmates of an ordinary household. The bark, owing to being deeply furrowed, is of varying thickness, of a dull brown colour, and soft or elastic to the touch. The timber of the Redwood, which varies a good deal in texture as well as hue, is usually of a deep rich brown colour, and admirably adapted either for outdoor work or internal finish, which the various articles of furniture here submitted for view only too plainly show. It is also found to be remarkably durable, free from warp or shrinkage, and easily wrought—qualities which cannot be too highly prized in any class of timber. Some immense logs of these Californian trees, both in a rough and finished state, are placed contiguous to the sections above-mentioned. The exhibit, which is well arranged and of particular interest, has been sent by the Californian Redwood Company in Edinburgh.

Collections of Cones, Tree Seeds, &c. (Vilmorin-Andrieux et Cie., Paris). — In looking over the complete and accurately named collection of cones and tree seeds exhibited by the above enterprising firm we could not help thinking what a pity it was that a better system of arrangement had not been adopted by the committee, and that exhibits of real practical value, such as this, had not been allotted a more prominent position, more especially as some of those laid out in the main portion of the building have, practically speaking, no connection with forestry whatever. In the collection of Pine cones and seeds ample opportunity is here afforded for settling many points of dispute regarding the nomenclature of the different forms of this rather complicated section of our forest trees. Of these several very rare kinds are on view, such as Pinus sylvestris rigaensis, P. aleppica, P. Hamiltoni, P. insignis, P. muricata, P. Torreyana, and P. tuberculata. The bark of three varieties of Acacia (A. dealbata, A. melanoxylon, and A. retinoides), all valuable for their rapidity of growth and the great quantity of tannin matter they contain, are also shown. Should the quantity and quality of tannin matter contained in these varieties of Acacia be equal to that of our native Oak they must be of great commercial value, attaining, as they do, a diameter of some 12 inches in ten years. A very substantial and useful rope made of the inner bark of the Lime tree, and festooned with cones, is gracefully arranged around the margin of the stall, while the interior is decorated with dried specimens of thirty of the most useful varieties of Eucalyptus, seeds of which are also exhibited in glass cases on the table.

From Devonshire Mr. Barrie, forester to the Hon. Mark Rolle, sends a highly interesting and well arranged series of cones, tree seeds, and sections of wood, principally the rarer kinds. The arrangement and nomenclature of this collection certainly reflects a great amount of credit on the exhibitor, who, as will readily be seen from the exhibits, has gone to a great amount of trouble in the classification and arrangement of his valuable collection. This estate, judging from the cones sent, must not only have a well assorted collection, but be well suited for the cultivation of many of the new and rarer Conifers. Various other valuable collections of cones and tree seeds are also exhibited, to which, later on, we hope to refer.

Wood-tests. — Mr. McCorquodale, forester at Scone Palace, has sent for exhibition several articles of real practical value, as illustrative of the qualities of various woods that have, since the failure of the Larch in this country, attracted a good deal of attention. The first of these is a post of the Douglas Spruce, which, with twenty-two others, was, in the erection of a new wire fence at Scone, put in to test their quality along with Silver Fir and Larch. It has thus been seven years in use, and would, as Mr. McCorquodale remarks, last for many more years. After a careful examination of this post we feel certain that neither the Larch nor Silver Fir are in a better state of preservation, a point on which we would much like to have Mr. McCorquodale's opinion. In an article on the Douglas Fir, which recently appeared in the *Gardeners' Chronicle*, this experiment was brought under notice, and we are certainly pleased to know that it has, so far as regards the lasting qualities of the timber of this tree, been all that could be desired. We have every reason to believe, as we have frequently stated before, that there is a bright future in store for this valuable Fir.

The second experiment was made with Silver Fir to test its capabilities for railway purposes, and is as follows:—Several sleepers of Silver Fir were laid beside new Baltic Pine sleepers on the Caledonian Railway line, 4 miles north-west of Perth, on April 17, 1877, to test their durability, and were lifted on June 21, 1884, with the object of being seen at this Exhibition. The sleepers have thus been under ground for over seven years, and it is believed they will last as long again. Many of the Baltic sleepers were thrown out last year being worn out. These two experiments, conducted as they were in a fair and open way, and by one who can confidently be relied upon, will no doubt be the means of increased attention being devoted to the cultivation of the trees in question.

TEDSMORE HALL GARDENS.

Passing along a characteristic Welsh road about 2 miles from Rednal Station on the Great Western Railway between London and Chester, you come to this charming place, the residence of the Rev. T. M. Bulkeley Owen. Entering by the gate, before which, however, you will be inclined to linger to enjoy the grandeur of the mountain scenery in the distance on the right, but for this wait till you reach the front of the Hall. Passing up the short carriage drive, the idea of the place is ascertained—rich woodlands, with shrubs, Foxgloves, Ferns, &c., nestled in tall grass, the taller allowed to have its own course, mainly perhaps on account of the bulb foliage not being fully ripe, for in all the woodland immediately surrounding the house thousands of bulbs make gay the early season of the year—Scillas, Daffodils, Snowdrops, Winter Aconites, Crocuses, &c., lighting up the dull months with bright yet modest beauty. Now we stand at the entrance to the hall-door; fancy the picture if you can—splendidly wooded all round, grand specimens of Cedar of Lebanon, Araucaria, Larch, Chestnuts, Oaks, with innumerable shrubs, flowering and others; and gazing in the distance over a district of sylvan beauty you will see the huge piles of a former era—the Welsh mountains, clad in a hazy light, varying materially during the day, but extremely effective during eventide. At a distance of about 40 miles to the west is the Berwyn Range and Arran Mowddy. Passing round to the south terrace a magnificent view is secured of the Corndon and Stiperstones, while a little to the left may be seen the top of the Caradoc and the Brown Clee, the highest mountain in Shropshire; and on the right you get almost an unparalleled view of the Breidden series and the Welshpool valley.

But, some will be asking, what are the special subjects fostered at Tedsmore? Well, all hardy subjects, herbaceous and bulbous plants, shrubs and trees, indeed, here is accumulated a wealth of hardy subjects, the like of which one does not often have the happiness to see; and the happy and artistic manner in which they are arranged shows you at once that its owner is not inclined to encourage the now nearly defunct orthodox style of gardening. Beds and patches of summer colouring are at a discount everywhere, with the exception of those on a terrace at the south of the Hall, which is planted with summer bedders; but in the writer's opinion these were far less effective than the clothing of the terrace wall with different varieties of the red Valerian—a deep red variety was especially attractive, with Snapdragons and Erinus alpinus; the development of the latter was most remarkable, the tufts being some of

them suspended from the masonry by long woody shoots, and the flowers were peeping through the shrubby growth at the base of the wall; this looked extremely pretty. As you walk through the place many most charmingly effective blendings of foliar and floral growth rivet the attention; Copper Beeches, Acer Negundo variegatum, Gueldres Roses, and Laburnums are prettily arranged, so that the contrast of each to the other is well brought out, and as a whole the effect is very beautiful, while in the foreground you may see masses of Spiræa aruncus, Eastern Poppies, towering Foxgloves, and Delphiniums; fancy a picture of light blue Delphiniums, broad masses of Spiræa aruncus, backed up by a Copper Beech. Similar arrangements to this are numerous at Tedsmore. To give anything like a list even of the plants worth noticing would occupy far too much of the valuable space of the *Gardeners' Chronicle*, but some of the more conspicuous plants were jotted down upon the spot, and we will begin with the

HERBACEOUS AND BULBOUS PLANTS.—A large superficial area is occupied with these, and the method of culture adopted, although not peculiar to Tedsmore, is nevertheless much less practised than it should be, viz., the "let alone management." The borders are never dug nor hoed, but always hand-weeded, and early every spring a good top-dressing of manure and leaf-soil is given, which evidently is just the treatment the plants enjoy, for rarely does one see more luxuriant growth. Lathyrus Drummondi in several places was very striking, being covered with the racemes of scarlet flowers, and reminded one that it was far ahead of any other everlasting Pea for garden culture. Dictamnus Fraxinella, in a mass 2 feet or more through, is very showy; the white variety was also in flower. One of the finest Crane's-bills is Geranium armenium, in a mass 3 or 4 feet through, and as much high, crowded with the large purple-crimson flowers. Senecio japonicus, known also under the name of Erythrochæta palmatifida, was very striking, also the scarlet racemes of Stachys coccinea; whilst the dense plumose panicles of Astilbe japonica variegata were very pretty. How is it this variety produces much more dense panicles than the type? Stobœa purpurea, with its pale green prickly leaves and pale purple capitula, is a desirable Composite; while another yellow globular-headed member of the same family under the name of Craspedia Richardi was very interesting and showy. Ligularia macrophylla is a very stately plant, producing large glaucous foliage and tall corymbs of yellow flowers—a most effective plant. Grand masses of Rheum nobile and R. palmatum var. tanghuticum were also effective, especially the latter. Two of the lions of the place are Tropæolum polyphyllum and T. speciosum; the former was especially attractive—indeed I have never seen it in happier luxuriance; established in a Rhododendron bed, it evidently has its own way, producing long trailing shoots of glaucous foliage and golden flowers, covering a large portion of the bed, and scrambling over the branches of the Rhododendrons, clothing the profound green of the latter with silver and gold. Its congener, T. speciosum, is thoroughly established, showing itself at a long distance from the place where it was first planted; it did not cease to grow through the past winter, and ere this it is most likely like a little fiery cloud amidst the surrounding greenery.

Thalictrum aquilegifolium, with its sweet Columbine-like foliage and broad heads of white feathery flowers, was very showy; while a humbler subject of blue may be seen in Ajuga Brockbanki, raised at Didsbury, and Mr. Brockbank may well be proud of his child. Lupinus arborescens, as here seen, is charming—a huge mass of light-green foliage and yellow flowers; while a broad spreading group of Jerusalem Sage (Phlomis fruticosa) was equally showy. The Siberian Lungwort—Mertensia sibirica—was also very handsome in a large clump, with the pale blue, pendent, tubular flowers; and when Lithospermum prostratum may form a blue carpet it will be appreciated. In a dry sunny position a broad spreading mass of this was most effective, and close by one may see yards of Cytisus triqueter, in full flower, was not an objectionable associate. One of the best of the Milk Vetches is Orobus aurantiacus, with decidedly orange flowers—a wide deviation from the usual colour in these plants.

AMONG THE ALPINES IN FLOWERS were: Potentilla dubia, one of the brightest of the genus, rich yellow, very dwarf and free; the silvery Crane's-bill (G. argenteum), doing right well; the Pyrenean Ramondia, and the muchrarer Phyteuma comosuma, both nicely in bloom; while near them were Cypripedium parviflorum, calceolus and spectabile, and broad masses of Arenaria grandiflora, one of the finest of those pretty alpines producing a profusion of comparatively large white flowers; and Delphinium cashmerianum, Hypericum reptans, Papaver nudicale album, Mazus Pumilio, the scarce Cedronella cordata, Primula japonica alba, and the very fine Cortusa Mathioli grandiflora, producing umbels of flowers on scapes 2 feet or more high: this was in the well furnished fernery which the exigencies of space will not permit one to notice further.

Many bulbous plants were in flower. There is the Vegetable Fire-cracker of California, Brodiæa coccinea, growing with B. congesta, both in abundance and unusually fine. I counted one umbel of the former carrying not less than twenty-five flowers, of full size and richly coloured—the deep scarlet tube, with green limb segments. Several Liliums were in flower, masses of the old but ever-welcome croceum, with immense heads of orange-coloured flowers. L. Szovitzianum was represented by an unusually strong specimen, supporting a large head of flowers; L. martagon album was very showy, as it always is, and the true L. pomponium, was coming on. Nothing could look more promising than the groups of L. auratum, which have quite established themselves and have stems like walking-sticks, and when in flower with their surroundings they will constitute a very effective feature. Chrysobactron Hookeri, with its spikes of orange-yellow flowers, is very pretty.

HARDY SHRUBS.—These are grown with an enthusiasm far too seldom seen nowadays, and the variety is very great. A considerable time may with advantage be spent at the wall separating the kitchen from the flower garden; at the base and on the mural surface are accommodated a very choice series of shrubs, and none in my opinion were more showy than Ribes speciosum, with its Gooseberry-like leaves on prickly branches, and the scarlet drooping Fuchsia-like flowers—which made one fancy a better name would have been found in fuchsioides: without doubt it is one of the handsomest wall shrubs possible to grow. A large specimen of Abelia triflora, crowded with the terminal corymbs of pale pinkish flowers, having behaved in the same fashion for several years; Azara microphylla is a very elegant foliaged shrub, the specimen here being about 6 feet high. Choisya ternata was represented by a bush 3 feet or more high and as much through, covered with its white sweetly scented Orange-like blossoms, showing it to be quite at home; and it has stood here for years unprotected, proving that it will do at other places besides the sunny South. Escallonia Philippiana from Valdivia, is certainly "one of the finest of all hardy shrubs," as Dr. Masters described it in the *Gardeners' Chronicle*, July 27, 1878; the branches are thickly covered with pure white sweet-scented flowers, which last a good time in beauty. The Green Rose was also nicely in bloom—a remarkable curiosity, and to a colour-loving soul not very attractive. Close by, and far more charming, was the Austrian Brier, nicely in flower. Other shrubs here noticed were the scarce Carpenteria californica, Viburnum plicatum, a Leptospermum lanigerum, Indigofera floribunda, Spiræa adiantifolia, the beautiful Eurybia Gunnii, Lonicera tomentosa, Cornus elegantissimus, Olearia Haastii, and several specimens of Pavia macrostachya, one of which was in flower. In other parts of the ground several beautiful species were in flower; conspicuous amongst them was the Carolina Allspice (Calycanthus floridus), fine specimens, covered with the richly scented blossoms, which one could detect some distance from them; Jamesia americana was very attractive, with its huge corymbose heads of pure white, slightly fragrant flowers, good bushes forming objects of special interest and beauty. Close by this I may mention a nice specimen of Buxus balearica, which was first obtained as a cutting from the home of the Darwins at Shrewsbury—it lives as a reminder of the noble dead. Two species of shrubby Veronica are worth recording, viz., V. pinguifolia and V. Hulkei, the former very dwarf, with small glaucous foliage and white flowers, very desirable as a rockery shrub; the latter with deep green foliage and lavender coloured flowers in slender racemes—this most likely requires a sheltered situation. Escallonia macrantha was a picture of beauty, crowded with flowers. Rosa rugosa and its white variety were very attractive; the type was covered with flowers, revealing the great value of the plant for decorative purposes; R. polyantha was also in good trim; Spiræa ariæfolia would soon be most charmingly effective, being crowded with the drooping inflorescence; and while with the Spiræas I must not forget to mention a very fine herbaceous species named Pallasii; it grows about 3 feet high, and produces very fine heads of pure white flowers. Zenobia pulverulenta, with its silvery foliage and white Arbutus-like flowers, was very showy. Other very pretty and comparatively rare shrubs noted can only be mentioned, such as Pyrus arbutifolia, Spiræa Lindleyana, Olearia dentata, Stephenandra flexuosa, Illicium floridanum, I. religiosum, Genista hispanica, Comptonia asplenifolia, the curious New Zealand Bayonet-plant, Aciphylla squarrosa, Salix regalis, Lonicera Ledebouriana, Pittosporum undulatum, Pekoe Tea-plant, Aralia Maximowiczii, &c.; the whole forming a most interesting and instructive series, enticing one to linger over them for hours, enthusiasm all the while being kept alive by the kindly interest and genial hospitality of the owner of Tedsmore. And thus was spent a happy time in one of the richest private collections in the country, and no one more than the writer feels how imperfectly this sketch represents it.

THE LO-FAU-SHAN MOUNTAINS.

IN the month of August last Mr. Charles Ford, Superintendent of the Botanic Garden at Hong-Kong, accompanied by the Rev. E. Faber, visited the Lo-Fau-Shan Mountains, situated 12 miles north of the East River, and 50 miles distant from Canton, for the purpose of making an exploration and collection of its rich and interesting botanical treasures; and we quote the following remarks by Mr. Ford, from his last annual report to the Colonial Secretary:—

Having learnt from past experiences the advantages which the natives will take of a foreigner's helplessness if assistance is required to transport either himself or his baggage, &c., I took the precaution of having several men from our regular staff with me, the wisdom of which was proved by subsequent events. As it transpired, the presence of these men enabled me to take a very independent position when additional bearers were required, and their usual extortionate demands were made. It was possible eventually to secure carriers at rates which were not excessively exorbitant. The passage from Canton to Sheklung was made in an ordinary Chinese passenger boat; the accommodation, which would be by no means pleasant for a lengthy journey, can be put up with for a short distance. From Whampoa to Sheklung the country is flat and well cultivated. Near Whampoa the crops consist chiefly of Paddy, which, as we approach Sheklung, is replaced with Sugar-cane (Sorghum). After disembarking in pouring rain at the busy town of Sheklung, Mr. Faber and myself decided to make our way at once for the Lo-fau Mountains and leave all baggage to be brought on by the coolies as quickly as they could follow us. The way—road it could not be called—lay across 12 or 14 miles of flat land, generally Rice fields, over which we had to travel on intricate paths, as slippery as if they were greased, often not more than a foot wide and standing a few inches only above the water with which the fields were inundated. We arrived at the foot of the hills in the evening, and there, in a monastery, awaited the arrival of the coolies, who had all our clothing, provisions, and other necessaries with them. However, as it turned out, the men did not arrive until after dark on the following day, the difficulties of the road having been too great for them to make a quicker journey. I need not describe the discomfort which Mr. Faber and myself had endured in the long and anxious waiting for their arrival. We would have sent a messenger back to ascertain the cause of the delay, but it was impossible to hire a man, the excuses made being that the people were all too busy with their crops.

Having secured the use of a room in the Wong Lung Kun Monastery, situated at about 600 feet altitude, a commencement was made the following day of the examination and collection of the mountain plants. As soon as the locality accessible from this station was systematically botanised, a move was made to another centre, and so on successively to the

end of the time. The highest station was 3100 feet above sea-level; from this I ascended the loftiest peak, which was found to be about 3500 feet above sea-level. The total number of stations stayed at was six.

On the mountains themselves there is but very little cultivation, and what there is exists only to a very small extent close to the monasteries. On account of the steepness of the hills it could scarcely be otherwise. However, after ascending to a pass 1200 feet altitude, near the Cha Shan Monastery, the road descended until it reached 800 feet above sea-level, and on the side of the road there is a considerable amount of cultivated land, forming, with the hills rising on all sides to from 1000 to 3000 feet altitude, a very beautiful and prosperous looking valley, or kind of plateau. Here, as for 300 miles up the West River, the absence of forest scenery is painfully impressed on one. When seen from a distance of several miles the mountains show a very small area of forest growth on them. However, in places where trees have been permitted to remain undisturbed by the reckless woodcutters, they have assumed in many places noble proportions. These lovely and interesting exceptions to the bareness of the mountains are invariably surrounding monasteries secluded in sheltered and rich ravines, and they owe their preservation to the protection and fostering care of the priests. Even in spite of the sacredness of the localities, the priests in some places complain of the troublesome people, who frequently make raids on the priests' domains for the purpose of securing firewood.

The trees of Pinus sinensis adjacent to the Wong Lung Kun Monastery are very fine indeed, but they are exceeded in magnificence by those of the So Liu Kun Monastery, secluded at an altitude of about 800 feet, where six of them, within a radius of about 50 yards, in a dense mixed forest of luxuriant trees, averaged 11 feet 7 inches in girth at 6 feet from the ground, and about 150 feet in height. The largest of them was 15 feet 4 inches in circumference. A Pine tree which had been blown down and was being cut up I measured, and found its height to have been 102 feet, circumference at 10 feet from the ground 7 feet 10 inches, and it had seventy-five annual rings. Rivalling these were splendid trees of Mangifera indica, the Hog Plum, 11 feet in girth; Liquidambar formosana, 6 feet 2 inches; Litsæa sp., upwards of 5 feet; and Paratropia cantonensis, 4 feet 6 inches —the latter, which we are accustomed to see as a shrub only, was here, as will be understood from the girth, a large tree, and on its stem and branches were innumerable epiphytal Orchids. Amongst the trees were also exquisite specimens 80 feet high of Dr. Hance's new Palm, Caryota ochlandra, the fibre from the leaf-sheaths of which is used for rope-making, &c. On their stems at a great height from the ground were plants of the grand Fern Polypodium coronans encircling the stems, and forming most beautiful objects. Camphora parthenoxylon was also here in abundance, with stems nearly 9 feet in girth. The Camphor trees bore on their stems and branches abundance of Orchids of two species, which were probably Dendrobium japonicum and a Phalænopsis, living plants of both of which are now flourishing in our Gardens. A very fine tree of Celtis japonica had all its larger branches completely covered with the fine Malay Orchid, Dendrobium aggregatum, and the Chinese Polypodium Fortunei; near here, also, were very fine specimens of the beautiful Tree Fern Alsophila spinulosa, which had been first discovered in China, at this place, by my observant companion the Rev. Mr. Faber, about three years ago.

In abundance, near the mountain stream, I noticed Viburnum Fordiæ, Hance, which I first discovered on the West River, in 1882, looking extremely beautiful with its branches laden and gracefully drooping over rocks with the weight of its bright coral-red fruit. Not far from the So Liu Kun Monastery, close to a village, a magnificent specimen of the Longan tree (Nephelium longan) had all its limbs and trunk covered and festooned with the epiphytal Asclepiadaceous plant, Dischidia chinensis, which hitherto had not been seen out of Hong Kong. The sight was exceedingly beautiful, and one not likely to be soon forgotten. During the expedition upwards of 850 living plants were collected, and 320 species were collected and dried for the herbarium, and brought back to Hong Kong. As the collections were made the boxes and packages of plants were despatched, a few at a time, in charge of a member of the staff, to Hong Kong, to avoid any suspicion or obstruction on the part of the natives, who, had they seen the whole collection leaving at one time, might have given some trouble to us.

Living and dried specimens of all the interesting plants have been sent to the Royal Gardens, Kew, from whence I have been favoured by the Assistant Director, Mr. Thiselton Dyer, with a report on them by Professor Oliver. Twenty-nine species, of which fifteen are apparently new to science, have not hitherto been found out of China. The plants of the following list, which Bentham in the *Flora Hongkongensis* states had been known only from Hong Kong, were seen on the Lo-fau-shan Mountains :—

Acrostichum decurrens, Hook.
Ainsliea fragrans, Champ.
Alsophila podophylla, Hook. fil.
Alyxia sinensis, Champ.
Ardisia primulæfolia, Gard.
Argyreia Championi, Benth.
Atalantia Hindsii, Oliv.
Bauhinia Championi, Benth.
Bolbophyllum radiatum, Hance.
Bowringia callicarpa, Champ.
Camellia reticulata, Lindl.
,, assimilis, Champ.
Calophyllum membranaceum, Gardn.
Capparis pumila, Gardn.
Clematis crassifolia, Benth.
Diospyros eriantha, Champ.
Dischidia chinensis, Champ.
Elæocarpus chinensis, Hook. fil.
Eurya Macartneyi, Champ.
Ficus chlorocarpa, Benth.
,, impressa, Champ.
Ilex viridis, Champ.
Indigofera venulosa, Champ.
Itea chinensis, Hook. and Arn.
Millettia Championi, Benth.
Ophiorhiza pumila, Champ.
Quercus fissa, Champ.
Rhus hypoleuca, Champ.
Rubus leucanthus, Hance.
Samara obovata, Benth.
Senecio Stauntoni, DC.
Stipellaria trewioides, Benth.

From the discovery of this large number of species of plants, which had hitherto been regarded as endemic in Hong Kong, we may suppose that most or all of our very rare plants, even Rhodoleia Championi, exist, probably in abundance, in some places on the adjacent continent.

The living plants introduced to cultivation by this expedition contain many things of very much interest, which will be valuable acquisitions to gardens. A very fine Cycas, which is probably new, but which cannot be positively ascertained until flowers and fruits can be obtained, is now well established in the Garden, and is an object of at least as much beauty as any of the other fine species in the Cycad collection. Two fine Chiritas are also doing well; one of them bears a beautiful white flower with a yellow throat, and the other a rich dark blue or purple flower. Begonia sikkimensis is remarkable amongst Begonias, from its deeply lobed leaves. A very fine Conifer—Podocarpus argotænia, Hance—with silver-white bands on the under-sides of the leaves, was also secured at the top of the mountains. Two new species of dwarf Ardisias of the A. primulæfolia type will also be attractive plants when producing their bright red berries. An ornamental leaved Zingiberaceous (?) plant, very much in appearance like a Maranta, will also be a serviceable addition to horticulture. A considerable stock of another plant of the same order as the last, and named Phrynium barbatum, was obtained. This should be a most useful plant for covering the ground under trees where the shade has become too dense for grass and many other plants to live. A suitable plant for this purpose has long been a desideratum.

A dwarf kind of Bamboo is frequent on the mountains, from which the natives make excellent brooms, which for many purposes are far superior to the split Bamboo brooms universally used in Hong Kong. I made arrangements with a priest to deliver a considerable number of plants of this Bamboo, besides several of other kinds, in Hong Kong during last February, but, I regret to say, the man has not kept his promise, although liberal prices were offered for the plants and his services. Clethra Fabrii, a shrub of great beauty when in flower, is well worth introducing, but no sufficiently small plants could be found to carry away, and the season was unfavourable for some cuttings which were tried. A most elegant leaved Pterolobium, bearing large racemes of gorgeous bright yellow flowers, was scrambling in the wildest luxuriance over bushes by the walk side. Neither seeds nor young plants of this could be procured, and, like Clethra Fabrii, cuttings would have been of no use. It is to be hoped that an opportunity may be afforded of introducing the above three plants, by a journey being made when seeds can be obtained of the two latter at least. There are many useful and interesting plants which I observed on the West River when there in May, 1882, which well deserve a second journey being undertaken, so that seeds might be obtained of them at the proper season. Botanical expeditions cannot be rendered complete unless the districts visited can be gone over at least more than once, so as to obtain plants in different stages of development in different seasons.

On the higher regions of the mountains a plant of great interest is found. This is a new species of Podophyllum,* a plant of the same genus as that from which podophyllin, the principle of the celebrated podophyllin pills, is obtained. The natives attach great medicinal value to the plant, and probably with more reason than the value which is often ascribed by them to innumerable plants which they so freely use for all manner of complaints. Podophyllum peltatum, the source of podophyllin, is an American plant, and it appears no species† of the genus had been found in Asia until, a few years ago, Mr. Watters, H.M. Consul at Tamsui, in Formosa, discovered one, which Dr. Hance named P. pleianthum. The Lo-fau species is the second Asiatic one. Both of them are in cultivation here now, two plants of the latter have just flowered for the first time in our Garden, where they have been growing for about two years. The larger one of the two has leaves 2 feet in diameter, and it is a striking and ornamental plant.

I noticed that nearly every garden contained a few specimens of the Chusan Palm, Chamærops Fortunei, which the natives cultivate for the purpose of supplying themselves with fibre, obtained from the sheaths of the leaves, to fabricate waterproof capes. Paulownia imperialis, with its very large leaves, was a conspicuous object in one locality, although it did not attain to more than about 15 feet in height. With the exception of some healthy young plantations of Cunninghamia sinensis, the Conifer which supplies China Fir for building purposes, I noticed scarcely any tree planting operations. This is different to the case in the West River districts, where the people devote considerable care to the rearing of Pinus sinensis. The neglect of tree planting in one place, and the fostering of it in the other, is probably accounted for by the facilities of getting the wood to market, which is afforded by the splendid West River in the latter case, while in the former there is no river nearer than 8 or 9 miles to the nearest part of the mountains.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF CLERODENDRONS: DWARF OR SHRUBBY VARIETIES.—The treatment of the dwarf varieties of the Clerodendron differs in many respects from that for the climbing varieties; but before giving that treatment in detail a general instruction should be given that it is of primary importance that the plants should be allowed plenty of room to grow in. This will greatly favour their growth into well-formed, bushy, and handsome plants; but if they are cramped during the growing period, ill-shaped and undesirable plants are likely to result.

1. *From Cuttings.*—Clerodendron fallax, C. fragrans, C. f. flore-pleno, C. infortunatum, C. viscosum, C. Kæmpferi, and C. Bethunianum, are good varieties to select for propagating purposes. The plants should be cut down to within 3 inches of the soil; the top part, with four leaves attached to it, should be cut for the first cutting, and the remainder of the plant can be cut up into pieces for cuttings; each cutting, however, should be about 1½ inch of the main stem, to which should be appended two leaves. These cuttings have what is termed double eyes, but it is usual to make single eye cuttings; therefore the former should be split down the centre of the main stem—thus making two cuttings of one, as it were—each piece having one leaf attached. The cuttings can be potted in "thumbs," but special care must be taken in potting the single-eye cuttings to see that the eye be put just below the surface of the soil. They should be pressed firmly into the pots, and the single-leaf cuttings should be tied to a stick in as upright a position as possible without breaking them. The soil used is that composed of half peat, quarter loam, and quarter silver-sand. This should be well mixed together, and sifted or rubbed through a ¼-inch sieve. After watering the cuttings place in the cutting-case or frame, upon a gentle bottom-heat. As soon as they have rooted they can be taken from the case and placed upon an open bottom-heat for a few days previous to potting them. Having potted them into large 60-sized pots, replace upon the bottom-heat until thoroughly rooted through, when the strongest

* Podophyllum versipelle, Hance. *Journal of Botany*, p. 362, 1883.
† P. Emodi, Wall, was overlooked when above was written.

plants can be potted into large 32's, and the others into large 48's. Each plant should be supported by a stick. After well watering the plants return them to their place upon the gentle bottom-heat, giving each plant plenty of room in which to develope. They should be well syringed twice a day, and ventilation should be well attended to. It is also necessary to turn the plants round occasionally, to make them of uniform growth and well shaped, and as they grow the tops must be pinched out about twice previous to the time of flowering. When flowers begin to appear the plants should be removed from the bottom-heat to a cooler part of the house, and they must no longer be syringed.

2. *From Roots.*—A selection of strong plants should be made which appear likely to produce strong roots. After shaking out the plants cut the requisite number of strong roots. The old plant can be potted up, watered, and after being placed upon a gentle bottom-heat, and rooted through, can be placed in a cooler part of the house. The roots can be cut up into pieces about 1½ inch long, which should be dibbled into a cutting-pot; the tops of the roots to be level with the surface of the soil, and the holes made by dibbling filled up with dry sand. Cutting-pots should be prepared beforehand, and the soil, which should be the same as used for the cuttings, should be well watered to make it firm. When the root-cuttings have grown 2 inches in height, after having been placed upon bottom-heat, each root-cutting should be potted into a thumb-pot. For a few days they must be replaced in the frame, but at the end of that time they should be removed to the open bottom-heat to prepare them for potting into large 60's. From this stage they can be treated in the same manner as the leaf-cuttings.

3. *From Seeds.*—The plants intended for seeding purposes should be set apart in a convenient part of the house, and out of the range of the syringe. As the flowers open they should be fertilised daily until a sufficient quantity is determined, or at least as many as the plant will bear. The ripe seed must be gathered, and cleaned from the husks or pods, and sown in well drained pans or pots; the seeds to be an inch apart, and covered with soil to the depth of half an inch. The soil used for the cuttings can be used for the seeds. It is necessary, after having watered them, to put them in a cutting-case upon a brisk bottom-heat. When the seedlings are 2 inches high they can be potted into thumb-pots, watered, and replaced within the frame for four or five days. At the end of that time remove them from the case, and put them upon an open bottom-heat. When they have well rooted they can be potted into large 60's. Put a stick to each plant, but tie them loosely, because, being rapid growing plants, they are often cut by the tightness of the matting. The plants potted in 48's and 32's, as well as those potted into 60's, should be again placed upon a gentle heat; plenty of room should be given them to grow in. They should also be well syringed, but as soon as the flowers appear this should be discontinued. At this time they should be removed to a cooler part of the house till they flower, and then be placed in the conservatory. *T. O.*

Orchid Notes and Gleanings.

Cymbidium eburneum.—Discovered by Griffith in the Khasia Mountains of East Bengal at an elevation of 5000—6000 feet, and described by Dr. Lindley from Loddiges' plants in 1847, this beautiful Orchid was very rare for many years, but of late it has been discovered in other localities and successfully imported in sufficient quantity to allow of its being obtained by all who are desirous of seeing its massive ivory-like flowers among the other beauties of their Orchid-houses. It is not all, however, who succeed in growing C. eburneum to perfection, for although when properly managed few plants are more easy to cultivate, the neglect of any important point in its management makes it very stubborn, and prevents all chance of its flowering. C. eburneum, coming from a high altitude, requires to be grown cooler than most Indian Orchids, particularly in summer, at which season it is best kept in a cool moist corner of an intermediate-house, or even in a sheltered part of the Odontoglossum-house, where no cold currents of air can reach it, provided it be returned to the intermediate-house before the cold weather sets in. So far as living through the winter in a cold temperature goes, C. eburneum will do in the Odontoglossum-house at a temperature of 50° to 55°, but so wintered it would not be likely to flower, and hence it should be removed to one in which the temperature ranges between 60° and 65° Fahr., in order to ensure a sturdy growth of good flowering capacity. Shade in summer is essential, and a liberal supply of water at the roots at all seasons necessary. The best material for potting C. eburneum in is turfy yellow loam in lumps two parts to one part of living sphagnum moss. There are several varieties of C. eburneum, one of them having dark yellow on the lip, and another having violet spots on it. Our illustration (fig. 17) gives a flower of a large form better in substance and in the clearness of the white of its blooms than in the ordinary type, and which, together with all the other varieties of the species, are well grown and bloomed by William Lee, Esq., Downside, Leatherhead.



Fig. 17.—Cymbidium eburneum: flowers ivory-white.

Orchids at Bocking Place, Braintree.—Having a great love for his plants, and a natural aptness in finding out their peculiarities, Mr. Sydney Courtauld bids fair to make the Bocking Place collection one of the leading Orchid strongholds. Commenced some years ago on a small scale, new plants were added from time to time, the experience here being the same as that gained in every new collection—pleasant and flattering success with some things, counterbalanced by signal failure with others. Invariably, however, with beginners in Orchid culture, the ease with which success in most cases is attained, and the beauty of the whole family endears them to their owner, and even the failures help to give an additional stimulus to the pursuit, by reason of the dislike which every one has to being beaten. So it has been with Mr. Courtauld; he has continued treatments which have brought success; tried new plans where failures have before been experienced, and gradually brought the whole under that systematic management which alone can give a good result. One of the most important steps was the building of new houses designed to keep each section separate, and to that end a new block has been added annually for several years. The new block just completed and filled is rather a novelty in Orchid-houses. The main portion is a lean-to facing north-east, and is devoted to cold-house plants. Its novel feature is that it is constructed with an extended roof which projects over the brick-work of the front, the wood and glass part of the front coming on to the wall, which is usually upright, coming down inward at a sharp angle to make good the front of the house between the roof and the brick-work. Thus the upper part of the house is larger than the brickwork and the staging, and it consequently allows of bushy-headed plants being placed as far back as possible on the front stage without their heads being too near the glass. Another advantage claimed for houses of this fashion is that they require no side shading, that coming from the overhanging roof being sufficient. This seems a real advantage, as it allows of full light from the front or sides without fear of sunburn. Inside, the houses are well arranged in the matters of staging, ventilation, &c. The walks are fitted with iron gratings, about 3 feet wide, under which shallow tanks are made the whole way to contain water to ensure the proper atmospheric moisture. The open ironwork floors are very comfortable to walk on, as, notwithstanding the presence of such a large surface of water below them they are not even wet. The building was done by Messrs. Wrinch & Sons, St. Lawrence Works, Ipswich. In this new house are some fine examples of Odontoglossum Alexandræ and O. Pescatorei in bloom, as also well-flowered plants of O. hastilabium, O. Uro-Skinneri, O. Reichenheimii, Oncidium concolor, O. crispum, O. sarcodes. Prominent among the many plants well grown under cold treatment here are Oncidium varicosum, Epidendrum vitellinum, and Nanodes Medusæ. Just now the Epidendrum is giving its bright orange-scarlet flowers in great profusion, and one specimen of the Nanodes, having about two dozen growths, and probably being the largest plant of it in the country, is well furnished with its strange fleshy dark crimson flowers. Cool shade and moisture are necessary to the successful culture of this plant, and given these it is easy to grow, but of course it takes time to form such a plant as that of Mr. Courtauld. Also in the new block, and leading to the cold house, are the Odontoglossum vexillarium-house, showy with their large sprays of large, clean-looking rosy flowers, and the Phalænopsis-house, in which some good P. grandiflora are blooming. The Masdevallia-house is well furnished with bloom, the many varieties of M. Harryana giving the chief display of colour. One of the plants in a 32-size pot has borne ninety-five fine large blooms, and needs no further excuse for its presence. M. rosea, too, is a very prolific bloomer, and M. Chelsoni, a very showy thing when seen in a good specimen. The Masdevallia collection here embraces all kinds, large or small flowering, the beauty of some of the curious kinds being marvellous when the specimens are large. Even the despised M. maculata, when well grown and profusely flowered, as at Bocking Place, is very attractive, and M. Reichenbachiana, M. peristeria, M. amabilis striata, M. gemmata, and M. tridactylites (the last-named having about thirty of its beetle-like flowers), things to ponder over. Well grown and bloomed, too, are some good varieties of M. ignea, M. chimæra (in baskets), M. Harryana sanguinea, M. macrura, &c., and overhead the twining spikes of Oncidium macranthum bearing many fine blooms. The Cattleya and Lælia-house shows, perhaps, a more marked improvement than any of the others, the attention of Mr. Alfred Wright,

a young and rising Orchid grower who tends the Orchids at Bocking Place, having made its effect visible on the plants under his care. The stout, healthy condition of the growths in all the sections leaves no doubt of the thriving condition of the plants and of their good prospect of giving plenty of bloom each in its season. The C. Mendeli and C. Mossiæ are just over, but the C. gigas are well in bloom, and so are the C. Gaskelliana, which seems to bloom all the year round. A good form of C. Gaskelliana, such as one of those now at Bocking Place, is one of the finest, sweetest, and most distinct Cattleyas grown, and a valuable introduction certainly. Some fine masses of Lælia purpurata, L. cinnabarina, L. majalis, Cattleya maxima, C. intermedia, &c., are also contributing their blooms in this house. The old cold-house is bright with Epidendrum vitellinum majus, Lycaste aromatica, Anguloa Clowesii, A. uniflora, Epidendrum syringothyrsum, Palumbina candida, Oncidiums, &c., and some fine pans of Pleiones show plainly by their plump bulbs that they like their cool moist quarters. In the various intermediate and hothouses are many interesting plants in bloom, such as Catasetums, Eulophia scripta, with its large-branched spike of flowers like small Oncidium sarcodes; some curious Promenæas, Restrepias, &c.; while among well known favourites are Cypripedium niveum (one with eighteen blooms), C. Parishii, Brassavola lineata, Dendrobium filiforme, Rodriguezia secunda, Dendrobium Dearei, Odontoglossum citrosmum, Cymbidium eburneum, Aërides crispum, A. virens, Dayanum, a fine form of Epidendrum nemorale major, and many other odd plants, all interesting and beautiful. It is reassuring to find that Mrs. Courtauld, too, is a lover of Orchids, and that the ladies of the house are forming a very clever collection of life-size water-colour drawings of each species as it flowers, the whole of the plant in bloom being faithfully given, together with analysis of the flower in some cases.

The Nepenthes-house is a good companion to the Orchid-houses, and that at Bocking Place is filled with a rich collection of well-grown plants, all well furnished with pitchers. The two varieties of that grandest of all Pitcher-plants, N. Mastersiana, each bearing many pitchers, some of them 14 inches in length, are very striking objects; the lighter-coloured variety has a brighter red tint, and the darker one is of a rich purplish-crimson. Near N. Mastersiana are its parents, N. sanguinea and N. distillatoria, the latter in flower. Also in flower is N. zeylanica rubra, a variety with pretty red pitchers, which is, perhaps, flowering for the first time, and will, no doubt, be useful in producing a new race, if others can be got to cross with it. The new N. Northiana, too, is bearing fine pitchers over 4 inches in length, and the quaint N. albo-marginata, both of the old and of the Sarawak, or more handsomely marked variety, are represented in good specimens. The favourite old kinds, N. Rafflesiana, N. Chelsoni, N. Hookerii, are very heavily pitchered, and the gigantic N. bicalcarata, the distinct N. madagascariensis, and the hard, spiky-looking N. Veitchii wonderful objects. Many Orchid growers take to the Nepenthes, the Nepenthes-house being very useful to grow a few special plants requiring much moisture in. Mr. Courtauld so uses his Nepthenes-house, and even the vineries and other plant-houses are made use of whenever a nook can be found in them likely to suit any of the fractious Orchids. In one of the vineries he is succeeding well with Vanda teres, V. Hookeriana, and Aërides cylindrica.

SOBRALIA XANTHOLEUCA. — We have been favoured by Mr. Geo. Palmer, gardener to T. N. Powell, Esq., Drinkstone Park, Bury St. Edmunds, with a couple of flowers of the rare Sobralia xantholeuca, a very distinct yellow-flowered species, which does not appear to have been described by the Professor of Orchidology, though it has been figured in *The Garden*, in the number for December 9, 1882, and is, we suspect, but little known among Orchid growers. Messrs. Veitch have it, and received a First-class Certificate for it from the Floral Committee on June 28, 1881; but we had not seen it since, until Mr. Palmer flowered the plant, which was bought for S. macrantha.

VANDA SANDERIANA.—The noble plant of Vanda Sanderiana in the nurseries of James Backhouse & Son, at York, is now showing fourteen flower-spikes! This unrivalled specimen forms a compact luxuriant mass about 18 inches high, with eight stems, and eighty or ninety leaves, and promises shortly to afford such "a sight" as the "Orchid world" has never yet seen.

Florists' Flowers.

THE AURICULA.—The seeds are now ripe or ripening, and it is necessary to watch them daily in case some of it might drop on the ground and be lost. Sometimes the pods burst, at other times they ripen and do not do so. It is time to gather the pods when the stems turn yellow. I now save the seeds until the first week in February, when they are sown. Other good growers sow the seeds as soon as it is gathered. I have done so and find it answers well, but as the largest portion of the seeds lie on the ground until the spring, it is less trouble to sow it then, when the whole of the seeds will vegetate together. I have tried them in hotbeds, and also in cold frames, or in the greenhouse; and have found that a shelf near the glass in a greenhouse is the best place for them. The soil in the pots containing the seeds should just be kept moist; if it should get dusty dry during the process of vegetation of the seeds many of them would perish.

The last year's seedlings, or rather the produce of the seeds sown this year, are being potted on as they require it. We have now finished repotting the whole stock of named varieties, they would have been done earlier but for the pressure of other work. The alpine section are not yet repotted; if this is done before the middle of August it will be time enough. Greenfly has been more injurious to the plants than usual; but with dipping in soapy water, dusting with tobacco-powder, and sometimes fumigating, we have them now very clean.

THE CARNATION AND PICOTEE.—The seedling plants raised from seeds sown early in April were pricked out into pans and boxes some time ago; they are now ready to be planted out in the open ground. Good deep moderately clayey soil well enriched with stable manure is the most suitable for them. Plant 1 foot apart in the rows and 18 inches between the rows. They require no other attention for the rest of the season but to be kept free from weeds. Those who grow plants to exhibit cut blooms from would act wisely to have a number of plants in pots, and the plants can then be taken into a house if there are thrips upon them, as this pest cannot be dislodged more effectually than by fumigating them with tobacco smoke. Our plants have been badly attacked this year both by aphis and thrips. The thrips do no damage until the flower-buds are large enough for them to get inside the unopened calyx. They seem to find their way inside before any trace of colour in the flower-buds can be seen; their effect on the flowers is to take the colour out of them, causing the rich self coloured varieties to appear blotched and spotted. Pay attention to the culture of the perpetual flowering varieties; they should be grown healthily and sturdily out-of-doors, and not be allowed to flower until the autumn and winter, when the Cloves, Fancies, Bizarres, and Flakes are over.

THE PINK.—Whether a flower may be said to be popular or unpopular, its beauty is not altered thereby, its sweet perfume is the same. The Pink is not grown as an exhibition flower to anything like the extent it used to be; but this is no great calamity, because, as a border flower of the hardiest character few flowers are superior to it. The laced named varieties are by far the best, but few people give them the right treatment to obtain the best results. The cuttings or "pipings" as they are termed, should be put in early in July. If they can be taken off in dull rainy weather, they may be dibbled out-of-doors in a shady place, where they require no other attention but to be sprinkled with water when they get dry. Failing suitable weather they may be propagated in hand-lights or garden frames, where it is very easy to prevent their being injured by the sun: the glass can be covered with a shade during sunshine, and daily sprinkling with water will give all the moisture required. When they are well rooted they should be planted out in the open ground, as coddling them under glass attenuates and weakens the plants. They should be planted out where they are to bloom about the last week in September or first in October. The plants will flower in almost any kind of soil, but they do best when it is deep, rich and open. The plants of the forcing section are now of large size; they also do best planted in the open ground about a foot apart, from whence they can be lifted and potted some time in September.

Some of the forcing kinds flower a week or two later than others, which is an advantage. Lord Lyons, for instance, is two weeks later than Mrs. Moore, and I have great faith in the bright rose-coloured self Pink which is in the hands of Messrs. Veitch, of Chelsea, and has been named Rose Perfection. It is also to be included amongst the late-flowering kinds. This is a break in the right direction, as at present there are no selfs in Pinks except the white ones, yet there is no reason why we should not have many coloured self forms in Pinks as well as in Carnation. *J. Douglas.*

Notices of Books.

Hints on Gardening in India.

We are so frequently asked for a book on Indian gardening that we gladly direct attention to Mr. G. Marshall Woodrow's little treatise under the above title. It has reached its third edition, which is a sufficient proof that it is appreciated. It makes no pretensions to be a scientific treatise, but gives just the sort of information on practical matters that is wanted by amateurs, treating of soil, manures, watering, propagation, and other garden operations, with notes on the principal garden plants in general cultivation, and monthly Calendars of operations suitable for Western India, Madras, Mysore, and Guzerat. In another edition similar Calendars might profitably be inserted for other districts, such as Sikkim, Simla, Assam, Birma, the Neilgherries, and Southern India. A slight sketch of the meteorology of India in relation to the cultural operations based upon it, would also be serviceable. We notice that Mr. Cameron, in the particular portion of the Calendar for Mysore, does give the information required, and we trust that others may in future follow his example. In any case Mr. Woodrow's book is well calculated to fulfil the aim he has in view, and therefore criticism on points of detail is unimportant.

—— *The History of a Lump of Iron.* By Alexander Watt. (A. Johnston.) — A brief treatise on the history, origin, and manufacture of iron and of substances derived from it. For those who desire to obtain a great deal of information in a small compass we may recommend this unpretending little treatise.

Fruits Under Glass.

MELONS.—The season so far has been more propitious than several of its predecessors for the production of good Melons, the "above average" amount of sunshine having not only been beneficial to the plants and fruits in every degree of advancement, but has also been instrumental in diminishing the liability of canker—a destructive disease to which plants are very susceptible during cold sunless seasons, even when precautionary measures are taken to prevent it. Plants ripening off their crops should still have the treatment essential to insure high flavour, for although so much care in attending to every detail of management is not absolutely necessary in order to obtain this desirable quality at this time of the year as it is at the beginning or end of the season, when the weather is invariably fickle, yet a haphazard mode of treatment would surely occasion disappointment and perplexity. Such plants as are commencing to swell their fruits should have their ridges of soil replenished with layers of heavy turfy loam firmly rammed, have their secondary lateral growths timely removed, and be supported with tepid liquid in accordance with their vigour and the weight of their crops. A night temperature of 70° should be preserved if possible by early closing, but if not sufficient hot water to maintain it should be caused to circulate through the pipes. Later batches should have their main shoots carefully trained to the trellis as they elongate; this is important, for if the shoots are neglected and allowed to hang down, their points become curved and set, and, being brittle, are easily broken when rectification is attempted. Let the laterals be likewise tied-in and stopped at one or two joints beyond the female blossom-buds, and make fruitfulness certain by attending to artificial fertilisation. Circumstances must regulate the date when the last

sowing should be made; in light well heated structures having a southern aspect fruits of good quality may be matured in November, and they are a valuable addition to the dessert at that season where variety is appreciated. Under the most favourable conditions, when the days are longest, it is a good achievement to ripen fruits within three months from the date of sowing the seeds, consequently a considerably longer time must be afforded very late crops. Although most cultivators have their own favourite varieties for late use we may mention Read's Scarlet-flesh and Blenheim Orange as invaluable for that purpose, but as they are almost identical it is needless to grow both.

Peaches and Nectarines.—Continue to keep the early house perfectly cool, and the roots of the trees properly supplied with moisture. In some gardens the opinion still prevails that it is right to withhold water, or at least to use it in a limited way, whilst the wood is maturing, in order to have it in perfection; a greater error could scarcely be committed at a time when the fruit-buds are forming. Should any of the trees have become unfruitfully robust from the roots having penetrated deeply into the border preparations should be made for lifting the same near to the surface by sufficient sound calcareous loam being placed under cover in readiness for the operation, which should be carried out just before the leaves fall, when the opportunity of renewing the borders entirely, if necessary, as well as rectifying imperfect drainage, should not be allowed to escape notice. There need not be the slightest apprehension of losing a crop from this course of treatment if it is carefully and expeditiously performed. As individual trees in successional-houses are cleared of their crops they should be thoroughly cleared of insects, and otherwise be treated as previously advised for the first house; the importance of removing useless and cumbrous wood should on no account be lost sight of. The syringing of trees upon which the fruit is approaching maturity should be discontinued as the fruits commence to soften, and a drier atmosphere, with a liberal circulation of air, be maintained to enhance the flavour. The borders should be kept moderately moist during the gathering season, for an extreme of moisture or drought at the roots would deteriorate the flavour, and the former sometimes cause the stones to split—an unfortunate occurrence, which detracts materially from the quality of the fruit. The trees in late houses should be systematically gone over, have their young growths tied in regularly, but crowding—an evil which prevents perfect maturation—should be studiously avoided, while luxuriant shoots should be either stopped or entirely removed, as is found desirable for the good of each individual tree. Where the object is to have fruits as late as possible in the season the ventilators should be left wide open continually; on the other hand, if they are required at an early date, the houses should be closed early with a temperature of about 85°, and fire-heat may be found necessary in low cold situations to expel superfluous moisture.

Vines.—The wood of Vines in the early house should now be getting matured, and be of a bright brown colour, with prominent buds at the base of the laterals. In cases where these conditions are unsatisfactory, additional warmth should be upheld through the day, with a circulation of air by day and night. Still guard against the borders becoming dry, as well as the foliage being impaired by insects. Where lifting the roots is anticipated the necessary amount of strong turfy soil, old mortar rubble, and crushed bones should be got ready to hand. The most opportune time for doing this is when the foliage commences to mature and change colour so that the roots may grasp the fresh soil before the leaves fall, and be thus in perfect readiness to enact their functions when the Vines are started into growth. It would be discreeet in treating Vines having the run of both inside and outside borders to disturb one border only in a season. The variable weather we are experiencing at the present time, which necessitates unremitted attention in ventilating and adjusting the valves of the heating apparatus, is unfavourable to Muscats advancing to ripeness: what suits them best at this stage is a high day temperature derived from solar heat, combined with a warm flow of air and moderate atmospheric moisture, with the ventilation so conducted that this at no time condenses on the berries, and sufficient fire-heat made use of to prevent the night temperature falling below 70°. Once the crops in the late houses are safely through the scalding period, they should be pushed forward until they commence colouring, by closing the structures with a temperature of 90° where it can be derived from the sun's influence, at the same time use the syringe freely upon all available surfaces of borders, pathways, and walls, to promote moisture, which keep charged with ammonia by replenishing the mulchings with fresh horse-droppings, or sprinklings of guano, and where the rainfall is heavy enough to cause artificial waterings of external borders with liquid-manure to be unnecessary, dress their surfaces if the Vines need assistance with soot and Peruvian guano, in quantities sufficiently plentiful to reach their roots when rain falls. *Thos. Coomber, The Hendre Gardens, Monmouth.*

Plants and their Culture.

Greenhouse Flowering Plants.—Many of the Cape and New Holland section of these will now have passed their best in respect to their floral beauty for this season. Even Erica Cavendishiana, E. depressa and E. affinis will ere this begin to fade, and a portion at least of their flowers should be removed and the remaining part in a week or two. All the other Ericas, too, that are faded should have the same attention paid to them at once; it will prevent the possible chance of any that are disposed to perfect their seed-pods from thus weakening the plant, which is not desirable after the extra strain of bringing the flowers to perfection. This operation should be performed with great care, especially in the case of such varieties as the forms of E. tricolor, E. obbata, and similar-habited kinds. If not carefully done the young growths clustering around the flower truss may be easily injured or broken out. Each shoot should be held in one hand whilst with the other the faded flowers are taken off close home to the growth in order that the plants may present a clean appearance. Some Ericas will continue flowering for weeks, sending up occasional flower-trusses, sufficient to keep the plant fairly gay with bloom. E. profusa, E. Fairreana, E. Exquisite, E. Massoni major, and some of the varieties of E. tricolor are much disposed to do this. These should therefore have their flowers removed as they fade, but take the precaution of not allowing any shading to unduly draw up any young growth that is being made at the same time.

A minimum amount of shading at the most is quite sufficient for Ericas, and that even is not recommended except during the height of an abundant flowering period. The more compact and sturdy the young growths are kept, the better for another season's flowering. We have noticed, in the case of E. Cavendishiana in particular, that young growths made when the plant is shaded are liable at this season of the year to be attacked with mildew. If not soon stopped by an application of sulphur this pest to plant life will seriously injure the tender shoots, thus preventing the possible chance of a fair crop of flowers another season. It is possible to flower this and similar kinds fairly well every season, not perhaps up to the standard seen at flower shows; these latter are generally accorded a season's rest alternately with one of extra floriferousness. But if no time is lost in removing the faded flowers, and then securing a good growth, to be followed by full exposure to the sun in one of the warmest quarters of the garden, there is no reason why a fairly good set should not be obtained. Such kinds as E. ventricosa and its varieties, E. Cavendishiana and other free growing sorts, may be moderately pruned when there are symptoms of too much sap being concentrated in the strongest shoots. E. cerinthoides coronata requires very careful training, and room should be allowed in the centre of the plant for the young growths to come away without any check. The future of the plant will be strengthened by the addition of these shoots, which this kind in particular is disposed to throw up. This Erica is well worth more extended cultivation than it now receives, its splendid trusses of deep red flowers render it a conspicuous object when in bloom, and this period is greatly lengthened in the case of a vigorous specimen by the numbers of trusses that are produced, and these, too, oftentimes in succession for two or three months.

All of the autumnal-flowering varieties will now be pushing up their flower trusses, such, for instance, as E. Austiniana, E. Marnockiana, E. Jacksoni, and other kinds; these should all receive full exposure to sun and air till they are well developed, thus to intensify the rich colours of each variety as much as possible. It will then be a safe plan either to house them or at least to have them within easy means of protection should the weather be rough and stormy; the former is, however, the better plan. The soft-wooded varieties of winter-flowering Ericas will need close attention for water if they are in good health and their pots full of roots. The proper treatment of these useful subjects will be amply repaid in the display produced during the dull season of the year. Keep them well exposed to light and air if possible, but above all guard against standing them in a moist damp spot that would be inducive to a second growth rather than to a development of flower-buds, besides running the risk of an attack of mildew.

Among the many Cape and New Holland plants some few kinds that have of late been gay with flower will now be faded. These should have their blooms and trusses (as the case may be) removed, and fresh growth encouraged as speedily as possible. In the case of Dracophyllums a pair of Vine scissors would be a good thing to use to sever the elongated stem of each flower-truss from the shoot near to where the young growths are being pushed forth. With the Aphelexis the best plan is to break out the flower-stem close home to where the first growth is being made. Some growers make it a practice to cut them out just below the stem of the flower, leaving a piece of wood in numbers of instances that will eventually die, as no young shoot that has not yet made its appearance will now do so. Pimeleas should also be picked over if not already done, and a moderate use of the pruning-knife may be made in cases where the plant is not so shapely as may be desired. Look out for red-spider, to which this genus is subject, especially P. spectabilis and P. Hendersoni. A syringing with a weak solution of soot-water will soon drive away this insect, and also add vigour to the plant itself. Darwinias (Hedaromas) generally retain their flowers for a lengthened period, but it is not advisable to allow them to remain any longer. The spikes of the Acrophyllum venosum should also be carefully removed, and the production of a young growth encouraged. During hot weather the three last-named subjects and any other closely resembling genus may be aided in this direction by gentle bedewings with the syringe, performing this operation in the latter part of the afternoon. The beautiful blue Melastomaceous plant, Pleroma elegans, will now, or within a few weeks, be showing for flower. If a good crop of bloom is the result, more water than usual will be beneficial during that period, still not applied with indiscretion. Any young stock of this plant that does not soon show their bloom-buds may not be expected in the usual way to do so; these should be kept pinched in order to keep the plant dwarf and stocky for another season. The greenhouse species of Statice will continue to do good service yet; the older spikes, however, ought to be cut out to give room for those not yet opened.

Any potting operations that need looking into should not be delayed. The sooner the delicate rooting subjects among all of these plants are laying hold of the new soil the better will each of them get through the coming winter. After repotting be careful to guard against excessive moisture at the root more than ever for a few weeks. In potting use the best peat only; that which is full of fibre and handles harsh and rough is far preferable to that which is soft and spongy. For these plants silver-sand of the best quality and some charcoal should be added, the latter, more particularly in the case of large specimens, or when the peat is of doubtful quality. An inch all round the old ball may be taken as a good addition of fresh soil to specimen plants; this must be thoroughly well rammed down into a compact solid mass, keeping the collar of the plant slightly elevated so that no water will congregate around it. Before being placed into the new pot see that the ball of the plant is well moistened throughout; no water will then be needed for a few days. If the pots of any specimen plants, whether fresh potted or not, are exposed too much to the sun's rays it will be better to hang an old piece of sacking against the pot on that side to prevent undue evaporation taking place. *James Hudson, Gunnersbury House Gardens, Acton, W., July 15.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 22	Royal Horticultural Society: Meeting (of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M.; Fruit and Vegetable Show; National Carnation and Picotee Society's Show.
WEDNESDAY,	July 23	Newcastle-upon-Tyne Horticultural Society's Show (three days). Feltham Horticultural Society's Show.
THURSDAY,	July 24	National Rose Society's Show, at Sheffield
FRIDAY,	July 25	Sale of Imported Orchids, at Protheroe & Morris' Rooms.

A SUGGESTION thrown out in these columns in our last issue as to the desirability of holding a gardeners' CONFERENCE at CHISWICK during the coming autumn has elicited expressions of opinion from various quarters favourable and otherwise, which leads us to mention the subject again for the sake of obtaining further opinions. So far as we are concerned, we are not at all committed to any particular scheme. We suggested Grapes, because there is no subject which has greater interest for practical gardeners than this; but we would prefer at present, if the principle be accepted, to leave the actual subject to be determined upon hereafter by a committee appointed for the purpose. The matter suggested itself to us from the circumstance that little or nothing has been done for practical horticulture this season by the Royal Horticultural Society. We do not attach any blame to the Council for this, for under present circumstances the Society seems, so far as Kensington is concerned, to be tied hand and foot. If, as we hope may be the case, the constriction in some departments is compensated for by diminished expenditure and increased receipts, we may as well make the best of it, and look forward to that time, which surely cannot be far distant, when another turn of the wheel shall put the Society in the possession of proper offices, proper meeting rooms, a proper place for the LINDLEY Library (which has never been so housed as to be readily accessible), and a proper place for the display of those portraits of deceased worthies, purchased for the most part by the contributions of their fellows and admirers, and now the property of the Society or of the Trustees of the Library, but hidden away in some inaccessible corner.

The Council of the Society, we are sure, feel the anomaly of their present position, the cruel injustice done to the memory of those who have gone before, and the still greater hardship inflicted on their horticultural supporters. Conversant as they are with the circumstances of the case, the horticulturists will be slow to impute any blame to the Council for a state of things beyond their control, and for one which possibly, we hope probably, will have compensatory advantages.

As regards Chiswick, however, things are entirely different; the Society is still master there, and the interest and attachment felt for the old quarters, no less than the satisfaction felt with the manner in which, under adverse circumstances, that establishment is conducted, led us to make the suggestion to which allusion has been made. We all remember the extraordinary success of the Apple Congress last year, and the recollection of that success leads us to hope that a second effort in the same direction might be advantageous. To make it so, however, some different policy must be adopted than that which, so far, has prevented the publication of any official report of the results of that unprecedented meeting. The Society had, still has, an unrivalled opportunity, not only of doing good, but of asserting its position as the leading horticultural society, quite apart from its entanglements at Kensington. So far, it has failed to rise to the level of its opportunities. The same may be said of the report on the results of the phenomenal winters we lately passed through: the materials are to hand, but there is no encouragement to proceed with their revision, useful as the results would be. The Society, unfortunately, in these matters, plays the part of wet blanket only too well, and discourages those who long to see it take the position it ought to have among the leading societies of the world. Before us lie a series of questions on the effects of spring frost, the varieties of fruit and other trees most affected by it, and so forth, sent us by a leading German pathologist; but in the present state of the Society it is useless to look for help from it, albeit the German Government, and the German societies, warmly interest themselves in the matter.

It may be said that these antecedents give little hope for the success of a gardeners' conference this autumn, such as we advocate, and that we are showing reasons why such a gathering should not be attempted. But this objection has but little weight, when we remember the great success of the Apple Congress, and of the Daffodil Congress. The Society, as such, did little for either beyond lending its garden and its conservatory. Let it do as much for an autumn conference of gardeners, and let a committee of practical men manage the details, and the results would, we venture to think, not be doubtful. We append two letters which we have received—one concerning the suggestion we threw out, the other relating to the proposal to continue the committee meeting fortnightly throughout the year, instead of at monthly intervals during the winter, as at present:—

"This is an excellent suggestion, and should be taken up heartily by every one interested in the culture of Grapes. Why confine it to 'practical horticulturists.' A conference on this subject requires that practice and science should go hand-in-hand. The whole of the details of the exhibition and conference, in order to be successful, should be brought out some time previously; indeed, if it is to be held, as it ought to be, about the end of September, there is no time to lose. During the last fifteen or twenty years our knowledge of Grape culture has been greatly extended, and the quality of Grapes consequent on that knowledge has been greatly improved, and this has been brought about by exhibitions and conferences. For be it known that at every large exhibition there are conferences—informal doubtless, but the discussions are sometimes conducted with considerable warmth, especially when the judging of the fruit is taken up. It is a fact that all good gardeners seize hold of the golden opportunity which presents itself at all the large fruit exhibitions to learn from each other, and it would be difficult to find a body of men more willing to impart information to others than those educated gardeners who have grown grey in the service, and who have by indomitable perseverance risen to the highest position in their profession. If the conference is once determined upon the details can soon be elaborated. It would have to be left in the hands of a committee selected from gardeners near London, unless those at a considerable distance would be willing to attend. I for one (the Editor has my name) would be glad to do all in my power to help in the work, and hope that the suggestion thrown out may be speedily acted upon."

The second letter refers to a wider subject, and foreshadows a time when all the Horticultural Societies of Great Britain shall have a common meeting-place—a Horticultural Club—and an adequate library. The nucleus for all these, it may be added, already exists.

"Your editorial comment on Mr. CRAWSHAY'S note is a very reasonable one, but the question raised is a very important one, and the fact of its having been raised induces me to put a more general inquiry to your readers. The giving a certificate is an important matter, and entails, as you justly observe, a great deal of trouble and expense; but there are many, however, who like to show flowers without any ambition to gain certificates, but simply because they think the sight of the flowers will interest their brother gardeners, and they at the same time may gain perhaps some valuable information. These are frequently, especially in the winter months, in the same predicament as that brought forward by Mr. CRAWSHAY; the bloom they wish to show is over before the time of the next meeting of the Society. Now the question I wish to put to your readers in this. Supposing at some future happy time the Royal Horticultural Society were so housed that the Fellows might meet together whenever they pleased without difficulty, and the LINDLEY Library were adequately available for reference and consultation—supposing this, would it be worth while to make arrangements so that on some day of the weeks in which there were no committee meetings (say on the Tuesdays) a sort of informal gathering might be held? If it were understood that any one bringing or sending up a flower, on Tuesday, for example, to the Society's rooms, might depend on its meeting with some sympathetic eye, and that any one dropping in on that day (between certain hours, for instance) would probably find something to see, and probably also some congenial soul to talk to, would such a plan of a sort of weekly 'house of call' for those who love gardening and flowers be, in the opinion of your readers, likely to bring benefits commensurable with the relatively small amount of trouble which the necessary arrangements would entail? Such informal gatherings would, of course, be useless for certificates, but, on the other hand, they would not interfere with the formal committee meetings."

—— A LILY BED.—We must at once tell the reader that this is an ideal bed, planted, tilled, and dressed in the imagination of the artist. The illustration (fig. 18), as any Lily grower will at once see, is intended, not for an actual picture of any particular bed, but as an illustration of the kind of effect that may be produced by the grouping together of various forms. From an artist's point of view, if there should be any anachronism in the matter, why so much the worse for the Lilies; if the gardener cannot ensure that all the species shall be flowering at the same time in the open air, so much the worse for the gardener. At any rate, the artist has here given us representations of the stately Lilium giganteum in the background, with the scarcely less imposing cordifolium. Then come Washingtonianum, to the left, japonicum, auratum, testaceum, philippinense, Wallichianum, polyphyllum, nilgerrense, Catesbæi, parvum, album, longiflorum, Humboldti, Parkmanni, dalmaticum, chalcedonicum, oxypetalum, elegans, davuricum, nepalense, Davidii, and pomponium. We do not think even the Wisley Woods could produce such a show. Happy artist!

—— EUCALYPTOGRAPHIA.—The ninth decade of Baron VON MUELLER'S valuable treatise is before us, devoted to the illustration and description of some ten additional species, together with a series of illustrations of the seedling plants. Of the importance of this publication we have already spoken. Under the head of Eucalyptus salubris, a West Australian species, occasion is taken to mention the medicinal properties of the oil derived from E. globulus, and especially from E. amygdalina. Eucalyptus oil is antiseptic, preventing putrid decomposition of albumen in the same way as quinine. One-half per cent. of oil in water is asserted to preserve raw meat from decay, and 1½ part of oil in 1000 of fluid are stated to prevent the development of bacteria.

—— HYBRID HIBISCUS.—In the last report of the Jamaica Botanic Garden it is stated that a cross has been obtained between Hibiscus rosa sinensis, as the seed parent, and the curious East African H. schizopetalus, the petals of which, as the name implies, are deeply laciniated. The leaves and flowers are described as intermediate between those of the parents.

—— COLOUR-BLINDNESS.—Mr. CHAS. ROBERTS has published a second edition of his useful treatise, showing the method adopted of detecting various imperfections of vision, with indications of the best methods of remedying them. The test sheet of coloured wools is designed of course for the detection of the so-called colour-blindness, but may be applied also in the discrimination of the colours of flowers. It often happens that an observer can discriminate colours with much accuracy, but applies the wrong names to them, whence arises endless confusion and difference of opinion. The small treatise above referrred to is published by Messrs. CHURCHILL & Co.

—— CARNATIONS AND PICOTEES.—Mr. TURNER'S collection, numbering some 8000 plants, is, we hear, in fine form this season, and will be well worth seeing up to the end of the month.

—— BEGONIA BEDDOMEI.—A dwarf species from Assam, with a thick rootstock, from which the leaves proceed; these latter have long stalks, obliquely cordate, ovate acute, green above, with paler spots, and vinous-red on the under-surface. Flowers about 1 inch across, pale rose-coloured. Described and figured by Sir JOSEPH HOOKER in the July number of the *Botanical Magazine*, t. 6767.



FIG. 18.—"LILIES OF ALL KINDS." (SEE P. 80.)

—— Pines at Fourpence Each. — Gardeners may well hesitate to grow this fruit any longer when Pines can be sold by the barrow-load at the above price! It is a fact that large numbers were being sold in the streets, a few days since, at that price. True, the specimens were not first-class, and they were more or less bruised, but for a shilling really handsome well-flavoured fruit might be bought.

—— The Bacillus of Phthisis. — Following the lines of Dr. Koch, Dr. C. T. Williams has been experimenting with these minute organisms by cultivating them under various conditions. It appears that strong acids have little effect upon them, that they multiply in such nitrogenous media as beef-tea, but not in distilled water, while iodine, and especially quinine, appears to entirely arrest its growth, and destroy its powers of multiplication.

—— Flowers and the Post-Office.—A correspondent complains of the way in which his packages are maltreated by the Post-office officials. Of course we do not question the validity of our correspondent's complaint, but, in justice to the Post-office, we may say that we receive every week a large —sometimes a very large—number of parcels through the post. Of these a considerable proportion is undoubtedly smashed, but that result is to be attributed chiefly to the carelessness or haste of the senders. When damp flowers are sent in thin cardboard boxes, with the address and the stamps placed on the box itself, instead of on a separate label (and this is the most common case), it is no wonder that disaster occurs. Another practice, against which we have protested many a time and oft, but without much avail, is the packing of flowers in cotton-wool. This causes as much loss of time and general inconvenience as that other *impedimentum*, the practice of confounding the functions of Editor and Publisher by addressing communications intended for the one official to the other. The editorial and the commercial departments of this journal, as of most others, are perfectly distinct.

—— Hardy Herbaceous Plants.—Those who have even a limited acquaintance with hardy herbaceous plants do not require to be told of the beauty of individual kinds, or about their collective decorative value in a garden. But those who need any reminder in the matter would scarcely fail in getting it by a sight of the display of hardy flowers by Mr. Ware, of Tottenham, that has now for some time been going on in the Conservatory of the Royal Horticultural Society at South Kensington. If a silent, they are a crushing comment on the poverty in the garden which the bedding fashion, where it alone exists, has brought about.

—— Victoria regia.—That the annual flowering of this handsome queen of all Water Lilies creates an unusual amount of interest there is no want of evidence on the part of the public, judging from the number of visitors that make a point of seeing it. When it flowered at Chatsworth for the first time in this country it is stated that the Duke of Devonshire chartered a special train to convey the flower to the Queen at Windsor. The plant at Kew has just opened its first flower this season, which is earlier than usual, and it will continue to produce flowers till late in the autumn. Unlike the closely allied Nymphæas, the flowers of the Victoria open in the afternoon, giving off at the same time a powerful but delicious odour that pervades the house. About 5 o'clock they are fully expanded, so that the public has ample opportunity of seeing them. The present plant, both flower and foliage, is the largest that has been grown at Kew for many years. There is absolutely no room for young leaves to expand without cutting away some of the older ones, several of them being over 2 yards in diameter.

—— Butterflies as Botanists.—Fritz Müller, writing in *Nature*, alludes to certain genera, in some respects intermediate between Solanaceæ and Scrophulariaceæ, and which have been placed now in the one, now in the other group, by different botanists. In the *Genera Plantarum* of Bentham and Hooker one of these genera, Brunfelsia, has finally been located among Solanaceæ, having previously generally been considered a member of the order Scrophulariaceæ. It appears that the caterpillars of some Lepidoptera had previously come to the same conclusion, as Brunfelsia is preyed upon only by Solanum-feeding insects. Fritz Müller mentions a still more singular case, in which two particular genera of Lepidoptera were at one time placed wide apart in the systematic arrangement of butterflies. It has, however, been ascertained that the caterpillars of these two genera are so nearly alike that the groups in question are now considered to be near instead of remote allies. The larvæ of the one group feed on species of Dalechampia, those of the other on Tragia. These two Euphorbiaceous genera were widely separated by Endlicher, and placed in different tribes, but Bentham places them both together in the same subtribe, and thus their close affinity, which had been duly appreciated by butterflies, has finally been recognised by botanists also.

—— Droseras and Dragon Flies. — According to a writer in *Nature*, the innocent-looking Sundews are more than a match for the ferocious dragon-flies. On one spot, about a foot square, six plants were found which had captured dragon-flies, Pyrrhosoma minium. The Drosera plants, being young, were less in expanse than the dragon-flies caught upon them, which measure about 2 inches across the wings, with a body about 1½ inch long.

—— International Exhibition of Horticulture at New Orleans. — The Board of Management of the World's Industrial and Cotton Centennial Exposition, to be held in New Orleans during the winter and spring of 1884—85, announce that they have organised a department of horticulture for the purpose of making the most comprehensive possible exhibition of the valuable fruits and plants of all nations. The management expect to secure an International Exhibition of Fruits and Plants, which will be of the greatest value to all of the vast interests connected with horticulture. To provide proper facilities for so important an exhibition they are now erecting a large and beautiful horticultural building, or conservatory, the walls and a large portion of the roof of which will be covered with glass and specially adapted to the exhibition of both fruits and plants. This building will be 600 feet in length, and with an average width of 114 feet. It will furnish table room for 25,000 plates of fruit, and 40,000 feet of space for the exhibition of plants. Apartments with suitable heating arrangements for the care of greenhouse and stove plants will be provided. Extensive space has also been assigned to this department in the beautiful grounds adjacent to the horticultural building for the planting of large exhibits of trees and plants. The Government of Mexico will fill 5 acres or more of this space, the States of Central America, the State of Florida, and it is to be hoped many other States and nations, will here occupy liberal grounds in the exhibition of their sylvan and floral wealth. Hon. P. J. Berckmans, of Augusta, Georgia, has lately paid a flying visit to Europe to induce European horticulturists to take part in what no doubt will be a most important exhibition. Handsome prizes for Apples, &c., are offered to foreign exhibitors.

—— Caterpillars on the Oak.—One of our correspondents, travelling in the Ardennes lately, called attention in our columns to the leafless condition of the Oaks. This communication has elicited from a correspondent at Namur an interesting account of the ravages of the insect, and a copy of a recent number of *L'Agronome*, a journal published in that town, containing further details. The Oaks in certain districts are so despoiled of leaves that an appearance is produced as if a great fire had occurred. Last May those who had occasion to traverse the woods were attracted by a noise as of falling rain; on looking up caterpillars were observed feeding on the leaves, and the excrement of these creatures produced the sound in question. So numerous were the insects that the leaves were cleared off in a few days. Some of the caterpillars were suspended by a long thread of silk. The caterpillar is green, with small black hairy warts, which is hatched in April, rolls itself up in a leaf, and becomes a chrysalis at the end of May, when it has fed its fill, and finally about the middle of June it issues forth as a pretty green night-flying moth, called by entomologists Tortrix viridana, the females of which deposit their eggs on the buds of the Oak, to repeat the cycle in the succeeding year. The mere removal of the leaves is in the long run not of much importance in the case of the Oak, in which fresh leaves are developed, but if the buds and young shoots get injured the case is different, and if the female flowers are destroyed the crop of acorns is, of course, ruined. Various birds prey on the caterpillars, and should therefore be encouraged, for if they do not entirely avert the mischief they very greatly attenuate it.

—— Spiræa palmata.—At Gunnersbury Park Mr. Roberts has hit upon a very successful expedient for growing and flowering this handsome Spiræa to perfection. At the head of the piece of water in front of and near the mansion there is a slight waterfall, with shrubs on either side, and at the margins, close to the water, can be seen tufts of S. palmata, blooming freely, and which are very attractive. This points to the fact that moisture at the roots—more moisture than is generally given to it—is needed to cause the plant to flower freely. It might be objected that the position in which the plant is placed at Gunnersbury Park is one calculated to expose it to the dangers of spring frosts, but the spot is sheltered by trees at the back, while the background of shrubs supplies some friendly protection also. It is a charming sight to look along the length of the water at the lower end, across a large surface of white Water Lilies in one part, and catch the rich rosy hue of the plumes of the Spiræa beyond. Close by, forming a part of the foreground, is a bed of varieties of Irish Heath, the charming evergreen plants when in full bloom being covered with copious bell-shaped flowers. And they flourish in the moist soil immediately contiguous to the water.

—— Gladiolus Colvillei albus. — Scarcely any other white early spring flowering plant is grown so largely for cutting from in early spring; the spikes of waxy white flowers are not only valuable for decorative purposes, but they can be used in various ways. Thousands of bulbs of this Gladiolus are imported annually, and as there appears to be an impression that they are useless after flowering, probably a great number are thrown away. It may be assumed that freshly imported bulbs are best for successful forcing, but if the pots of bulbs, as soon as they have done flowering, be planted out in the open ground in a prepared bed, it will be found that the majority of them will flower in the open ground the following season. But they should not be placed on one side and neglected even to the point of starvation before they are planted out. An experiment was made by planting a number of pots of bulbs out in this way; plenty of refuse soil from the potting-bench was dug into the ground, the plants were turned out of their pots, and only the crocks removed, then carefully planted, and the soil pressed firmly about them. For two or three days, the weather being warm and drying, they were watered overhead once a day, and then a mulching of cocoa fibre and spent Hops was applied to the depth of 2 inches. The foliage ripened off gradually, and this season a large quantity of fine flowers was taken from the bed. It is a plant that flowers early naturally, and those in the open air will nicely succeed those that are forced into bloom.

—— The Prospects of the Foreign Seed Crops.—While home-growers of seeds, owing to the drought, have been looking with a little apprehension as to its probable effects, in Holland, where garden seeds of many kinds are largely grown, the prospects are on the whole quite favourable. The crops of Cauliflowers look well, and a good yield is expected. Cabbages, Savoys, Kales, and Brussels Sprouts have passed through the winter in good condition, and as they have bloomed well good crops may be looked for. For some reason a much smaller area of Turnips than usual has been planted, and a less than average yield will result. Carrots look very well, so do all the varieties of Spinach. Peas, excepting some of the early varieties, are looking well; so are Radishes, excepting that vermin have settled upon some of the fields. Onions are by no means promising, the wet weather of last autumn, followed by a mild winter time, were greatly against the Onions that were kept over for planting keeping well; and after they were planted many rotted in the ground, and small crops of seed must result. On the other hand Leeks are full of promise; Celery and Parsnips are both good; Kidney and Runner Beans are likely to produce a good yield if favoured with warm and beneficial weather. A good crop of Broad and Long-pod Beans is anticipated; ridge and other Cucumbers look well, but require warm sunny weather. The recent rains have no doubt done much to improve the prospects of the seed crops in this country. For a time the effect of the drought—especially on dry early soils—was of a nature to cause alarm to pro-

ducers, but a change for the better is improving the character of the crops. Present indications appear calculated to lead to the inference that less than average crops will be secured. The Onion crop appears likely to be the greatest failure, many of the roots having rotted from causes similar to those which have operated to produce this result in Holland.

—— STRAWBERRIES.—It is a suggestive fact that even in a season when the Strawberry crop has been but a poor one, and by no means heavy, that good fruit should have obtained in the London market the most unremunerative prices. No wonder if, after all the cost incidental to culture, gathering, marketing, and punnets has been borne, only 2*s.* per dozen should be obtainable, that growers should, as is the case just now in the celebrated Botley Strawberry growing district, be turning their attention to jam making. On the other hand it remains to be seen how far preserves can offer even better prices than the open market now affords, and yet make the business of jam making profitable. It is true that the demand for fruit preserves has grown of late enormously, but still our present manufacturers seem to be equal to all emergencies, and are selling at what can hardly be other than barely remunerative prices, assuming of course, as we do, that the material of the preserves is *bonâ fide* what it is represented to be. Perhaps it is desirable to be initiated into the mysteries of jam making to be fully able to comprehend the present range of prices. It will be really no gain to the public that competition in this directiun should become so excessive that prices should fall ruinously low, for some businesses must in that case speedily come to grief. We are sometimes tempted to believe that the very low prices paid in the wholesale market to the grower by no means represent the price eventually paid by the consumer, but taking it as evidence of the abundance and cheapness of Strawberries prevalent all over the metropolis, we think when really superb fruit were being retailed in shops at 3*d.* per pound and on costermongers' barrows at 2½*d.*, it cannot be denied but that the public has every incentive to purchase. Our fear is rather that the urban populations do not consume anything like the quantity of good fruit they might with benefit do.

—— PLANTS OF THE PACIFIC COAST.—We learn from the *Botanical Gazette* that Mr. MEEHAN has published a catalogue, with notes, of the plants he collected in July, 1883, during an excursion along the Pacific coast in South-east Alaska. He enumerates about 260 species and the local notes with regard to occurrence, native names and uses, are very interesting.

—— WILD FLOWERS.—One of the most remarkable exhibits of wild flowers we have seen at any exhibition of a suburban kind was at the Ealing show the other day, when for some very acceptable money prizes, supplemented by a local confectioner of a large number of nice cakes, children attending the public elementary schools in the parish staged, in marvellous variety of utensil, over 300 bunches. It need hardly be said that the judging of this collection, kindly undertaken by some amateur and professional ladies, was a somewhat onerous task—perhaps the more so that in such a truly non-rural district wild flowers are not abundant, and special effects are hardly obtainable. Seeing the enormous competition, the ladies most kindly added a large number of sixpenny prizes, so that some eighty or more bunches received awards. A similar class for garden flowers brought over eighty bunches of varying degrees of merit. After duly admiring the industry displayed by these 300 children in seeking for and collecting their exhibits of wild flowers, and not less wondering where in such a house-ridden locality the flowers could be found, the question naturally arose, what good to the children will result beyond to them the securing of the various prizes? Unhappily the judging taught them nothing in matters of taste or arrangement, because bulk and variety of flowers governed the awards rather than did evidence of taste in putting the bunches together. Again, nothing beneficial of an educational kind resulted, because not one child, perchance, was botanically made one whit the wiser; nor can we say that the gathering from the hedgerows of such quantities of wild flowers indicates any special love for them. If children will not seek and gather them for the decoration of their own homes, their love for flowers is exceedingly questionable. Could not the prizes another year be given to the best botanically and commonly named and arranged of any twelve kinds, of which three might be grasses? Such conditions would check rampant hedgerow robbing, and help to promote technical knowledge.

—— PEACH BORDERS.—Surface sprinklings with the watering pot are admittedly deceptive, and to many things injurious in their effects. With most plants, the roots of which are at all in a position to help themselves to moisture, partial waterings are worse than none at all, and where of some use to the plants to which they are given are misleading as to the condition of the soil below the surface. This may be said of passing summer rains when not more than enough to moisten a few inches of the surface, and to few things in a garden is this condition worse in its effects than to Peaches. This fruit, more than most others we cultivate, delights in an abundance of moisture through the season of active growth, both overhead and to the roots. Want of water to the shoots and leaves favours the different insect pests to which the fruit is liable; and insufficient moisture at the roots not only inflicts injury on the current season's crop, reducing the weight of the fruit proportionate to the extent of the deficiency, but is often the cause of disease and premature death of the trees. Through the influence of the wind it usually happens that borders up to walls, such as where the roots of Peaches in gardens are generally located, do not get so much rain as falls in open exposed places, and though the top looks moist after showers such as the recent rains in many parts of the country have been confined to, it frequently happens that the soil below is much too dry to support growth to the extent required, in which state it may not unlikely remain until too late in the season to avail either the present crop or admit of the trees in autumn being in the condition they should be for another year. Whenever there are any doubts about the soil being moist enough to a depth sufficient for the roots to go, through the time the fruit is swelling, and up to the concluding stage of its ripening, it is well to examine the border and at once give water as required. To gardeners who have the misfortune to be situated where the supply of water is insufficient, and every pailful given to any one plant means so much shorter to all the rest, this advice savours something of what a lecture to the children of Israel when in PHARAOH'S clutches would have been about getting on with their brick burning when they had nothing to burn them with. But garden walls are costly appliances, and the trees on them are far from bearing every year; and in a season like this, when in most places the Peach crop is better than most others, it is well where possible to do all that the means at command will admit of. Unfortunately in many parts of England where the climate is the most favourable for the growth of Peaches the rainfall is the lightest, necessitating more water being given unless the trees are to go short.

—— WATERCRESS FOR THE LONDONERS.—There are few edible plants more universally liked than the insignificant looking water-plant, Nasturtium officinale. With rich and poor it alike finds favour. Many there are who can eat it without feeling the ill-effects experienced by some from partaking of other salad plants. In large towns it is a general favourite, and the quantities used are such as to puzzle any one to imagine where they are grown. London alone consumes an enormous quantity, which is grown in various places where there are streams of water that can be pressed into the service; for although Watercress will grow in any ordinary garden, especially on the north side of a wall, if the soil is kept sufficiently watered, still it is not so crisp and nice as when grown in its natural element—water. A good deal is produced in the neighbourhood of Rickmansworth, where the beds may be seen from the branch line that runs from the London and North-Western Railway at that town; some are grown at Waltham, notably in the shallow wide ditch that encloses a space in the locality of the old Abbey. Vast quantities are also grown on the long stretch of land through which a small stream winds its way by the side of the line running from Red Hill, through Dorking to Reading, for a distance of three or four miles between Gomshall station and Guildford; the beds supplied with water from this stream, covering many acres, may be seen from the railway, and we believe are all in the hands of the same grower. At the aforesaid Gomshall station all through the season one or more railway trucks may nearly always be seen for loading up with the hampers containing the Cress, several tons of which go to make up a load. In addition to the quantities from these beds that are sent to London, we understand trucks so loaded go to Brighton, Birmingham, Manchester and other places, a considerable staff of men and boys being employed in their cultivation and gathering for sale. As will be easily understood the condition of the Cress is much dependent on the description of the water in which it is grown, clean or foul, for although the tender qualities of many vegetables so desirable depend a good deal on their being well supplied with manure in some form or other, the nutritive elements from which are taken up by the roots, and go to build the substance of the plants, the tops or bottoms of which are to be eaten, yet it will be easily seen that Watercress, from being in a great measure immersed in the water that sustains it, is so far different to other things. We believe that the water in which is grown the Cress we have so far named is clean and unexceptionable in every way; but this does not apply to all the Cress that the inhabitants of London eat. In a place we could name, not 50 miles away, may be seen extensive beds of Watercresses growing in sewage-water that has had the solid matter taken out of it by a process it undergoes, but which leaves it when run into the long series of ditch-like beds wherein the Cress is growing, much in appearance like diluted pea-soup, smooth, greasy-looking stuff that one might think would answer the purpose of stilling the storm-tossed waters of the sea in place of the oil we hear of as being used for this purpose. Cut and bunched as the Cresses are from this foul water, the presence of which is easily detected by the nose for a considerable distance in the neighbourhood around, the foul matter cannot fail to dry on them; and even if the Cresses be washed in pure water as they are cut from the beds there are few, we think, who would like to eat them if they only knew from whence they came. This is a matter for consideration by the sanitary authorities, who have to trace out the sources of typhoid fever and cholera.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 14, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: —The weather, though fine and warm over the greater part of England at the opening of the period, has been cloudy and unsettled generally, with a good deal of rain, and in many places some sharp thunderstorms. The temperature has been a little below the mean in "England, S.W.," and "Ireland, S.," and about equal to it in "Ireland, N.," and the "Channel Islands," but in all other districts it has exceeded its normal value by 1° to 3°. The maxima, which were generally registered on the 8th, varied from 70° in "Scotland, N.," and "Ireland, S.," and 72° in the "Channel Islands," to between 83° and 85° over southern, central, and eastern England. The minima were recorded during the latter part of the period, and ranged from 43° in "England, S.W.," to 52° in "England, N.E.," and 53° in the "Channel Islands." The rainfall has been rather less than, or about equal to, the mean in "Scotland, N.," "England, E.," and "England, S.W.," but considerably more elsewhere. Bright sunshine has been less prevalent than during last week in "England, E.," "England, S.," and the "Channel Islands," but more so in all other districts. The percentages of possible duration varied from 25 in the "Channel Islands" to 46 in "Ireland, N." Depressions observed.—Pressure has been generally highest in the south and south-east parts of our area, while a series of depressions moving northwards outside our western and north-western coasts, and some local "thunderstorm" disturbances in different parts of England and Scotland, have caused frequent oscillations in the barometer over the United Kingdom. The wind, which has been moderate to fresh in force, has varied between S. and S.E. or E.

—— GARDENING APPOINTMENTS. — Mr. W. WAINWRIGHT, lately Foreman at Worksop Manor, as Gardener to Mrs. ELLEN WALKER, Blyth Hall, near Worksop.—Mr. JAMES MAYNE, lately Foreman at Broadlands, Romsey, as Gardener to Colonel CORYTON, Pentilli Castle, St. Mellion, Cornwall, in succession to Mr. EDWARDS, who is retiring.—Mr. G. H. SAGE, late Foreman at Lowther Castle, as Gardener to Earl DYSART, Buckminster Park, Grantham.

COLONIAL NOTES.

Cinchona Plantation in Sikkim.—In the plantations at Mungpoo and Sittong some 232,200 red bark trees were uprooted, and these were replaced chiefly by the yellow bark variety. The new plantation at Rungjung was also planted out with 42,200 trees of this variety. This reform has been introduced at the instance of the Home Government, the Secretary of State being desirous of extending the cultivation of the Calisaya Ledgeriana species, which is far richer in quinine than the red bark variety. The total number of yellow barks planted was 214,720, and these were either Ledgerianas from plantation seed, or Verdes and Moradas from South America. The total number of Cinchona trees of all sorts at the close of the year was 4,740,811, namely, red (Cinchona succirubra), 3,532,000; yellow (Calisaya Ledgeriana), 854,218; yellow (Calisaya, Verde, and Morada), 8500; hybrid unnamed variety, 320,500; and other kinds, 25,593. The total number planted in the preceding year was 4,711,168. The entire produce of the plantations for the year was 305,160 lb. of dry bark. Of this 283,240 lb. were of red, 14,320 lb. of Calisaya, 5490 lb. of hybrid, and 2110 lb. of Officinalis bark. Judging from the results of the experiments made for several years past to grow on the plantations the plants yielding the Carthagena bark, it is established, almost beyond doubt, that the plant is unsuited to the climate of Sikkim. The bark, however, is not so valuable as that of the Ledgeriana or the hybrid variety grown on the plantations. Reference was made to the Remija plant, which produces a quinine-yielding bark under the name of Cuprea, and it was stated that this bark formed a very large proportion of the quantity of quinine bark imported into Europe. Dr. King has hitherto succeeded in getting only two packets of this seed. The plant raised from one of these speedily died, while the seed contained in the second packet was only sown towards the end of the year, and the result is not yet known. The result of the year's working was a nett profit of 59,700·7·7 rupees, equal to a dividend of 5½ per cent. on the capital outlay. Dr. King points out that that this does not represent the whole of the actual gain for the year. The cost of the febrifuge used in substitution for quinine in Government hospitals and dispensaries during the year was 80,045 rupees, whereas an equal quantity of quinine would have cost three times as much. *Extract from Dr. King's "Annual Report,"* 1883—1884.

DISEASE OF CLOVER.

Peronospora sphæroides, *W. Sm.*

For several years we have been acquainted with a destructive fungus on Clovers, commonly growing in company with Peronospora trifoliorum, D.By. It appears to grow on most of the Leguminosæ, and is frequent on Lotus corniculatus, L. A species of Ovularia, a close ally of Peronospora, has been recorded as growing on Leguminosæ near Berlin, in 1869 and 1875, and Mr. W. B. Grove, B.A., publishes this species as British, with an illustration, in the *Journal of Botany* for July, p. 197, under the name of Ovularia sphæroidea, Sacc., pl. 246, f. 1.

In my work on the *Diseases of Field and Garden Plants* I have referred to this parasite, and given an illustration of a Peronospora, under the name of P. exigua, W. Sm., which I, at the time, took to be quite different from the Berlin plant. Since the book has been set up, however, I think the two plants may possibly be the same. I must say, however, that I have never seen this parasite agreeing either with the description or illustration of Ovularia sphæroidea, Sacc. I have never seen it as a single thread, supporting a single terminal spore. On the other hand, this plant usually bears a large number of spores, and generally with the conidiophores or spore-bearing stems once, twice, or three times branched. My plant is a true Peronospora, and cannot belong to either Ovularia or Ramularia, in which genera, if my plant is the same with Saccardo's, it has been alternately placed. Its characters best agree with Phytophthora, which, however, like Ovularia, is a bad genus. The simple thread supporting a single spore—the possible Ovularia condition of this fungus—can only be an ill-grown or depauperised state of the Peronospora.

In fig. 19 I have engraved several fragments of this parasite from drawings made after my original illustration was made. The largest figure shows the branching condition of the fungus, and the five smaller ones the simpler forms; one is growing on the tip of a leaf-hair. If I am correct in now supposing the plant and the Ovularia to be the same, the specific name exigua must lapse, and the plant be known as Peronospora sphæroides, W. Sm. The following is a description of the fungus:—Minute, conidiophores simple, or once, twice, or thrice branched, slender, sparingly septate, furnished with minute papillæ, which bear the conidia, the latter falling off as the threads extend in growth. Conidia oval, almost globose, minute, pale grey, non-papillate, furnished at the base with a very minute foot-stalk, and bursting at the side on germination. I have seen the very small oospores of this fungus, but my drawings have been mislaid. The original of the unpublished engraving is in the British Museum, and a large drawing of the fungus is in the laboratory of the Health Exhibition.

The fungus is not rare but common. As it very frequently grows on the same patches with P. trifoliorum, D.By., it is generally overlooked. I have seen it on many herbarium examples, both British and foreign, with P. trifoliorum, D.By. The Rev. J. E. Vize, in his *Fasciculus III.*, and in his microscopic slides, has sent out P. sphæroides, W. Sm., under the name of P. trifoliorum, D.By.; in fact, Mr. Vize has apparently never found the latter plant at all.

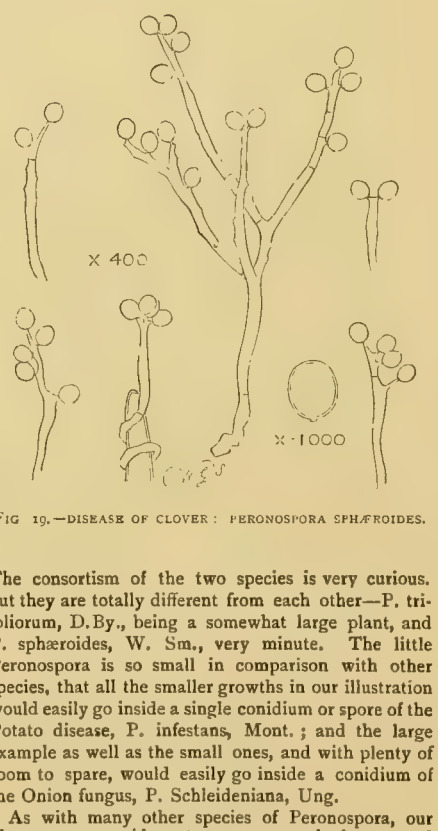


Fig 19.—Disease of clover: peronospora sphæroides.

The consortism of the two species is very curious, but they are totally different from each other—P. trifoliorum, D.By., being a somewhat large plant, and P. sphæroides, W. Sm., very minute. The little Peronospora is so small in comparison with other species, that all the smaller growths in our illustration would easily go inside a single conidium or spore of the Potato disease, P. infestans, Mont.; and the large example as well as the small ones, and with plenty of room to spare, would easily go inside a conidium of the Onion fungus, P. Schleideniana, Ung.

As with many other species of Peronospora, our plant causes putrid spots to occur on the leaves, and these spots at length drop out and fall to the ground; in this material the oospores rest and become mature. *W. G. Smith.*

Drymonia marmorata.—A superb Cyrtandraceous plant, probably of scandent habit, as most of the species climb on damp rocks and tree trunks by means of long aërial roots thrown out from the internodes of the stem. This habit renders them valuable for covering the walls of stoves. The stems are square, fleshy, the leaves about a foot long, about half that size in width, on long stalks, ovate acute, green, mottled with silver above, claret-red beneath. The flowers are in tufts in the axils of the leaves, on long stalks, rose-coloured, spotted with grey. Sepals more than 1 inch long, ovate acute, cordate, rose-purple. Corolla 1½ inch long, primrose-yellow, tubular, with a fine lobed limb, the lobes rounded, slightly unequal in size, and all toothed. The filaments are curiously twisted. The present plant is supposed to be a native of Guiana, and is described by Sir Joseph Hooker in the July number of the *Botanical Magazine*, t. 6763, from a plant in Mr. Bull's collection.

FRUIT NOTES.

Package of Apples.—The Committee of the New Orleans International Horticultural Exhibition make the following suggestions:—All Apples, Pears, and similar fruits intended for this exhibition should be gathered as soon as fully grown and fairly coloured, and while yet as firm as possible. They should be gathered with great care, and laid in cushioned baskets, with some soft bit of blanket between the layers. They should not be chafed or pressed in the least degree. Each specimen should be wrapped in three or four successive sheets of soft paper. Great care should be used to prevent the breakage of stems. All the specimens of a variety should then be placed in a tough paper sack, with sufficient packing about specimens to fill out the sack and prevent the possibility of bruising. Mark the sack plainly with the name of the variety in ink; then pack the sacks containing the varieties belonging to a given exhibit together in a box or barrel, which should be well ventilated. Keep the more perishable kinds together in the same package as far as possible. Then attach to both heads of the barrel, or both ends of the box and to the top, gummed labels, which will be furnished by the chief of this department upon application, and fill out the blanks thereon with the name and residence of the exhibitor, the kind of fruit and the number of varieties, and the names of varieties, so far as possible, contained in the package. The New Orleans Refrigeration Company have placed apartments at the command of this department, where an even temperature of about 35°, and a dry air, will hold fruit well without much change; but it will decay soon when taken out, and it is not desirable to place varieties which will keep well at home in this storage. The time for special displays of particular fruits, if any be decided upon, will be hereafter announced.

Large Peaches.—Yesterday (July 14) I pulled a very large Peach (I think Noblesse) which weighed exactly 12¼ oz., the circumference being 11¾ inches. As this is the heaviest I have ever weighed, I should be pleased to hear if any larger weights have been recorded. In 1879 I had two Peaches from the same tree, which weighed 9¼ and 9½ oz. respectively. *Geo. Sutherland, Gr. to Colonel Makins, M.P., Rotherfield Court, Henley-on-Thames.* [A 12 oz. Peach is a very respectable fruit, but the weight has been many times exceeded. Mr. Goodwin, of Maidstone, had in 1880 a fruit of Dr. Hogg which weighed 23¾ oz.; and in 1881 one of 18½ oz. Mr. Meehan, in the current number of the *Gardeners' Monthly*, records, from the *Florida Dispatch*, a Tinley Peach which weighed 20 oz. Ed.]

Nectarine Oldenburg.—Fruit medium size, globular, light rose, coloured on the sunny side, the shaded side being nearly white. It is highly spoken of by Mr. William Miller, of Combe Abbey. *Florist and Pomologist, July.*

KITOOL FIBRE.

The Palm, Caryota urens, Linn., is a native of Ceylon, Malabar, Bengal, Assam, and various parts of India. Amongst natives of Ceylon it is known as Kitool; in India it is called Bastard Sago, Coonda pauna (Tamil); Erimpana, or Schundra-pana (Mal.).

It is a beautiful and lofty Palm, with a trunk more than a foot in diameter, and 40 feet high. The large bipinnatisect leaves measure 18 feet to 20 feet in length, and 10 feet to 12 feet across. The fruit is of the size of a Plum, with a thin yellow rind, and is very burning and acrid in taste. From the flower-stem an enormous amount of sweet juice can be obtained; as much as 100 pints in twenty-four hours. From this juice Jaggery sugar, well known in our markets, is prepared, although it is not the only source, other Palm trees yielding it in commercial quantities. The caste who prepare this sugar in Ceylon are known as Jaggeros. The juice is also pleasant to drink when fresh, and an intoxicating spirit, known variously as toddy, arrack, pauna, or pawnee, is obtained by fermentation, and largely used.

The pith of the stem contains a large amount of farinaceous matter, equal to Sago in quality. The natives use this largely for food in the shape of gruel, or a kind of bread. Like its relative, the Cocoa-nut,

Kitool Palm is a source of food and profit to its owner. Elephants make of the leaves their favourite food, and the "heart," or expanded leaves, can be made into a capital Cabbage, or pickled, or candied. The woolly substance at the base of the leaves is used in caulking ships.

The fibres or veins of the leaves furnish the Kitool fibre, and it is largely used by the natives for the making of ropes, fishing-lines, bow-strings, brushes, brooms, baskets, caps, &c. Its great strength has earned for it the name of Elephant fibre, and ropes made of Kitool are used to tether and secure wild elephants.

The fibre has long been known in this country, and under the name of Indian gut has long been used for fishing-lines. When made into brushes it is found to be most durable, and some firms will not use brushes made of any other material. It seems to be the best substitute for bristles, as the fibre is strong, tough, and impervious to water. It is, however, rather brittle, and a sudden knock may break it. It can be woven together with cotton for petticoat stuffs, and forms a cheap and flexible fabric for dress-improvers, &c. Steamed and curled, it can be used for stuffing purposes in upholstery, and the refuse may be used instead of hair to mix with mortar for building purposes. When dipped in oil it turns from a dull brown to a beautiful black colour, and the oiliness may be removed. *Journal of the Society of Arts.*

CAROB BEANS.

The saccharine pods of the Ceratonia siliqua have become an article of considerable importance as a food for domestic cattle, and the export is now large from many of the Mediterranean countries. From Candia or Crete the shipments have been said to reach 180,000 tons annually, from Cyprus 10,000 tons are exported, and from the districts of Tarragona in Spain as much.

In several of the countries where the tree is largely grown, horses and stable cattle are almost exclusively fed upon the pods. About 6 lb. a day are given of the crushed pods, raw or boiled, with or without chaff. The meat of sheep and pigs is also greatly improved in flavour by this pod, the fattening properties being twice that of oil-cake; hence Carob beans form a chief ingredient in most of the artificially prepared cattle foods. They contain about 66 per cent. of sugar and gum. The tree is grown in Italy, Portugal, and Spain, the south of France, and most of the islands of the Mediterranean. It has been also carried to South America and India. The produce is annually increasing in Cyprus. The tree grows readily in most soils, and not requiring much moisture or care, its cultivation gives little trouble; however, although the tree grows and thrives without much moisture, the yield of fruit is affected during dry seasons, the quantity being less, and the quality inferior.

In Crete the trees in the eastern part of the island produce a much finer pod than elsewhere, which realise 1s. a cwt. more than those in the centre of the island. The produce always finds a ready market at Constantinople and the ports of the Black Sea. These pods, in some of the countries where it is abundant, are a great resource to the poorer classes, who eat them in large quantities, particularly in Lent. Containing a good proportion of sugar, they are very nourishing and satisfying when fresh, besides being cheap, and having the virtue of keeping well. As met with here, however, they are hard and leathery, and not very attractive.

As an economic plant already it is strange that no attempts have been made by improved culture to transform the pod into a savoury edible fruit.

In Portugal the pods are known under the name Algarobas, and in Austria as Johannes' Bread. It has the reputation of being the food on which St. John fed in the wilderness; but this is questionable, as it was most probably the insect locusts, which are parched and eaten to this day in parts of Africa. In Vienna Carob beans are sold at all the fruit stalls in the streets; and they are even sold in many sweet shops in London and elsewhere, being purchased by children. In Sicily a spirit and a syrup are made from the sweet pods; it has a flavour not disagreeable, and resembling in taste the fruit. Aromatised liqueurs have also been made from it. In Egypt a mucilaginous refreshing beverage is made from the pods, and they steep in it the fruits of the Balanites ægyptica.

HOME CORRESPONDENCE.

How to Measure the Heights of Trees.—It is notorious that optical instruments are generally sold at very far above their true value; whether the paucity of buyers raises the price or the high price limits the number of purchasers, I cannot say. Having taken to growing spars instead of rigging them, I have transferred my sextant to a younger relative, who I hope may maintain the honour of the family in Her Majesty's Navy. This, however, left me without the means of measuring the height of my trees, and as the advertised instruments cost far more than I am inclined to give, I set to work to manufacture one for myself. Having procured a pair of toy mirrors 1¾ inch square, I procured a piece of 1-inch board 2 inches by 4, having two of the corners rounded off as in the figure (fig. 20), and upon it with a fine saw I cut two grooves a quarter of an inch deep, so that if produced they would form an angle of 22½°. Into these I placed vertically the two mirrors, R and H, facing one another, and wedged them with thin strips of wood and Japan varnish. The silvering should be taken off half an inch of the upper part of the mirror H, to render it transparent. To use the instrument, fix a piece of white paper to the stem of the tree near the height of the eye at the point of observation; then at a short distance hold the reflector, R, nearly vertical, and with the eye at E, the top of the tree will be seen in H. Walk backwards or forwards until this reflection coincides with the white mark, and if the mirrors are set correctly the distance from the tree will be equal to the height above the mark. The probability is that an amateur will not hit the exact angle, and this must be tested by erecting two poles at, say, 100 feet apart, and walking from the left-hand pole at right angles to the line between them, and measuring the distance at which the poles coincide in the instrument. Then

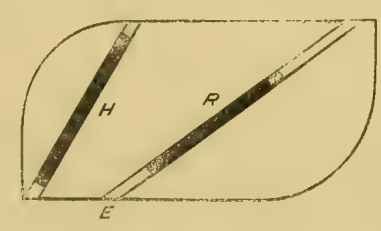


Fig. 20.—A simple tree measurer: scale half size.

divide the first distance by the second, and the result will be the ratio by which the base must be multiplied to give the height of the tree. In my own instrument this is .87, but a smaller angle would give a longer base, and therefore a more accurate result; indeed, with a round-headed tree the short base cannot be used correctly. The whole apparatus, after being Japan varnished, did not cost me a shilling. *H. K.*

Papaver umbrosum.—The figure of this on p. 49 offers an opportunity to say a few words about its cultivation, as it has been a speciality of the garden here ever since its introduction a few years ago by Mr. W. Thompson, of Ipswich. It is very much finer and more desirable as a spring-flowering plant than as a spring-sown annual. Poppy seed keeps badly, and if stored in drawers often fails altogether. The new seed should be sown now, either thinly broadcast where it is intended to flower, or in some open sunny piece of spare ground, from which it can be transplanted late in autumn. The young plants will not come up till September, and as their growth is not upright, but the seedlings lay their leaves horizontally on to the soil, each plant must have abundance of room—from a foot to 18 inches all round it—to itself. It will entirely fill this space, or more, before it flowers. The best plants are those which come up spontaneously near where the parents have grown; but as it is not always practicable to clear enough room for them they may be transplanted with a long trowel, taking up plenty of soil with each seedling to a depth of 9 inches. The conditions for successful growth are a rich moist soil, an open situation, and abundance of room. They may be moved at any time before Christmas, when the soil is not frozen, and will continue to grow all winter, being injured neither by cold nor wet. So treated they come into flower early in May, and continue to be a blaze of bright colour for more than a month. The seed of these plants is now ripe. P. umbrosum is not improved by being doubled, and the black mark on the petals is often changed for a smaller spot of dull white, greatly to the disadvantage of the flower. *C. Wolley Dod, Edge Hall, Malpas, Cheshire, July 12.*

Measuring Nepenthes.—Sir Trevor Lawrence mentioned to me the other day that the plan he adopts for ascertaining the size of the pitchers on his Nepenthes is to measure their capacity in fluid ounces. This method appears to me to be far more accurate than the usual one of measuring the length and girth in inches, as if carefully done it must give their exact relative size, whereas the measurement in inches may vary considerably, according to the ideas of the measurer as to which exact part of the pitcher should be taken. I append below the capacity of the pitchers of several varieties which are now in my collection, and I should be very glad if other growers would favour us with their results. I am unable to include N. sanguinea in the list, as I cut down my best plant last spring, and consequently the pitchers on the young growths are only of moderate size, the largest being 8½ inches in length and not yet open. I, and I believe many other growers, would also be pleased to hear whether any one has yet succeeded with those difficult subjects, N. Rajah and N. Northiana. I find the former impossible to please. Mr. Court told me he intended trying it in a cool-house, and as I learn from Mr. Veitch that in its native habitat the thermometer occasionally falls to the freezing point, such cool treatment would appear to be correct; but the plant I gradually removed from the Nepenthes-house to an intermediate Orchid-house suffered severely from the change. Nepenthes Northiana I find easy of culture, and apparently vigorous, but the pitchers do not increase much in size, and with me have never even approached the reported size. The following list gives the quantity of water in each pitcher when filled to the brim, and held in the position in which it will contain most:—

	oz.		oz.
N. Mastersiana ..	20½	N. Northiana	1¾
,, bicalcarata ..	14½	,, Stewartii	1¾
,, distillatoria ..	9¾	,, zeylanica rubra ..	1¾
,, Chelsoni	9	,, rubro-maculata ..	1¾
,, Hookeriana ..	8¾	,, Morganiæ	1½
,, Veitchii	6½	,, gracilis major ..	1¼
,, intermedia ..	5½	,, phyllamphora ..	1¼
,, Courtii	3	,, madagascarensis ..	1
,, Dominii	2½	,, albo-marginata ..	½
,, Hibberdi	2		

My other varieties have not at the present time any pitchers worth including, excepting a fine plant from Borneo, bought originally of Mr. Bull, and resembling N. Rafflesiana, but I think distinct from that species. It is a young plant, but has pitchers which will contain 5¾ oz. *S. Courtauld, Bocking Place, Braintree, July 16.*

Phlox Drummondi compacta is an annual eminently suited for pot culture as well as bedding-out. Being of much dwarfer habit than the original P. Drummondi, and having all the other good qualities of the latter, it is doubtless destined to supersede it in course of time. Any one fortunate enough to obtain seed from a good strain will have no hesitation in declaring it to be an annual worthy of being placed in the front rank. *H. J. H.*

Eremurus himalaicus.—This fine hardy Indian Asphodel, figured in your issue for July 9, 1881, on p. 49, has bloomed well in my garden this summer, and has now ripened a small quantity of good seed, some of which I shall be happy to send to any of your readers who cares to send me a stamped envelope addressed to themselves, to the address at foot hereof, as long as seed lasts. The woodcut above referred to makes the inflorescence far too dense and conical in shape, the flowers form a close column up the topmost 2 feet of a 4 feet stem, and in nowise assume the conical form as there pourtrayed. *W. E. Gumbleton, Belgrove, Queenstown, Ireland.* [The figure alluded to was a correct representation of the particular specimen. Ed.]

The Present Prospect of the Potato Crop in Ireland.—You will be proud to hear—and this is the crucial point—that from the 10th to the middle of July there has not been a whisper of blight from any quarter. For the past four years we had the early Potatos, especially the Flounders, in our large vegetable garden, badly diseased at this date. This year they are perfectly free from a trace of it, and this I attribute in a great degree to the long spell of dry, bright, tropical weather that came to an end a week ago. The welcome rain will be of little use to such early varieties as the Ashleaf Kidneys, Eight Weeks, Cosmopolitan, Fillbasket, Pride of the Market, Snowflake, Ashtop Fluke, First Crop, and a number of others I have been using for the past month, and that are of superb quality, though smaller than usual; at the same time it just comes at the right moment for those on the farm—Champion, Magnum Bonum, Schoolmaster, and Reading Hero. This last seems most promising here. *W. J. Murphy, Clonmel.*

Phlox Miss Harrison.—This herbaceous Phlox is deserving of the attention of all lovers of hardy border plants, as it possesses merit of more than ordinary degree. The plant is of vigorous habit, growing to a height under liberal treatment of from 2 to 3 feet,

producing handsome pyramidal spikes of flowers of pure white, which are of good size, form, and substance. Its flowers are of long duration, and extremely useful for cutting. *J. H.*

The Alexander Peach.—I send for your inspection a few Alexander Peaches, a variety I cannot too highly commend, especially for its earliness. I gathered my first fruit this year from it on July 6. The tree, which carries ten dozen fruits, is entirely out-of-doors, and has not even a coping over it, although we protect with cotton blinds during the spring months. Early Louise follows in succession, but it will be three weeks behind Alexander; and I think Early Beatrice, as far as I can judge now, will be next. Early Rivers is earlier than Beatrice, but useless, on account of the cracking of the stone. We shall have outdoor Peaches in unbroken succession from the first week in July to the last week in October. I see by referring to my diary of last year that I gathered my last Peaches (Salway) on October 13. I may add that the variety Dr. Hogg, in a heated house, is not yet ripe, which will convey some idea of the precocity of the Alexander. *J. Thirlby, Gr. to the Right Hon. Lord Mount Temple, Broadlands, Romsey.*

Begonia Wallensteini. — Amongst the ornamental leaved sections of Begonias there are probably none, from a decorative point of view, to equal the above. Well grown plants from 6-inch pots have a charming effect on a dinner-table when lighted up at night, the contrast between the leaves—which are of a dark green and deep chocolate in colour—and a white cloth being very fine. It delights in a stove temperature, and should be grown in a compost consisting of good turfy loam, peat, and silversand. *J. H. H.*

NOTES FROM NOTTINGHAM.

No stranger visiting Nottingham should omit seeing the Arboretum. The ground is so charmingly diversified—as much so, indeed, as that on which the town is built. The garden is, in fact, a dell, with moderately steep banks, artificially planned to an even surface, the dell sloping downwards to its lower outlet in one of the town streets. The turf, notwithstanding the dry weather, looks at its greenest, and shrub and tree, albeit mostly of ordinary sorts, have a healthy, thrifty look. Nottingham, although it is the headquarters of lace fabrication, and has other industries also on a large scale, is not a smoky town, and the breezes that waft away its smoke keep the air pure and healthful, and vegetable life has nothing inimical to contend with. The Arboretum is easily accessible, and provides a pleasant promenade for the aged and the very young. The walks are of asphalte, broad, and of easy gradients; shady walks and retreats abound, and there are flowers enough about to please all tastes. The shrubberies are mostly edged with some kind of flowering plants, as Antirrhinums, Canterbury Bells, Carnations, Sweet Williams, and Gaultheria shallon is used round others with good effect. The Bell Temple, with its grim-looking Russian cannon, and the Chinese bell hung in a small pagoda, was planted or was in course of planting with carpet bedding material generally. The spring bedders had lasted in beauty so long that the gardener, Mr. Locker, had been loth to sacrifice them in June, and thus the summer bedding was left till so late. Some of the carpet bed arrangements that were put in at an earlier date were looking very pretty, notably those at the bottom of the dell walk. Rocks are so common about Nottingham that it is but small matter of wonder to find them placed sometimes in apparently incongruous positions, and lumps of them in a neat smoothly kept carpet garden is one of them. There is this, however, that may be said for the stone—it is of a rich brown colour, and, being a porous sandstone, it either soon tones down in tint, or becomes kindly covered with minute growths, the Liverwort being the commonest of these in situations that are damp.

A piece of water with some rare water-fowl receives the drainage of walks and garden; near this pool are some capital examples of Alders and Willows. Alnus glutinosas and A. laciniata have attained a great size, and have begun to resemble the Oaks in their general aspect of bark and growth. The Germans call these trees "Wasser Eichen," Water Oaks. Coniferous trees grow fairly well, but the pride of the place will be in time the Limes and Elms and the other umbrageous trees, all of which are making great progress.

The Castle, after many years of neglect, has been substantially restored, and refitted externally and internally for the reception of pictures in oils and water-colours, of which there are many. An art collection also finds a home here, being affiliated with South Kensington Museum. The old ramparts of turf have been levelled, or in some other manner been made available for the gardener's art, but as in good taste no flowers find a place near the Castle itself—the windy, elevated, unsheltered site, and their unsuitability to such surroundings, forbid their use. Near the barbican, where we may suppose the warder might have had his patch of old-fashioned flowers in the olden time, the flower gardener of to-day lays out his little parterre of flowers and particoloured foliage. The whole place is in wonderfully good keeping, as are all the town recreation grounds that are under the management of Mr. Frettingham. This one is easily reached from one of the principal streets of the town, and one is soon amidst deep gorges, and rocky banks, and massive Cyclopæan walls, that retain the house gardens in this part.

The Cemetery, which adjoins the race-ground, is a most singular place for interments. Some portion of it, adjoining the road to Bullwell, has been some considerable time in use for burials, but the major portion is exceedingly rough, in fact, forest ground, with the trees cleared away. In this part the rock is close to the surface, and the paths and roads are nothing more than trenches hewn out of the solid sandstone, large caves are found that run underground great distances, and graves have to be cut out of the rock in most instances. Improvements are persistently being carried out, which will in the course of time make this one of the most singular and romantic looking places of burial in the country. There is a specimen of catacomb building, now nearing completion, which is nearly a complete circle of about 100 yards in diameter. This is approached at the bottom by a tunnel cut in the rock a long time since.

The Queen's Walk.—This is an avenue of Elms and some Limes, planted in four straight lines with an asphalted path of width sufficient for six persons to walk abreast, and two side paths of lesser width; turf divides these walks from each other, and the whole forms an agreeable shady promenade of about 800 yards in length, running from the busy part near the railway stations to the Trent Bridge. On the right hand side, going out of the town by this walk, is a piece of turf of about 5 acres, used as a playground for children, and further on, to the left hand, an extensive grass plot for cricket, &c., and permanent swings for children. In addition to the above-named recreation grounds is the Forest of Sherwood, a place open to all for promenading and amusement, and easily reached on foot or by tramcar. Some part of the race-course, which is almost in the town itself now, so much has the latter spread outwards, is also devoted to cricket and games generally.

Bestwood Park.—This residence of the Duke of St. Albans lies off the Mansfield Road some 4 miles out of Nottingham. The house is a modern building of brick, with stone quoins, &c., and a gabled roof. There is a pretty conservatory here with a winding path of tesselated work. In this are some fine specimens of Seaforthia elegans, one of them measuring about 25 feet in height; large Orange trees, Camellias, Phormium tenax, Cytisus racemosus, and creepers were planted out in the broad borders, and doubtless, when the house is furnished with the pot-grown specimens, as it is during the Duke's stay, the effect is particularly good. The flower garden is of limited dimensions, and consists of a small thickly tree-and-shrub planted space, surrounding two sides of the house. This garden is overlooked from three terraces and is gay with Roses, grown as dwarfs in masses. We thought the effect would have been greatly improved by taking away many trees in the foreground, that partly hide, and which would still more shut out as they get bigger, the near as well as the distant views. Fruit growing is a prime feature at Bestwood, and not only is there a great orchard, in which Apples are most abundant this season, but the walls generally are covered with healthy fruitful Plums and Pears, &c. The only fruits that do not succeed here are Peaches, Nectarines, and Apricots. These were once good on the open south wall, but have now almost died out, possibly from want of protection, or because the ground was depleted of the particular nutriment needed by them, and required an entire removal and replacement by virgin loam. In the houses the Peach and Nectarine were doing very well, many of the trees, both on back walls and front trellises, being well found and bearing fine fruit. The early vineries contain some well grown bunches of Hamburgh, excellently finished, many of them equalling 4 lb. in weight. The Muscat of Alexandria Grapes are very superior in quality, but were hardly ripe at the time of our visit. A vine of Trebbiano is carrying fifteen bunches, about 70 lb. of fruit altogether, and from this Vine last year a 15-lb. bunch was cut. Another house is filled chiefly with Lady Downe's Seedling, Mrs. Pince's Black Muscat — excellent bunches, that will last well into the winter season. A few Pines, Melons, and Cucumbers are grown, and the usual class of plants for furnishing table plants and cut blooms. Some wonderfully vigorous and clean specimens of Gardenia floribunda may be observed growing in a dwarf pit. They had yielded one good crop of bloom, and had set another equally abundant one. The plants are in pots, but the roots have been allowed to travel into the plunging material. The kitchen garden contains capital crops, despite the dry weather—Peas, Potatos, Cabbages, and Strawberries being as good as we have seen anywhere. The handsome pyramid fruit trees in this garden form quite a feature, and in several instances carry full crops. One of the south aspects of the garden wall is gay with Roses, in great variety; and in front of this a long ribbon border. The garden is under the able management of Mr. Edmunds.

Woodthorpe Grange, the residence of H. Ashwell, Esq., is a high-lying finely situated place near Nottingham, from which a beautiful landscape is seen stretching away in hill and vale right into Derbyshire. Here we saw in a sheltered corner some beautiful examples of Roses, growing as dwarfs chiefly, a few standards alone being seen, the place of these last being far better filled with the pyramid or pillar Roses. The Roses were blooming in great profusion, and many of them were of the highest quality; still Mr. Edington, the courteous head gardener, informed us that the pyramids were less full of flower than was the case last year. Here we saw the results of liberal and clever management of the Rose on a soil just adapted to its wants. The delicately perfumed Rosa rugosa, the purple-rose coloured variety, grew into a fine bush that had been loaded with bloom, as could be seen from the remaining seed-vessels. The immense rockery here is the main feature, and is really grand as a field for the alpine cultivator. It consists of two immense hollows that have formerly been excavations from which clay has been taken for brick-making. The bare rock was exposed by this work, and this has been still further deepened by several feet more being taken out. These great pits are on the side of a hill, one below the other, so that the getting rid of water is an easy affair. The lower point of the rockwork may be 60 feet from the highest point, that at which the waterfall is found. The quarried rock has been used to face in a natural manner the banks and hills of earth, and is rapidly becoming clothed with rock plants. Especially fine are the patches of Saxifrages, Sedums, Alyssums, Aubrietias, Thymus lanuginosus, the latter making great grey carpets of foliage. Many Campanulas are grown in flower, being the two dwarf varieties, C. pulla and C. p. alba, and the tall C. persicifolia. Many Ferns of a hardy character are grown on the more shady portions. This should in years to come, if the planting is persistently carried out, be one of the best bits of rock gardening in the Midlands. In the forcing houses we found plenty of nice fruit: the Noblesse and Grosse Mignonne Peaches were very large, the former being of a higher colour than is often seen. Grapes of all the kinds grown were, in all cases, of fine quality. One sort, the Shiraz, was carrying a heavy crop of large, broad-shouldered, tapering bunches. It is a pity there are no classes for Grapes other than black or white, or we should oftener see this fine Grape at exhibitions. The colour is that of the Grizzly Frontignac, but there any comparison of outward appearance ends. Mr. Edington has a fine lot of healthy Azalea indica, both as large and small plants, and grows capital Pines, Melons, and Cucumbers.

Malvern House. — This is another place of repute for its horticultural doings in the neighbourhood of Nottingham. It is the residence

of T. B. Cutts, Esq., a getleman engaged in commerce, who has become of late years an ardent patron of gardening in certain phases. Like Woodthorpe, from which it is not far removed, the site is quite precipitous. Here Mr. Cutts has placed his dwelling; close to the town, indeed in it, yet obtaining splendid views from the windows. Here were to be found the beginning of an Orchid collection that is about to be brought together, some good things being already under the charge of Mr. German, a gardener whose capability is certified by the prizes he managed to secure at the Nottingham show. At present the Orchids do not form a prominent feature, and so we will leave them, to look at the rockery. This is a very telling bit, of Mr. Pulham's creation, massive, natural, and quite suited by reason of its size to the small garden in which it stands, and of which it is one of the boundaries. It may be about 20 yards in length, and 10 yards in total width. The idea is that of a shallow cave, not deep enough to be damp, but warm and partially sunny; this is flanked by massive rock, and slightly masked by a large block directly in front. Water runs in front in an irregular channel. The rocks are many of them purposely made in hollow blocks of Pulhamite, so that by putting in sufficient drainage over the outlets at the bottom of them, and filling up with soil, plants can be got to grow in a way that is not usually met in these imitation rockworks. Ivies, Clematises, Rhodododendrons, especially R. hirsutum, Cotoneaster microphylla and C. rupestris, Ericas, and a few alpines constitute the chief occupants as yet. In the handsome conservatory, that is divided into a cool and warm portion, a pretty arbour of rockwork of stalactite imitation, which is lighted from above through a yellow glass medium, is observed in the right hand corner on entering. An aquarium in the Brighton style is being constructed under the warm conservatory division, to consist of several large brick tanks with glass front wall, and furnished with rockwork. The conservatory itself is usually well furnished with plants, but at the time we saw it it was almost denuded of plants, although the luxuriant creepers on the roof and walls, and a fine Seaforthia elegans on the floor, planted out, helped to prove how effective the thing would be in the finished state. In the Grape-houses we found good crops of Muscats nearly ripe, large in bunch and berry. A young Muscat-house, already planted three years, is bearing a few capital bunches, and making besides very strong wood. Black Hamburgh Grapes are likewise well done, as, indeed, they should be, as all are quite young. There are small plant-houses for warm and cool-house plants, forcing pits. Altogether this is a *bijou* establishment of a commercial gentleman not altogether so immersed in business that he cannot find the necessary time to cultivate the graceful art of horticulture. The land already under the gardener's care is of quite moderate extent, but is the acme of cleanliness, order, and neatness; some few more acres are about to be added to this, and in the end there will formed a most enjoyable secluded garden.

THE WEST INDIA FRUIT TRADE.

The abundance and cheapness of our British fruits, owing to the prolonged fine weather, give an interest to a consideration of the commerce in those tropical fruits which in the places of growth would be gladly exchanged for some of the more common European fruits, such as Apples and Pears, Strawberries, Raspberries, and Cherries. The supply of Oranges and Lemons has also been very abundant and cheap in our markets this year. A few statistics of the trade in tropical fruits of the West Indies, which is mainly carried on with North America, may prove of interest at the present time. New York and Boston are the chief centres for the sale of tropical fruits. The figures cited are chiefly those for 1882.

The trade in West Indian Oranges proved unsatisfactory and unprofitable, 23,000,000 were received from Jamaica out of a total of 31,000,000, and one-third of the quantity perished on the voyage. The other islands from which supplies of Oranges came were Cuba, Bahamas, Dominica, Trinidad, and Porto Rico. Florida is fast becoming a competitor in Oranges, having supplied 500,000 boxes and barrels, and in another decade it will be able to supply the whole United States with an abundance of fine Oranges.

The import of Pine-apples into New York was over 2,500,000, principally from the Bahamas and Jamaica, with a few from Cuba and Curaçoa. The average loss of the fruit on the voyage was 20 per cent. Nearly two million Pine-apples are annually canned or packed at the factories of one firm at Eleuthera and Harbour Island, about three-fourths of which find a market in New York, and the residue in Europe. The annual production of Pine-apples in the State of Florida is gradually on the increase, a quarter of a million of fine Pines of superior quality having been received in New York in 1882.

The Banana trade is an important one in the principal United States ports. It is the fruit of the Sweet Plantain (Musa sapientum). In California and Florida M. Cavendishii, a dwarf and more robust species, is chiefly grown, the yield of fruit being profuse (as much as 200 or 300 fruits in a spike), and the flavour excellent. The delicate fruit of the eastern species, M. simiarum, never reaches this country; they attain a length of 1 to 2 feet. The longer voyage from the West Indies or Madeira seldom allows Bananas to arrive in good condition in the London market, nor is this fruit so generally appreciated here as in America, where it is a common dessert fruit.

The importation of Bananas at New York was double that of 1881, but a striking offset was offered to this increase in the very notable decrease in Oranges, probably the most commonly used of all the imported fruits. Nearly 1,000,000 bunches of Bananas were received; of the above over 150,000 bunches perished on the voyage—a loss of 16 per cent. The imports are principally from Aspinwall and Jamaica. There are also direct imports at Boston of about 250,000 bunches. The price received in Jamaica is from £5 to £10 per 100 bunches, the former representing the lowest price given in dull seasons, and the latter the highest when fruit was most in demand.

All the Bananas imported into the United States come from the Isthmus of Panama and the West Indies. The different varieties are called Aspinwall, Baracoa, and Jamaica, after the places from which they are shipped. The Aspinwall Bananas are large and yellow, and termed silver-skinned. The Baracoa, so named from the port in Cuba at which they are shipped, are red-skinned. The Jamaica Bananas are yellow and smaller. The Aspinwall fruit is hardy, and can bear handling and heat or cold better than the other two kinds. The Baracoa fruit, which comes from the south-east end of Cuba, is by some people thought to be superior to the Aspinwall and Jamaica kinds, as it is more luscious. The wholesale price last year was 2*s*. 6*d*. to 2*s*. 9*d*. per bunch.

The Jamaica Bananas have improved in quality lately, and fetched 2*s*. 8*d*. to 4*s*. a bunch. Steamers have now been put on, which make the passage from Jamaica in eight and a half days against fifteen or twenty days by the ordinary sailing schooners. The loss on the voyage, which was formerly from 10 to 15 per cent., has been almost overcome, and better fruit is brought in as the steamer can take a cargo of nearly ripe fruit.

The Aspinwall Bananas come to market throughout the year. Those from Jamaica and Baracoa reach the American markets from March 1 to about August 15. In Jamaica when a sucker is planted it only comes up single and bears but one bunch of fruit, while in Aspinwall a sucker comes up with several shoots, and these bear in succession one after another. In Aspinwall also the fruit comes to maturity in half the time it does in Jamaica or Cuba. During the last six years the value of the annual exports of Bananas from Port Antonio, Jamaica, has more than doubled. In 1877 the value of those shipped was only £7747, in the two following years it averaged £18,000; last year it reached £40,000. Considerable quantities are also shipped from the ports of Lucia, Montego Bay, St. Ann's, Port Marie, and Kingston.

The Banana is an annual, the fruit coming to maturity about a year from the time that the shoot is planted, the stem of the plant then attaining a height of 8 or 10 feet and perhaps 36 inches in girth. There are a good many Plantain walks in the island varying in size from 25,000 to 200,000 trees, but they are for the most part cultivated by the small settlers in the different parishes, and prove a source of great profit to them. The method of cultivation is simple. The land is cleared by the aid of a primitive and ponderous hoe, a hole is dug in which is placed a "sucker," and Nature is left to do the rest. Unless the season be one of exceeding drought the plant is certain to grow and to bring forth its fruit in from nine to twelve months. In well ordered plantations the trees are usually planted from 12 to 15 feet apart in the form of squares. The Bananas are taken to market, not unfrequently a distance of 20 miles, by means of clumsy, springless drays and carts, upon which thirty or forty bunches are indiscriminately placed with some attempt at wrapping them in the dried leaves of the plant, and are chafed and scarred by the wheels of the vehicle and the weight of the driver, who generally makes a comfortable perch for himself on the top of the whole. These defects do not present themselves until the fruit has been in the ship's hold some days, when they result in unsightly dark patches.

The total value of the green fruit imported into New York in 1882 was given as follows in the Custom House returns in dollars :—

Oranges and Lemons	770,601
Grapes	77,278
Pine-apples	20,522
Bananas	82,323
Miscellaneous	12,000
Cocoa-nuts	353,502
	1,316,226

Or in round numbers, £261,000. The miscellaneous fruit in the last item comprised Limes, Shaddocks, Mangoes, Grape fruit, Plantains, Sapodillas, Avocado Pears, Guavas, and several other varieties not specified. *P. L. S.*

FLOWERS IN SEASON.

Mr. Burbidge sends us from Dublin flowers of the three following plants :—

Crinum capense var. alba, a very striking Cape bulb, with white Lily-like flowers. It is now flowering freely in the open border.

Balsamita grandiflora.—A singular looking herbaceous perennial with narrow jagged leaves, tall erect fluted stems, bearing solitary button-like heads, 2 inches across, of numerous small yellow tubular flowers.

Theropogon pallidus.—An elegant Himalayan or Khasyan plant, with long narrow leaves and erect racemes of flowers, recalling those of the Lily of the Valley (Convallaria majalis), but of a pinkish colour; very pretty and effective in arrangements of cut flowers. It needs a cool house.

Fabiana imbricata.—When seen in pots this handsome little shrub, as a rule, is far from satisfactory. If allowed a position against a wall in a spot where it does not suffer from drought it makes a beautiful object, producing a profusion of its lovely snow-white blossoms during May and June, and even in July. It is a native of Chili where it is found on plains and along the sandy banks of rivers. It has small Heath-like foliage, and the general habit of the plant is that of a Tamarisk.

Dryas octopetala.—Few members of our native flora make more desirable objects when allowed a suitable place on the rockery on which to develope properly. The dense cushion formed by the tufted branches clothed with tiny evergreen, Oak-like leaves, the under-surfaces of which are white, studded with large white flowers, borne on stalks about 3 inches high, makes a very pretty picture. Under very dissimilar conditions, too, it seems to thrive well, and does not, in gardens at least, refuse to thrive if not given chalk or limestone.

Hoya bella.—Although an old inhabitant of our gardens, and almost of as frequent occurrence as the familiar H. carnosa, this pretty species does not flower so freely. Its cultivation seems easy enough, and while it may be grown in a variety of ways, either as an upright bush or trained to some kind of support, the flowering period seems more or less uncertain and capricious. When this does happen, however, there is no more handsome or attractive plant of its class. The flowers are produced in umbellate clusters from the axils of the leaves, and are of the purest white, with a starry central corona of a waxy consistency, and purple colour. This corona seems to give character and individuality to all the Hoyas, as, indeed, to most of the Asclepiads, and is usually of a different colour from the other parts of the flower. The subject of this note is figured in the *Botanical Magazine*, t. 4402, and a flowering specimen trained on a piece of Tree Fern stem may be seen in the stove at Kew.

Reports of Societies.

Royal Caledonian Horticultural.—The summer show of the Royal Caledonian Horticultural Society was held in the Waverley Market, Edinburgh, on Wednesday and Thursday, 9th and 10th inst. As to the quality of the exhibits, taken as a whole, it was up to the average; though the weather has been unfavourable for the growth of fine flowers, there was a larger turn-out of stuff than has been seen in former Julys, although when compared with the grand display in April last there was a lack of what may be called striking features. This in part may be accounted for by the fact that the leading nurserymen have been more concerned to make a favourable and imposing show at the International Forestry Exhibition than at the more ephemeral event in the Waverley market. Despite this, the large area of the market looked exceedingly attractive, viewed from either end, or from the galleries. Messrs. Mitchell and McLeod displayed their now proverbial taste for artistic grouping in the arrangement of the exhibits.

Primarily instituted for the encouragement of practical gardeners, notice of the show ought to begin with the classes set apart for gardeners and amateurs, whose exhibits are arranged on the tables which span the side aisles of the market. First of all come the tables of plants arranged for effect, and here Mr. R. Grossart, with a collection so admirably set out, and his plants in themselves so beautiful, was awarded a 1st prize. On this occasion he wisely eschewed overcrowding his table with plants, and the result was more artistic and more striking than attained by him at any previous show. From the centre of a compact bank of Adiantums edged with Panicum variegatum there rose a number of handsome table Palms and Crotons, and these formed a foil to a handsome collection of Orchids and dwarf Crotons. Mr. J. Paterson, Millbank, took his wonted place as 1st for six stove or greenhouse plants in flower, all finished in first-class style, and showing a profusion of bloom worthy of his repute. His lot included a fine Statice profusa, a couple of grand Ericas—E. Shannoni and E. Bothwelliana; Aphelexis spectabilis, a nicely flowered Anthurium Scherzerianum, and a Dracophyllum gracile. There was competition for the prize for three stove or greenhouse plants, though the quality was not up to much, except in the first lot shown by Mr. R. Johnston, Woolmet, whose Statice and Erica eximea were really well done. Foliage plants were as a class usually good both as to size and method of growth, but they do not call for special detailed comment. The table of Orchids was unusually attractive, and commanded much attention from visitors. Mr. A. Gow, Perth, came here to the front with a quartette, which did him infinite credit, viz., Cattleya superba splendens, in rare flower; C. gigas, Odontoglossum Uro-Skinneri, and Oncidium macranthum, a beautiful plant; Mr. R. Grossart had to be content with 2d place. Mr. A. Low beat Mr. J. Paterson for the best two Orchids. Mr. Paterson was, however, unapproachable for Cape Heaths, which he showed to perfection in both the lots of four and one; while Mr. George Mackinnon came 1st in one pair with two admirably flowered ventricosas—Bothwelliana and rosea. If former exhibitors of exotic Ferns were missed, the plants forward could not be complained of, Mr. Shiach's collection from Lauriston Castle being staged in the finest and freshest condition, though they were not so large as the specimens we were accustomed to see from Canonmills Lodge. Mr. Graham's Adiantums were both large, compact, and rich in colour. The Lycopods were also very good. We have seen both a larger and a finer display of Pelargonium, while it must also be admitted that the Fuchsias were neither so striking nor so well done as was the case some years ago.

The plants for table decoration were good, and exhibit a growing taste for quiet and graceful yet open growth—*desiderata* at a dinner-table, where the guests expect to see each other and engage in the art of conversation without the necessity of straining their necks round a tolerably sized bush. There were a few good pots of Carnations, some attractive Calceolarias and Gloxinias, and a really handsome collection of alpine plants from Wardie.

Of the cut flowers it may be said that the recent trying weather declared itself in some respects, though the 1st prize stands of Roses were really creditable. Mr. W. Parlane secured the Dickson prize for thirty-six blooms with a lot selected with judgment and staged with care. Mr. Richardson's 2d prize three dozen were large and loose in form, nor could high encomiums be passed on Mr. Kirk's 3d prize lot, but the latter gentleman came markedly to the front in the contest for the best twenty-four, which for beauty of form and purity of colour were by far the sweetest. Mr. J. Kidd's dozen were handsome and equal in size, the latter excellence being absent from Mr. Cocker's lot, while Mr. W. Gourlay's 1st prize dozen of Maréchal Niels was equal to anything in the hall for quality and colour.

FRUIT.—Considering the season the fruit may be described as good, though there was not a large quantity tabled. Mr. W. McKelvie, Broxmouth, had nothing to fear in the collection which he submitted, embracing, as it did, two very nice and richly coloured Melons, a plate of Violette Hâtive Nectarines, two inviting plates of Peaches, the Royal George being especially luscious and large; a Pine, a dish of Strawberries, and two bunches of Buckland Sweetwater Grapes—the latter, though good in bunch and berry, being, however, hardly ripe. The Pine-apples were all good, and the handsome specimen awarded 1st prize to Mr. J. Morrison deserved its place. We have seldom at any season seen finer fruit than that with which Mr. T. Boyd secured the 1st premium for four bunches of Grapes. The Black Hamburghs formed a large though not particularly neat bunch, but they were thoroughly ripe, and covered with an unbroken rich bloom. The bunch of Madresfield Court was very handsome, and beautifully finished, while the two bunches of Waltham Cross were a picture in the rich golden colour and size of their luscious elongated berries; 2d prize fell to Mr. George Mackinnon, Melville Castle. His Black Hamburghs were small but exceedingly well finished, while the Waltham Cross were very far from ripe. For a couple of bunches of Black Hamburghs the veteran prize-taker, Mr. George Johnston, Glamis Castle, occupied his wonted position—his bunches being large, well-shaped, though lacking in the delicate bloom of the Falkirk specimens. Mr. Mackinnon's pair were unequal—one being, however, better finished than the 1st prize lot. Mr. Boyd again was 1st for any other sort of black Grape with two bunches of Madresfield Court, whose size, shape, and finish were deemed perfection. Mr. Morison's 2d prize pair were Mrs. Pince's Black Muscat, excellent in size of berry and of bunch, but unripe. Mr. Mackinnon's Peaches distanced competition for size, ripeness, and flavour, while Mr. Young's Nectarines of the Elruge variety were, both as to colour and ripeness, by far the best. The Figs formed the closest tie, all the lots being excellent; and of the Cherries it may be said that the purple-black Early Rivers, shown by Mr. W. Murray, could not be approached. Messrs. Lamont & Son, The Glen Nurseries, swept the board in the Strawberry classes, and it would be difficult to say which of the following varieties were best:—President, Sir Joseph Paxton, J. Veitch, and Duke of Edinburgh—except that the latter must bear the Palm for richness of colour. There was a large display of vegetables.

Although the show is not so much indebted to nurserymen as some former ones, yet without their contributions there would have been a comparatively meagre display, especially of the large stuff which is so much needed to set out the vast space of the hall. For the eighth time in succession Messrs. Ireland & Thomson secured the 1st prize for a table of plants, 40 feet by 10 feet. The arrangement was strikingly effective, showing a harmonious scheme of colour and a plan which, while eschewing a foot-rule uniformity, was yet far from carelessly irregular. A graceful Date Palm formed the centre, flanked by two handsome Crotons—Queen Victoria and Baroness Rothschild—while the other prominent plants were Ixoras and Dracænas, the latter including a fine specimen of the new Lindeni, with a beautiful white and light green variegation. Amidst an assortment of greenhouse plants, such as Roses, Pelargoniums, were found such Crotons as Thomsoni, one of the most effective of this type of plants; Heaths, the white variegated Ficus elastica, Anthurium Scherzerianum Knightii—sent out last year, and with brilliant scarlet flowers 10 inches long, &c. But the great value and attraction of the collection consisted in the Orchids and Nepenthes, for which the firm is famous. These included Nepenthes Mastersiana, a grand plant with richly coloured pitchers 9 inches long and 2½ inches broad, and Cephalotus follicularis with neat lid-covering and pitchers of a rich green colour spotted with purple. The same firm came 1st for Dracænas and table plants, while Messrs. Laird & Sons occupied the premier place for Palms; Messrs. J. Methven & Sons for Tree Ferns, and Mr. Robertson Munro for herbaceous plants and alpines. Messrs. Laird & Sons furnished a handsome table with a useful collection of Palms, Yuccas, Roses, Pelargoniums, and Ixoras; and the simple elegance of the table decorated by Messrs. J. Methven & Sons won for it much admiration. Messrs. Cunningham, Fraser & Co. had also a very effectively furnished table. The east end of the hall was allotted to Messrs. Dicksons & Co., whose artistically arranged collection embraced a noble specimen of Eucharis amazonica, laden with its lovely white flowers, a large assortment of New Zealand Flax, Yuccas, and florists' flowers *ad lib*. The same firm also showed Acer Hookerianum, a new Indian Maple with leaves brown when grown in the open air, and a pale green when cultivated under glass.

In the cut flower department the Roses were, of course, the great attraction, and here Mr. Hugh Dickson, Belfast, all but swept the board, though in at least one class Mr. T. Smith, Stranraer, might without favour have been placed equal. The Tea Roses were also very fine, and here Mr. J. Bryson was 2d to Mr. Dickson. Mr. Dickson beat Mr. Smith in the dozen trusses of Roses, to our thinking more from the excellent taste in arrangement than for superior excellence of flowers; but there could be no question as to the higher merit of the Belfast Maréchal Niels. The Gloire de Dijons to which 1st prize was given came from the Aberdeen Nursery of Messrs. J. Cocker & Sons, and here Mr. Dickson had to lower his colours, the North Country Roses being of finer form and quite as good in colour as those from the North of Ireland. An attractive lot, because of the taste with which they were made up, were the buttonhole bouquets of Roses for which the premium was awarded to Mr. J. Thomson, Edinburgh. With the exception of the cut stove flowers shown by Messrs. Ireland & Thomson, and for which the 1st prize was given, nothing else in the cut flowers calls for special mention. *Correspondent.*

Ealing, Acton and Hanwell Horticultural: *July* 9.—Under unusually pleasant weather auspices, the twentieth summer show of this first-class metropolitan society was held in the charming park attached to Manor House, the residence of the President, the Right Hon. S. Walpole, and which lies adjacent to the most populous parts of Ealing. Not only was the show literally the largest the Society has yet held, the huge tents provided being throughout well filled, but it was the most largely attended, for the visitors exceeded all previous experience, and thus paid a tribute, not only to the exhibition as a local institution, but also to horticulture in its widest aspects. The arrangements throughout were excellent, and in the production of good effects cannot be too highly praised, indeed the Ealing show presents conclusive proof that the best road to success is found in placing the management of similar bodies in thorough practical hands. The groups of plants sent for exhibition but not in competition are always good at this show and merit premier mention, because of the kindness shown by the senders. Of these none could well be more meritorious than was the splendid group of hardy ornamental and variegated trees and shrubs sent by Messrs. C. Lee & Sons, from their Isleworth nurseries. This was the finest bank they have yet made, and to the elements of which we have previously often referred. It need hardly be said that here it proved to be one of the great attractions of the show.

Messrs. John Laing & Co., Forest Hill, sent a group of their superb Begonias in grand form, which, intermixed with various ornamental plants, naturally elicited admiration. Messrs. Fromow & Sons arranged one of their high-class decorative plant groups with that refined taste for which this firm has become conspicuous. Mr. Roberts sent from Gunnersbury Park a superb lot of plants, amongst which very striking, because of rich colouring, were several plants full of bloom of the hybrid Napoleon Pink. Evidently this is as fine for pot-work as it is good in the open ground. Ericas, Aphelexis, herbaceous Calceolarias in variety, and many other good things were found in this group. Messrs. Veitch & Sons and C. Lee & Sons put up each a fine bank of cut Roses, all singularly fresh and beautiful. Why these firms do not enter into the various Rose competitions we cannot understand, but certainly their flowers are always of a high-class order.

Turning now to the competitive classes, decorative groups take the first place, and in the larger of these Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, came 1st, with a very gay and pleasing arrangement, though square fronts are seldom so much admired as circular ones. Mr. Chadwick had some superb Lilium auratums in his group that were much admired. Mr. Smith, gr. to T. Nye, Esq., Ealing, was 2d, with a very pretty arrangement, in which some fine Gloxinias told well; and Mr. Fountain, gr. to Miss Wood, Hanger Hill, was 3d. In the smaller groups, of which there were many, the best, a very charming arrangement, was placed by Mr. Fulford, gr. to J. Boosey, Esq., Acton; whilst Mr. Sutton, gr. to Mrs. Wilkinson, of Ealing, had one that, if less light, was exceedingly gay.

In the specimen plant classes Mr. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, was, as usual, a powerful exhibitor, and in the class for six foliaged plants had a grand Croton Weismanni, very finely coloured; Dracæna Youngii, a large and exceedingly handsome piece of Asparagus plumosus, and fine Palms. Mr. Chadwick was 2d in this class, with fine Latania borbonica, good Crotons, Pandanus Veitchii, &c. The best six Ferns came from Mr. Hudson, who had huge Davallia bullata, Gleichenia Mendeli, a splendid Thamnopteris australasica, and others; Mr. Smith came 2d, with some very handsome fresh Davallias, Adiantums, &c. With stove and greenhouse plants Mr. Chadwick took the honours, having good specimens of Vinca oculata, Allamanda Hendersoni, Cissus discolor, Croton variegatus, &c.; and in another class for six plants in flower the same exhibitor was also 1st, with a richly flowered Erythrina Crista-galli, Bougainvillea glabra, and other good things.

In smaller classes the competition was good, indeed, the four Ferns sent by Mr. Fulford, from Acton, were first-rate. The best specimen plant in flower was a fine piece of Brassia verrucosa, carrying ten large racemes of curiously formed flowers: this was sent by Mr. Copestake, gr. to W. Roebuck, Esq., Acton. The best specimen Fuchsia came from Mr. Wright, gr. to G. P. Greenfield, Esq., Hanwell, whose pyramid Charming was first-rate. In the single specimen foliage plants Mr. Hudson was unbeatable, with his monster Gleichenia flabellata. Mr. Wright had the best four Fuchsias—good plants of Arabella, Avalanche, Brigade, and Mrs. Marshall; and also the best six Gloxinias, the which were largely shown. Mr. Wright's plants were not only finely grown, but the trusses were of great excellence. Smaller but beautifully flowered plants came also from Hanwell, sent by Mr. Robinson, gr. to J. Harris, Esq. Begonias, zonal Pelargoniums, Balsams, Cockscombs, Coleus, and many other favourite summer plants were all well shown.

Amongst cut flowers the open class for twenty-four Roses, in threes, in which trade growers compete, always proves a great attraction. Messrs. Paul & Son, of Cheshunt, Mr. C. Turner, of Slough, and Mr. W. Rumsey, Waltham Cross, were the exhibitors, taking the excellent prizes in the order named. It is enough to say that their flowers were well worthy these growers' reputations, and were singularly fresh and attractive. In the open classes for twelve Teas, Messrs. Paul & Son were again 1st, having Madame Cusin, an exquisite rosy-coloured flower; Mons. Van Houtte, Catherine Mermet, Comtesse de Nadaillac, and Souvenir d'Elise Vardon, in beautiful form; Mr. Rumsey came 2d, and Mr. Turner 3d. Mr. Howard Hayward, of Ealing, proved invincible in the local classes, carrying off a challenge cup for the best twelve blooms, which becomes his

property finally, and a second cup, of which he becomes the possessor for a year, with other twelve blooms; also taking the 1st prize in the class for six blooms. Mr. Fulford had the best twelve bunches of cut flowers, which included the curious Stanhopea tigrina and other good things. Mr. Hudson came 2d, also with some excellent kinds. Hardy flowers in bunches, show and zonal Pelargoniums, Sweet Williams, Antirrhinums, and many other popular flowers, were well shown. Table decorations, all arranged and judged by ladies, were naturally very attractive to visitors; and three stands put up by Mrs Hudson, not for competition; a huge bouquet of Miss Johffe Pink, arranged by Mrs. H. B. Smith; and a lovely basket of Roses and other cut flowers put up by a local lady proved to be the most attractive features.

FRUIT proved to be a strong feature, and Mr. Hudson's collection of six dishes would have taken considerable beating. He had very fine Black Hamburgh and Foster's Seedling Grapes, Queen Pine, Lord Napier Nectarines, Black Circassian Cherries, and scarlet-flesh Melon. Mr. Chadwick was 2d with good samples. With two bunches of black Grapes Mr. Hudson was 1st with fine Madresfield Court, and in the class for whites Mr. Baird, gr. to C. A. Daw, Esq., Ealing, was best, with fine Duke of Buccleuch and Buckland Sweetwater. Mr. Hudson had superb Bigarreau Napoleon and Black Circassian Cherries; Mr. Fulford fine Dr. Hogg and Eleanor Strawberries, and the 1st prize also with James Veitch in the single dish class. The best Melon, a hybrid scarlet, and the best Nectarines in very rich-coloured Lord Napier, were Mr. Hudson's. There was a large competition for Messrs. Jas. Carter & Co.'s prizes for Peas, the best and second best dishes coming from William Farndon and John Farndon, both cottagers, the samples being excellent. Mr. Wright had the best dish of Hooper's Earliest of All Potato—a variety closely resembling Early Rose. Vegetables were fairly good, and plentifully shown. The best dish of kidneys in the show was Midsummer Kidney, well shown by Mr. Chadwick; and Mr. Weedon easily took the 1st prize in the Cucumber class with a beautiful brace of his Best of All, deep in colour, and carrying a good coat of bloom. The single-handed gardeners', amateurs', and cottagers' classes were well filled, and made a big show in themselves. The cottagers' products—always in great force at Ealing—were hardly so fine as usual, but the competition was none the less remarkable, their entries alone exceeding 300 in number in the various classes, although that figure is below the average of good seasons.

Highgate Horticultural: *July* 10.—This Society has now been in existence twenty-five years; how it has grown, and the sphere of its usefulness extended, may be understood by the simple fact that the entries at the first show, a quarter of a century back, numbered, we believe, about seventy; on the present occasion they were over 700. The show was held in the grounds at Caen Wood Towers, Mr. Reckitt's beautiful place on the south-western side of Highgate, which, for its commanding position and lovely surroundings, would be difficult to surpass within any reasonable distance of London, which, so far as appearance on the spot is concerned, might be 50 miles away. The exhibition was quite equal to the average of late years both in extent and in the quality of the exhibits; this especially applies to flowering plants, which were more numerous and in better condition than usual, giving a brighter appearance to the display. Here, as at most exhibitions in recent times, groups of plants in which effective arrangement is the first essential, formed one of the leading features; these occupied the whole of one side of a very large tent; the President's prizes (F. Reckett, Esq.), given for 1st and 2d in this competition, were taken by Mr. Brooks, gr. to W. Reynolds, Esq., and Mr. Witty, in the order named, both having fairly arranged exhibits. In the class for groups confined to 40 feet square, the prizes, also offered by the President, Mr. T. Smith took the 1st, and Mr. Howlett the 2d. For the group of plants arranged in a space 9 feet by 6 (prizes offered by Mrs. Stedall), Mr. Aldous, gr. to G. Heriot, Esq., took the lead with the best arrangement of this kind in the show, form and colour in the materials used being well balanced; 2d, Mr. Archer, gr. to J. J. Griffin, Esq. The Treasurer's prize for six Ericas was taken by Mr. Eason, gr. to B. Noakes, Esq., with a nicely flowered half-dozen. Mr. Law's prizes for six Tuberous Begonias, were awarded to Mr. Osborne, gr. to J. N. Mappin, Esq., and Mr. Tong, both showing nicely flowered examples. In the class for six Palms (prizes offered by W. Reynolds, Esq.,) Mr. Archer was 1st, and Mr. Osborne 2d. For six Adiantums (prizes offered by B. Noakes, Esq.), Mr. Osborne was well in front, showing well managed, medium-sized examples; 2d, Mr. Burnett, gr. to R. D. Littler, Esq. With six stove and greenhouse plants, Mr. Osborne took the lead, staging a creditable half dozen, amongst which were Erica ferruginea, E. depressa, Bougainvillea glabra, and Rhynchospermum jasminoides, nicely bloomed; 2d, Mr. Eason, who, with others had nice examples of Erica Aitoniana superba, and E. tricolor profusa. Four stove and greenhouse plants.—1st, Mr. Burnett, whose best examples were Kalosanthes coccinea, and Eucharis amazonica with some fifteen spikes of bloom. For a single stove or greenhouse plant in flower Mr. Osborne came in 1st and Mr. Eason 2d.

In the class for six fine-foliaged plants Mr. Aldous was 1st, with medium-sized examples, the best of which were Cocos Weddelliana, Alocasia metallica, and Croton Prince of Wales; 2d, Mr. Eason. Four fine-foliaged plants.—With these Mr. Osborne was well in front; 2d, Mr. Burnett. Single specimen foliaged plant.—1st, Mr. Burnett, with a very good plant of Chamærops humilis; 2d, Mr. Archer.

Ferns were in nice condition, most of the exhibitors confining their collections principally to low-growing species, which is a step in the right direction, as the tree kinds not unusually are too much represented. With six Mr. Burnett had 1st, showing in a pretty lot a fine specimen of Lygodium scandens that densely covered a cylinder-shaped trellis; 2d, Mr. Archer. Four Ferns.—1st, Mr. Eason; 2d, Mr. Shepherd. Selaginellas were contributed by Mr. Osborne, who took the lead in the class for six, closely followed by Mr. Theobald, gr. to A. Goslett, Esq.

ORCHIDS.—With six Mr. Aldous was well in front, with nicely bloomed examples of Dendrobium Dearei, D. suavissimum, Odontoglossum vexillarium, Cypripedium Lowii, Masdevallia Harryana, and Aërides odoratum; 2d, Mr. Birse, gr. to J. H. Lermitte, Esq., who had very good dark and light-coloured varieties of Odontoglossum vexillarium, Cypripedium Stonei, Masdevallia Harryana, Cattleya Mossiæ, and the now seldom seen Stanhopea tigrina; 3d, Mr. Tonge. Single Orchid.—1st, Mr. Aldous, with a good specimen of Dendrobium suavissimum, bearing fourteen spikes of flowers; Mr. Birse, who was 2d, had a well bloomed Odontoglossum vexillarium; 3d, Mr. Eason, with Cypripedium Sedeni.

Fuchsias were nicely shown, full of flower, and well clothed with foliage, Mr. Burnett being 1st, with six; Mr. Eason 2d. Four.—1st, Mr. Shepherd; 2d, Mr. Brooks. Pelargoniums of the ordinary show kinds were nicely staged by Mr. Osborne, who was 1st for six; 2d, Mr. Burnett. Zonal Pelargoniums were well flowered, not so large as sometimes seen, and none the worse for that. With six, Mr. Eason took the lead, Mr. Shepherd being 2d. Gloxinias were in beautiful order, Mr. Kent, gr. to J. Lane, Esq., having 1st honours for six; Mr. Brooks 2d. Six Achimenes.—1st, Mr. Eason; 2d, Mr. Tonge. Caladiums.—1st, Mr. Aldous.

Petunias, shown in sixes, were well flowered and effective, Mr. Brooks taking 1st, Mr. Shepherd 2d. Coleus, as usual, were very telling, their bright colours coming out well amongst the more sombre foliage of other plants. Mr. Brooks was 1st with a nicely managed half-dozen; 2d, Mr. Burnett. In the class for six miscellaneous greenhouse plants, Mr. Shepherd had 1st honours, staging, amongst others, a nice specimen of Plumbago capensis; 2d, Mr. Rowson, gr. to R. Parkinson, Esq. Table plants of the right size and character were shown by Mr. Eason and Mr. Aldous, who were respectively 1st and 2d for three.

CUT FLOWERS.—Of these there were, as usual here, a large quantity. Table decorations in three pieces, with or without fruit.—In this class several nice arrangements were shown, the 1st prize going to three small stands with a few flowers, confined to few colours, loosely put together, with Ferns and grasses, quite a contrast to the over-done groups often met with; these were shown by Mr. Atkins—Mr. Theobald and Mr. Wilkinson, gr. to W. W. Webster, Esq., being 2d and 3d. With twenty-four bunches of cut flowers Mr. Kent, gr. to J. Lane, Esq., was 1st, with a tastefully arranged collection; 2d, Mr. Eason; 3d, Mr. Wilkinson. Twelve bunches of cut flowers.—1st, Mr. Osborne; 2d, Mr. Brooks. Mr. McKinley, gr. to C. Wright, Esq., was a long way 1st in the class for bouquets, showing an excellent example, very opposite in character to the closely packed masses frequently seen; the flowers of which it was composed were alike suitable in form and colour; 2d, Mr. Brooks. Roses were not equal to what we have seen them here before. For twenty-four, Mr. Theobald had 1st, Mr. Eason 2d. Twelve Roses.—1st, Mr. Osborne; 2d, Mr. Aldous.

FRUIT was nicely shown, and in considerable quantities. With six dishes Mr. Theobald took the lead, staging Black Hamburgh and Muscat of Alexandria Grapes, Peaches, Nectarines, a Melon, and Strawberries collectively, in good condition; 2d, Mr. Wilkinson, with three bunches of Black Grapes. Mr. Birse was 1st with well finished bunches of good even berries; 2d, Mr. Silvester, gr. to J. Abethell, Esq., who had good examples, a little smaller in bunch and berry. Three bunches of white Grapes.—1st, Mr. Calvert, gr. to J. Kent, Esq.; 2d, Mr. Theobald, both showing Muscat of Alexandria. Dish of Peaches.—1st, Mr. Sparkes, gr. to Sir S. H. Waterlow, with beautiful examples; 2d, Mr. Birse. Dish of Nectarines.—1st, Mr. Birse; 2d, Mr. Theobald. Melon.—1st, Mr. Kent; 2d, Mr. Agate. Two dishes of Strawberries.—1st, Mr. Brooks. Single dishes of Strawberries.—1st, Mr. Theobald; 2d, Mr. Osborne.

VEGETABLES were well and plentifully shown. With a collection Mr. Agate was 1st, Mr. Cowles, gr. to E. Fox, Esq., 2d; Mr. Wilkinson 3d. This Society was originally established, we understand, with a view to encourage gardening amongst the cottagers in the district, and which laudable object the promoters have all along kept steadily in view. How they have succeeded the display annually present in the large tent, always filled to overflowing with vegetables, hardy fruit, flowers, window plants, window-boxes, herbs, &c., grown by cottagers who are *bonâ fide* labourers or mechanics, either in the gardens attached to their homes, or in allotments, give ample proof, for not only is the produce from this class of growers annually brought together remarkable for its extent and variety, but equally so for its general excellence. To those acquainted with the difficulties which this class of growers especially labour under so near London, a sight of the display at Highgate cannot fail to cause surprise.

Mr. B. S. Williams staged, not for competition, a handsome group of plants of a miscellaneous description, including Orchids, flowering stove and greenhouse plants, Palms, Nepenthes, Sarracenias, Ferns, and other fine-leaved kinds. Messrs. Cutbush likewise had a nicely arranged, effective group, comprising Heaths and various hard-wooded plants, flowering and fine-leaved, with others of a hardy description, along with several boxes of Roses in good condition.

Edinburgh Botanical: *July* 10.—The Society met in the class-room, Royal Botanic Garden, W. B. Boyd, Esq., President, in the chair.

The Society voted a donation of 10 guineas to the funds of the International Forestry Exhibition.

The following papers were read:—

I. "The May Island; its Archæology; its Algoid Flora; its Phanerogams and higher Cryptogams, with exhibition of specimens." By John Rattray, M.A., B.Sc.

II. "Note on the Algæ of Granton Quarry, with Microscopic Demonstration of the Fructification of several species of Algæ." By John Rattray, M.A., B.Sc.

III. "On the Progress of Open-air Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

"During the past month outdoor vegetation has been very much retarded, owing to the extreme drought which prevailed. There were twenty-three dry days. Slight showers of rain fell on seven days, viz., the 5th, 6th, 13th, 22d, 23d, 24th, and 29th. The lowest night temperature for June was 42°, on the nights of the 7th and 9th; the highest, 58°, on the 29th. The lowest day temperature was 56°, which occurred on the 5th; and the highest, 80°, on the 28th. In consequence of the want of rain, along with the mildness of the past winter, aphides, caterpillars, and other insect pests have been very numerous and destructive. Beech, Elm, Holly, Gooseberry and Currant are much infested by them; Roses, however, are tolerably clean and well budded. Late varieties of Rhododendron and Azalea have been inferior this season, the heads of flower were small and of short duration. All late transplanted trees and shrubs have suffered severely from drought. Most coniferous plants, Piceas, Abies, and Cedrus in particular, have developed fine healthy shoots. The golden variegated forms of Biota, Retinospora, Cupressus, and Taxus have coloured extremely well and are very bright and effective mixed with the green forms. The hot, dry weather appears to have suited their requirements very well. In the rock garden 346 species and varieties of dwarf-growing herbaceous and alpine plants came into flower during the month, making a total of 797 for the season, as compared with 701 at corresponding date last year. The following were amongst those which flowered

Acantholimon glumaceum	Houstonia serpyllifolia
Allium MacNabianum	Hypoxis erecta
Androsace lanuginosa	Linaria hepaticæfolia
Cacalia alpina	Meconopsis Wallichii
Calceolaria Kellyana	,, ,, fusco-purpurea
Cathcartia villosa	Ononis rotundifolia
Celmisia spectabilis	Orchis foliosa
Cypripedium spectabile	,, maculata superba
Dianthus alpinus	Oxytropis uralensis
Erodium macrodenum	Papaver alpinum
,, manescavi	Petrocoptis Lagascana
Edraianthus pumilorum	Polemonium humile
Fritillaria kamtschatica	Rodgersia podophylla
Gaultheria carnea	Rosa pyrenaica
Gentiana lutea	Raymondia pyrenaica
,, ornata	Silene alpestris
,, septemfida cordifolia	Vicia argentea
Hedysarum obscurum	,, villosus

Since the present month began a copious supply of rain has fallen, which has done much good, not only in moistening the soil, but in cleansing the leaves of trees and shrubs and other plants infested with insects."

IV. "Report on Temperature, Vegetation, &c., in the Botanic Garden, Glasgow, June, 1844." By Robert Bullen, Curator.

"The lowest temperature registered during the month was 36°, during the night of the 8th; the highest 56°, during the night of the 28th. The lowest day temperature in the shade was 49°, on the 5th; the highest, 79°, on the 28th, on which day 113° were registered in the sun. On the 17th 107° were registered. The dry weather recorded during the latter part of last month has been continued; bright sunny days have been general; the few slight showers which have fallen are barely worth recording, consequently have been of little benefit to vegetation. Burns for brooks have been dried up in many places, and farm and garden crops have suffered to some extent, Turnips expecially so; but there is a prospect of a very early and, in some districts, an abundant harvest; in others cereals are both stunted and scant. Generally spring-sown seeds, particularly those of annuals, germinated badly, and what few did grow have in many instances been forced into bloom prematurely. Few hardy trees and shrubs have flowered well this season; but the hardier kinds of herbaceous plants have bloomed earlier and more prolific than usual. Deaths, however, have been numerous amongst those transplanted during the spring months."

V. Miscellaneous contributions.—Mr. Tayler exhibited a sample bag of Coffee, sent by Mr. John Buchanan, Zomba, East Africa, which was of excellent quality and free from disease. It represented a crop of 10 acres. Three years ago a single plant had been sent to the Blantyre Mission Station, from the Edinburgh Botanic Garden, and now there were 23,000 plants in the district. A Tea plant sent from the same source had not thriven with Mr. Buchanan, but Vines were growing capitally.

Dr. Sanderson, Treasurer of the Scottish Meteorological Society, sent through Mr. Buchan, for exhibition, a fine specimen of Saxifraga stellaris transmitted by Mr. Miller, the second assistant at the Ben Nevis observatory, which he had picked up on the top of the Ben on the 6th inst. A large well grown moth was caught at the same time.

The following plants were exhibited in pots from the garden :—

Pratia angulata	Campanula barbata
Momordica balsamina	Allium MacNabianum
Hydrangea quercifolia	Brachycome Sinclairii
Silene quadridentata	Primula capitata
Campanula hederacea	Papaver nudicaule fl.-pl.
Sedum sempervivum	Potentilla nitida rosea, &c.
Primula floribunda	Anagallis tenella, &c.

The President showed ripe fruit of Rubus antarcticus, grown in his garden at Faldonside, Melrose. This form never fails to produce fruit in abundance.

Woodbridge Horticultural.—This Society held its annual *fête* on July 10, in the Abbey grounds, which are immediately contiguous to the town, and therefore well situated for meetings of this kind, as is proved by the great concourse of people that always assemble on such occasions ; and though the show every year comes off in the same place, the visitors never seem to tire, but attend in increasing numbers, as they can always count on having plenty to see in the tents. Good as the exhibition was on this last occasion, there was a great falling off from other years in the plant department, as there were no contributions from Sudbourne Hall, the estate having changed hands, but it is to be hoped that the new owner will put in an appearance next year, and that Mr. Collet, his gardener, will be as successful as Mr. Bethell, who is now seeking a fresh appointment. Although there was a somewhat meagre display of choice well grown plants, the long table in the fruit tent was filled—Mr. Mill, Lord Rendlesham's able gardener, being the strongest and most successful exhibitor, he having a superb collection, containing magnificent Royal George Peaches and Pitmaston Orange Nectarines, both of which were not only unusually large, but of high colour. The Black Hamburgh Grapes, White Marseilles Figs, British Queen Strawberries, Elton Cherries, and Melon, were also very fine ; and Mr. Mill therefore had the honour of taking the special prize offered by his noble employer ; the 2d, given by Captain E. C. Moor, falling to the lot of Mr. Fisher, gr. to Lord Waveney, of Flixton Hall, who showed a handsome Golden Gem Melon, Muscat of Alexandria and Black Hamburgh Grapes, Figs, Peaches, Nectarines, Cherries, and Strawberries. Mr. J. Best, gr. to the Duke of Hamilton, had to be content with a 3d, although he had a highly meritorious collection, his Black Hamburgh being fine in berry and well coloured, as were likewise his Buckland Sweetwater, Peaches and Nectarines, and Emerald Gem Melon. For the best four bunches of Grapes, two black and two white, Mr. J. Best was 1st, with large, well finished bunches of Black Hamburgh and Foster's Seedling ; Mr. Fisher coming in 2d, with Muscat of Alexandria and Black Hamburgh. In the class for three bunches of one kind, Mr. Fisher, gr. to Lord Waveney, was 1st, and Mr. Tebenham, gr. to Lady North, of Glenham, 2d—the last-named gentleman coming in 1st for the best three white. In the class for Peaches, Mr. Mill outdistanced competition with six Royal George, which, for size and colour, were more like Barringtons, and therefore made the others look small. The Pitmaston Orange Nectarines contributed by Mr. Fisher, for which he took 1st, were very fine ; and Mr. Mill also had a capital dish of Lord Napier, a Nectarine that is fast making its way, and is decidedly the best for forcing. Of Melons there was a good show, and the whole of the five prizes offered were given for the same kind—Golden Perfection—which, however, varied considerably in flesh, netting, and rind. Strawberries were remarkably good, Mr. Mill, gr. to Lord Rendlesham, taking 1st for the best dish for flavour, which prize he won with the fine old British Queen—the "special," presented by G. Moor, Esq., for a collection, being carried off by Mr. Tebenham, gr. to Lady North, who had fine fruit of Sir J. Paxton, Dr. Hogg, James Veitch, Lucas, Alice Maud, and Prince Imperial ; the 2d falling to the lot of Mr. Cooper, gr. to Colonel Long, of Hurt's Hall ; and the 3d to Mr. J. Best, gr. to the Duke of Hamilton. Gooseberries were chiefly represented by the Golden Drop and Whitesmith, the latter being one of the best, if not the best, of all the dessert kinds. Currants, as is usual at Woodbridge, were fine, neither black nor white showing any trace of aphis, that have been so troublesome in nearly all gardens.

The dry season had evidently told on the vegetables, as they were not so abundant and good as they are generally at Woodbridge, where there is usually a fine show, especially of Potatos, which are evidently backward this year ; but the late rain will now help to swell them up rapidly, if only the dreaded disease will keep off the tops. The favourite with the judges among Broad Beans appeared to be Daniels' Defiance, a very large, long-podded kind, to which the 1st prize was awarded ; and among Peas Stratagem took the lead, coming in before Telephone and the old and well tried Ne Plus Ultra, one of the best of all summer Peas. One good feature in the Woodbridge show is the encouragement given to cottagers, who fill a large tent with their productions, and if they competed with gardeners would run them close.

In the plant department of the show the Orchids were the chief feature, as though not contributed in quantity those from Lord Rendlesham's garden were well grown and flowered, Mr. Mill taking the prize for the best four, consisting of Aërides odoratm, Anguloua Clowesii, Odontoglossum citrosmum, and a very fine pan of Epidendrum vitellinum majus.

In stove, greenhouse, and fine-foliaged plants the Messrs. Gilbert, nurserymen, of Ipswich, had all pretty much to themselves, and took 1st for the best six in both classes, and the same for a collection grouped in the best taste in a space 12 by 4 feet. Fuchsias are always good at Woodbridge so far as the plants are concerned, as fine specimens are shown, but the growers still keep to such old sorts as Venus de Medici, Rose of Castille, Daniel Lambert, &c., which have been surpassed long ago ; the last-named, however, is still a favourite with many, as besides having large showy red flowers it is of fine habit and soon makes a big plant. A Woodbridge show could hardly take place without Hydrangeas, which are always to be seen there in excellent form, and every shoot surmounted with a great head of bloom. Zonal Pelargoniums, Petunias, Gloxinias, Cockscombs, Achimenes, Verbenas, Begonias, and nearly all other soft-wooded subjects are contributed in quantity, and as these small classes bring in so many amateurs and small growers, a big show is made up, and the tents are well filled. It is the same again with cut flowers, as there are classes for those wild from the fields and hedgerows, and these, put up with the exquisite taste Miss Stidolph always displays, hold their own for lightness and beauty beside some of the choicest exotics. For the best and most tastefully arranged device or table decoration, with flowers and fruit combined, Mr. Palmer, gr. to Captain Powell, was 1st, but Mr. Mill ran him very close with better fruit and choice Orchids, only losing the premier position by the stand being more crowded and heavy, thus obstructing the view across, otherwise the decision would, no doubt, have been different. The show of cut Roses, considering the lateness of the season and the heat of the weather, was remarkably good, as would be the case when such growers as the Cants of Colchester, the Rev. H. A. Berners, Rev. H. C. Frere, Rev. F. L. Hayward, and Mr. Palmer, of Drinkstone, put in an appearance. In the class for twenty-four, open to all England, Mr. B. R. Cant, of the Mile End Nursery, was 1st, and took the special prize presented by the town of Woodbridge, the 2d falling to the lot of Mr. Frank Cant, and the 3d to Mr. Palmer, of Drinkstone. Besides the above noticed stands containing twenty-four there was another with some very good flowers shown on a ground of black velvet, which quite killed them, and showed at a glance how very unsuitable it was compared with fresh green moss, on which Rose blooms always look well, as they appear cool and comfortable on such a damp bed, and being of a neutral tint, like the foliage, there is nothing to interfere with the colours. In the twelves, the Rev. H. A. Berners, who has been showing very strong this year, was 1st, with a nice even dozen. The Rev. F. L. Hayward came in 2d. In the sixes there were two or three of the finest blooms in the show, the Reynolds Hole, Alfred Colomb, and Prince Arthur being remarkable for stoutness of petals and colour. The 1st prize in this small class fell to Mr. James Buxton, of Onehouse ; and the 2d to the Rev. H. A. Berners, of Harkstead ; Mr. Fisher, of Flixton, taking 3d. For the best twelve Teas the Rev. H. A. Berners was 1st, with a fine fresh-looking lot ; and Mr. Palmer, gr. to Captain Powell, of Drinkstone, 2d. Next to the Roses the herbaceous cut flowers came in for the greatest share of attention, and well they deserved it, as plants that afford them are among the most useful and ornamental things any one can have in a garden ; and it is very certain that they have a great future before them. In the collection of twenty-four the Messrs. Gilbert, of Ipswich, were 1st. The 2d prize was taken by Mr. James Buxton, who had in his stand most of the same kind of things. In the class for twelve Mr. Cooper, gr. to Colonel Long, of Hurt's Hall, Saxmundham, was 1st, with a very fine lot ; and Mr. E. Cox came in a good 2d. Cut zonal Pelargoniums made a brilliant show, as both singles and doubles were exhibited in quantity, and any seeing them could not fail to notice the great progress that has been made in these flowers of late, as their size has been more than doubled, and the colours vastly improved.

Braintree and Bocking Horticultural.—The second annual show of this Society, of which Captain Harrison is President, and Sydney Courtauld, Esq., Treasurer, was held on July 10 in the grounds of Boleyne, Bocking, the residence of Lieut.-Colonel S. G. Savill, and in response to the 200 prizes offered by the Society, supplemented by two Silver Cups given by Sydney Courtauld, Esq., and Mrs. J. N. Harrison, and special prizes by Mrs. S. Courtauld, Mrs. Parris, Mr. R. Parris, Mr. R. W. Davis, and Mr. R. D. Sharpe, an excellent display of good exhibits were brought together to decorate the four large marquees produced for the purpose. Many of the exhibits were far in advance of those usually seen at local flower shows, among the best being the eight fine, well-grown and profusely flowered stove and greenhouse plants with which Mr. T. Harris, nurseryman, of Chelmsford, took the Silver Cup offered by Sydney Courtauld, Esq. ; they were an even lot of perfect plants, which the owner need not be ashamed to stage at any show in the United Kingdom. They consisted of Anthurium Scherzerianum, Phœnocoma prolifera, Bougainvillea glabra, Erica Williamsii, Erica æmula, Statice profusa, Kalosanthes coccinea, and Allamanda Hendersoni. Mr. T. Harris' six foliage plants, with which he took the Silver Cup offered by Mrs. J. N. Harrison, and consisting of Croton Andreanus, C. Queen Victoria, Cycas revoluta, Theophrasta imperialis, Chamærops humilis, and Latania borbonica, were of the first merit ; and so were his excellent group of Ferns, and grand single specimen Anthurium Scherzerianum. The collections of Coleus and Gloxinias brought by Mr. Smoothy were also very excellent, and so were the Caladiums (1st prize) staged by Mr. Everitt, gr. to Mrs. Cawston, Folly House, Bocking. The prize for plants arranged in a basket of 30 inches diameter, brought forth a spirited competition, all the exhibits being good. The 1st prize was awarded to that sent by S. Courtauld, Esq., which was so tastefully arranged and made up of such good plants that it would have been difficult to have beaten it. The arrangement contained Oncidium crispum, with branched spike over 3 feet ; Epidendrum vitellinum majus, with seven spikes ; Odontoglossum Alexandræ, eight flower-spikes ; O. vexillarium, several ; Oncidium macranthum, Masdevallia Harryana, M. Veitchiana, &c., arranged with Maidenhair Ferns. The 2d prize basket, from Mr. Saltmarsh, of Chelmsford, with some fine Lilium auratum in the centre, was also a good arrangement. The prize for new or rare plants was won by Mr. S. Courtauld, with a most extraordinary mass of Nanodes Medusæ, well flowered. The cut flowers were well represented in most of the classes, Roses being good generally, but particularly so those of Mr. W. Brown, of Braintree. The Pelargoniums also, sent by Captain Harrison, of Saling Grove, were also very fine. The fruit shown by Mr. Soder, gr. at Holfield Grange ; Mr. Bishop, gr. to S. Onley, Esq., Stisted Hall ; and Mr. Pitcher, gr. to E. Cooke, Esq., of Hatfield Peverill ; and the Strawberries shown by Mr. Clark, of Writtle, were excellent. Table decorations consisted mainly of centrepieces, a great many good exhibits being secured. A very effective oval design, made up of plants in small pots and cut flowers, surfaced with Selaginella, came from Mr. Sydney Courtauld, and was much admired. The centre plant was Dendrobium Dearei, with three spikes ; fifteen spikes of Odontoglossum Alexandræ, with a base of Bougainvillea glabra, and an edge of netted leaved Honeysuckle. The foliage was supplied by Nephrolepis pectinata, Onychium japonicum, and Pteris cretica, green and variegated ; and the whole made up a massive piece, beautiful in effect, without in any way being cumbersome or obstructing the view across the table. The vegetables and the cottagers' sections were well competed in, and an interesting feature was added by the Essex Bee Association having a tent on the ground, in which bees and honey were displayed, and illustrations of bee-driving given by Mr. W. Debenham, the expert of the Society. A goodly company assembled to enjoy the floral feast prepared for them.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, JULY 16, 1883

MONTH AND DAY	BAROMETER: Mean Reading, Reduced to 32° Fahr.	BAROMETER: Departure from Average of 18 years.	TEMPERATURE OF THE AIR: Highest	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity Sat. = 100	WIND: Average Direction.	RAINFALL.
July	In.	In.	°	°	°	°	°	°			In.
10	29 48	—0 34	74	56.0	18	63 0	+ 0 8	58.2	84	S. : S.E	0 56
11	29.61	—0 21	71	52.5	19.0	61.7	— 0 6	52 9	73	S.	0 05
12	29 75	—0 07	69	0 56	5 12	5 61	6 — 0 8	58 4	89	W. : W. SW.	0.15
13	29 71	—0 11	82	58.0	24	68.0	+ 6 4	0.3	74	S. : S.W.	0.00
14	29 82	—0 02	73	0 54	5 18	5 62	7 + 0 1	54	74	W. : S.W.	0.00
15	29 72	—0 0.	71	57	0 14	0 03	1 + 0.4	57 0	83	W.	0.02
16	29 54	—0.27	70	56.0	14	0 61	0 — 0 8	55 5	79	W.	0.11
Mean	29.66	—0 16	72	55 8	17 1	63.3	+ 0.8	56.8	79	W.	0 89

July 10.—Heavy rain from 8.10 A.M. till 8 AM. Fine day. Rain from 5 P.M. to 7 P.M.
- - 11.—Fine day and bright at times. Fine night, nearly overcast.
— 12.—Slight rain falling nearly all day. Fine clear night.
— 13.—Very fine day and night.
— 14.—Fine bright morning. Dull afternoon and night.
— 15.—Slight rain falling in morning. Dull afternoon and night.
— 16.—Rain falling in morning, fine and bright from 3 P.M. Fine clear night.

LONDON : *Atmospheric Pressure.*—During the week ending July 12, the reading of the barometer at the level of the sea increased from 29.98 inches at the beginning of the week to 30.02 inches by 9 A.M. on the 7th, decreased to 29.88 inches by 3 P.M. on the 8th, increased to 29.91 inches by midnight on the same day, decreased to 29.62 inches by 3 P.M. on the 10th, increased to 29.98 inches by 3 P.M. on the 12th, and was 29.94 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.86 inches, being 0.19 inch lower than last week, and 0.13 inch below the average of the week.

Temperature. — The highest temperature in the shade in the week was 84°, on the 8th and 9th ; the highest on the 12th was 69°. The mean of the seven high day temperatures was 75°.9.

The lowest temperature was 52°.5, on the 11th ; on the 9th the lowest temperature was 62°.5. The mean of the seven low night temperatures was 56°.5.

The greatest range of temperature in one day was 28°, on the 8th ; the smallest was 12°.5, on the 12th. The mean of the seven daily ranges was 19°.4.

The mean temperatures were—on the 6th, 61°.3 ; on the 7th, 64°.9 ; on the 8th, 70°.8 ; on the 9th,

70°.8; on the 10th, 74°; on the 11th, 61°.7; and on the 12th, 61°.6; of these the 6th, 11th, and 12th were below their averages by 0°.3, 0°.6, and 0°.8 respectively; the rest were above by 3°.1, 8°.8, 8°.7, and 0°.8, respectively.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 139°, on the 8th. The mean of the seven readings was 122°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 47°, on the 11th. The mean of the seven readings was 50°.1.

Rain.—Rain fell on four days, to the amount of 0.89 inch, of which 0.56 inch fell on the 10th.

ENGLAND: *Temperature.*—During the week ending July 12 the highest temperatures were 85°.9, at Cambridge, 84°, at Blackheath, 82°.4 at Nottingham; the highest at Sunderland was 70°, at Plymouth 71°.2, and at Bolton 71°.7. The general mean was 76°.5.

The lowest temperatures in the week were 43° at Truro, 46°.2 at Wolverhampton, 47°.3 at Plymouth; the lowest at Brighton was 56°, at Bradford 53°.6, at Preston 53°.5. The general mean was 50°.7.

The greatest ranges were 35°.9 at Cambridge, 32°.3 at Nottingham, 31°.5 at Blackheath; the smallest ranges were 18° at Sunderland, 21° at Bradford, 21°.8 at Brighton. The general mean was 25°.8.

The mean of the seven high day temperatures was highest at Cambridge, 78°.2, at Blackheath 75°.9, at Brighton 74°.2; and was lowest at Sunderland, 66°.2, at Plymouth 68°.3, and at Bristol 68°.5. The general mean was 71°.4.

The mean of the seven low night temperatures was highest at Preston, 59°.1, at Brighton 57°.5, at Bradford 57°.2; and was lowest at Truro, 51°, at Wolverhampton 52°.4, at Plymouth 53°.9. The general mean was 55°.3.

The mean daily range was greatest at Cambridge, 24°.1, at Nottingham 20°.9, at Blackheath 19°.4; and was least at Sunderland, 11°, at Preston 11°.8, at Bradford 12°.8. The general mean was 16°.1.

The mean temperature was highest at Cambridge, 64°.2, at Brighton 63°.9, at Nottingham and Preston 63°.1; and was lowest at Truro, 58°.4, at Sunderland 58°.8, at Plymouth 59°.2. The general mean was 61°.5.

Rain.—The largest fall was 3.59 inches, at Leeds, of which 1.72 inches fell on the 10th, and 1.09 inch fell on the 11th; 2.59 inches at Bradford, 2.44 inches at Nottingham; the smallest fall was 0.54 inch at Bristol, 0.60 inch at Wolverhampton, 0.66 inch at Plymouth. The general mean fall was 1.52 inch.

SCOTLAND: *Temperature.*—During the week ending July 12, the highest temperature was 75°.6, at Edinburgh; at Aberdeen the highest was 69°. The general mean was 72°.9.

The lowest temperature in the week was 50°.5, at Glasgow, Dundee, and Aberdeen; at Greenock the lowest temperature reached 53°. The general mean was 51°.3.

The mean temperature was highest at Glasgow, 62°.6, and lowest at Edinburgh, 59°.9. The general mean was 61°.2.

Rain.—The largest fall was 4.74 inches, at Greenock; and the smallest fall was 1.04 inch, at Aberdeen. The general mean was 2.98 inches.

JAMES GLAISHER, F.R.S.

Obituary.

AUGUSTUS FENDLER died on the island of Trinidad, November 27, 1883, at the age of seventy-one. This we learn only at the present date, by a memorandum which was found on the table of the lamented Dr. Engelmann, who was so soon to follow him. Fendler was born in Eastern Prussia, somewhere near Königsberg; received a good ordinary education; came to this country (United States), not far from the year 1840; was selected by Dr. Engelmann and the present writer to make a botanical collection in the northern part of New Mexico on the occasion of the movement of the United States troops to Sante Fé in 1846. Afterwards (1856-7) he, with a younger brother, migrated to Tovar, a German settlement in the mountains of Venezuela, where he made a large collection of dried plants, and later a small one on the Isthmus. He then returned to his native country, but after a year or two his longing for botanical exploration, and for a milder climate, took him to Trinidad, where for a time he botanised with his old zeal and assiduity. Fendler was a close and accurate observer, a capital collector and specimen-maker, very painstaking and methodical, and his excellent distributed collections are classical, especially the first one, a large part of which was early named and published in the *Plantæ Fendlerianæ Novo-Mexicanæ*. It was the first collection made in that part of the country. He is commemorated in a beautiful and quite peculiar Saxifragaceous shrub, indigenous to New Mexico and Texas (Fendlera rupicola), and numerous species of his own discovery bear his name. He was very retiring and shy in habit, of refined bearing, and of a scientific turn of mind in other lines than that of his chosen pursuit of botany. He kept up meteorological observations during most of his life, and he was very much interested in speculative physics. In the year 1874 he published at Wilmington, Delaware, where he then resided, at his own expense—and, we suppose, with small returns—a well-written treatise (of 154 pages, 8vo) on *The Mechanism of the Universe, and its Primary Effort-exerting Powers; the Nature of Forces and the Constitution of Matter, with Remarks on the Essence and Attributes of the All-Intelligent.* He was one of the ingenious race of paradoxers, and it may be left to the future De Morgan to characterise his work. He will certainly be lastingly and well remembered in botany. *A. G., in "Botanical Gazette."*

Answers to Correspondents.

BOOKS: *G. P.* No book that we know of deals with both the subjects you mention.

CARPET BEDDING: *C. P. G.* We do not know, not having seen them all yet.

DEFORMED LILY: *E. Morse.* The old so-called Double White Lily, once common in the gardens of the curious.

DISEASES OF MUSHROOMS. — By an inadvertence — attributed by the artist to our proximity to the miasma of Mud-salad Market—two illustrations relating to diseases of Mushrooms were inserted in an article relating solely to disease of the Potato. We are obliged to the artist for his extenuation of our oversight, which shall be further corrected in a subsequent issue.

GRAPES: *S. Cooper.* We answered the same question last week (see p. 59).

INSECTS: *Y. C.* We found about a dozen aphides crawling about the box containing the sprig of Arborvitæ, and also a few of the cast skins of the pupæ of a small frog-hopper stuck by the viscid secretion on the discoloured part of the foliage. Syringe with soapsuds and gas-tar water, or tobacco-water, or parrafin-water. *I. O. W.—C. M.* We cannot say what it is without seeing it.—*T. Worth.* It is impossible to tell what the insect is while in the chrysalis state.

NAMES OF PLANTS: *C. B. P.* Hibiscus sinensis.—*Dr. Sankey.* Thalictrum flavum (Meadow Rue), as near as we can tell from the bit sent. — *J. Harrison.* Drosera rotundifolia.—*D. D.* 1, Sparganium ramosum; 2, Senecio Jacobæa; 3, Œnanthe crocata; 4, Caucalis infesta; 5, Alisma Plantago; 6, Scrophularia aquatica.—*J. Hibberd.* A very good variety of Cattleya Mossiæ, bearing no varietal name, so far as we know; and a poor pale variety of Odontoglossum vexillarium. — *John Stewart & Sons.* Lilium Martagon.—*Sutton & Sons.* Periploca græca.—*W. Irvine.* Allamanda Schotti Hendersoni.—*H. G. Jones.* The Yucca is probably Y. gloriosa, but we cannot tell for certain from a single leaf. The Rose is the old York and Lancaster.—*John Kitley.* 1, Dictamnus Fraxinella, the white variety; 2, Bupleurum graminifolium. —*G. P.* We think it is the yellow form of Lilium concolor, but are not certain of its identity.—*H. V.* Indigofera decora, Japan.—*W. E. Gumbleton.* Adenocarpus foliolosus, and, perhaps, Cephalaria procera.—*C. H. P.* Specimens too scrappy for determination: send better.—*E. Pond.* Lathyrus cicera.—*V. B.* Trifolium arvense, Festuca ovina var.; we cannot name the other fragments, send better.—*X. Y. Z.* Helichrysum rosmarinifolium. —*F. W. B.* Linaria triphylla, Erigeron multiradiatus, Lathyrus tuberosus.—*M. P. B.* 1, Agrostis vulgaris; 2, Trisetum flavescens; 3, Festuca duriuscula?; 4, Poa pratensis; 5, Lolium perenne; 6, Cynosurus cristata. Why send such scraps?

ORCHIDS: *R. Young.* No. 1 we believe to be Cattleya Gaskelliana; 2, Lælia grandis; 3, Lycaste Skinneri, a pale-coloured variety; 4, Dendrobium Bensoniæ; 5, Miltonia Regnelli, a good variety; 6, Chysis lævis.

PEA, "THE SATISFACTION:" *J. Smith.* Your Pea does not seem to us sufficiently distinct from others already in cultivation, and we would advise you to send it to Chiswick next season, for trial, before sending it out.

PLANTAINS: *G. J.* Cut them off below the surface, and drop a small quantity of vitriol on the crown.

RASPBERRY: *J. C. & Co.* The sample received does not bear out the laudatory character given to the variety by your client. If it does not produce finer fruit than those before us, it is not, in our opinion, "the very best and finest Raspberry in existence."

STRAWBERRY: *Leirion.* Sir Joseph Paxton, largely grown in the London market gardens, and deservedly so.

TUBEROSES: *Countesthorpe.* They will not force well a second time.

VEGETABLES: *Vegetarian.* All vegetables contain more or less nitrogen, especially in their seeds. The Pulses are especially rich, and also the fungi.

VINES CRACKING: *H. G. Jones.* You do not say which variety it is, but it looks like Madresfield Court, which is much subject to cracking. It is due to irregular growth in the plant, but we cannot explain exactly how that may be brought about.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

COMMUNICATIONS RECEIVED: J. T. R.—P. C. T. S W.—M. P. B. H. W.—E. M.—G. B.—C. Mooney.—G. S. B. —W. V.—P. L. S.—T. B.—J. D. & Sons (all in good time). T. W.—W. Kershaw.—J. C.—D. J.—H G.—W. E. G.—C. P.—W. B.—J. T. B.—M. H.—M. D.—D. T. F.—J. H.

Markets.

COVENT GARDEN, July 17.

BUSINESS in soft fruit has somewhat improved, the trade being well set, but general business is getting quiet. Peaches and Nectarines are lower, as also Pines. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve ..	7 0	12 0	Lemons, per case..	10 0	14 0
Currants, black, per ½-sieve	3 6	4 0	Melons, each ..	2 6	4 0
— red, ½-sieve ..	3 6	5 0	Pine-apples, Eng., lb.	2 0	3 0
Figs, per dozen ..	2 0	3 0	— St. Michael's, each	2 0	5 0
Grapes, per lb. ..	1 6	3 0	Strawberries, per lb.	0 4	1 0
			Peaches, per doz. ..	2 0	12 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	5 0	Horse Radish, bund.	3 0	4 0
Asparagus, English, per 100	4 0	8 0	Lettuces, Cabbage, per dozen	1 6	..
Aubergines, each ..	0 4	..	— Cos, each ..	0 2	..
Beans, French, p. 100	1 6	..	Marrows, each ..	0 6	..
Beet, per doz. ..	1 0	..	Mint, green, bunch..	0 6	..
Cabbages, per doz..	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun. ..	0 8	..	Onions, per bunch ..	0 9	..
— New French, per bunch	1 3	..	— Spring, per bun.	0 0	..
Cauliflowers, English, dozen.. ..	2 0	3 0	Parsley, per bunch..	0 9	..
Celery, per bundle..	1 6	2 6	Peas, English, quart	1 0	..
Cucumbers, each ..	0 6	1 0	Radishes, per doz. ..	1 6	..
Endive, French, per dozen	2 0	..	Rhubarb, per bund.	0 4	0 6
Garlic, per lb. ..	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch ..	0 2	0 4	Spinach, per strike..	3 0	..
			Tomatos, per lb. ..	1 0	..
			Turnips, new, bun...	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £7 to £9 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Fuchsias, per doz. ..	4 0	12 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Heliotrope, doz. ..	4 0	9 0
— (common), dozen	6 0	12 0	Hydrangea, per doz.	9 0	18 0
Begonias, per doz. ..	4 0	12 0	— paniculata, doz.	18 0	36 0
Calceolarias, per doz.	4 0	9 0	Lilium longiflorum, per dozen ..	24 0	36 0
Cockscombs, doz. ..	3 0	6 0	— lancifolium, doz.	9 0	18 0
Cyperus, per dozen	4 0	12 0	Marguerite Daisy, per dozen	8 0	18 0
Dracæna term. doz...	30 0	60 0	Mignonette, per doz	4 0	6 0
— viridis, per doz..	12 0	24 0	Myrtles, per doz. ..	6 0	12 0
Erica, various, doz.	12 0	48 0	Palms in var., each	2 6	21 0
Euonymus, various, per dozen	9 0	18 0	Pelargoniums (show) per dozen	6 0	18 0
Evergreens, in var., per doze	6 0	24 0	— scarlet, per doz ..	3 0	9 0
Ferns, in var., dozen	4 0	18 0	Petunias, per dozen	6 0	12 0
Ficus elastica, each	1 6	7 0	Rhodanthes, p. dozen	6 0	9 0
Foliage Plants, various, each	2 0	10 0	Spiræa, per dozen ..	8 0	12 0
			Spiræa palmata, doz.	18 0	30 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Mignonette, 12 bun.	1 6	6 0
Arum Lilies, 12 blms.	3 0	6 0	Pelargoniums, per 12 sprays	0 6	1 0
Bouvardias, per bun.	0 9	1 0	Pinks, various, 12 bunches	2 0	6 0
Calceolaria, 12 sprays	0 6	1 0	Primula, double, bun.	1 0	1 6
Carnations, 12 bun.	2 0	6 0	Pyrethurm, 12 bun.	2 0	6 0
Cornflower, 12 bun..	2 0	4 0	Rhodanthes, 12 bun.	6 0	12 0
Eschscholtzia, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	4 0
Eucharis, per doz. ..	2 0	6 0	— (outdoor), 12 bun.	3 0	9 0
Forget-me-not, 12 bunches	2 0	6 0	— coloured, doz. ..	2 0	0 0
Gardenias, 12 blms..	3 0	6 0	Stephanotis, 12 spr.	2 0	4 0
Gladiolus, various, 12 bunches ..	2 0	9 0	Stocks, 12 bunches ..	3 0	6 0
Heliotropes, 12 sp. ..	0 6	1 0	Sweet Peas, 12 bun.	1 6	4 0
Iris, various, 12 bun.	3 0	12 0	Sweet Sultan, 12 bun.	2 0	6 0
Lapageria, white, 12 blooms	3 0	6 0	Tropæolum, 12 bun.	1 6	3 0
— red, 12 blooms..	1 0	3 0	Tuberoses, per doz..	0 6	1 6
Marguerites, 12 bun.	3 0	6 0	White Jasmine, bun.	0 6	1 0

SEEDS.

LONDON: *July 16.*—There was the usual Wednesday attendance on the seed market to-day. The new French Trifolium is both good and cheap. New English Rape seed is now offering; the quality is satisfactory and the demand fair. Mustard realises former terms. There is nothing doing in Clover seeds. In new Rye-grass and new Trefoil not much business has yet been transacted. Canary seed continues cheap. Hemp seed is scarce and dear. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

Government Stock.—Consols closed on Monday at 100$\frac{7}{16}$ to 100$\frac{9}{16}$ for delivery, and 100$\frac{1}{2}$ to 100$\frac{5}{8}$ for the account. Tuesday's figures were 100$\frac{1}{2}$ to 100$\frac{5}{8}$ for delivery, and 100$\frac{7}{16}$ to 100$\frac{1}{2}$ for the account. Wednesday's closing quotations were 100$\frac{5}{16}$ to 100$\frac{1}{2}$ for both delivery and account. Thursday's final figures were 100$\frac{1}{2}$ to 100$\frac{5}{8}$ for both delivery and account.

To the Trade.
NEW CABBAGE SEEDS.

H AND F. SHARPE are now offering their fine selected stocks of CABBAGE SEEDS, which comprise the following varieties, viz. :—

Early Dwarf York	Early Emperor
Early Large York	Early Sugarloaf
Daniels' Defiance	Early Oxheart
Early Nonpareil	Robinson's Champion Drumhead
Early Rainham	Shaw's Dwarf Drumhead
Early Enfield Market	Flat Dutch
Manchester Market	
Early Battersea	

Seed Growing Establishment, Wisbech.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s*; 4-bushel bags, *4d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s*; sacks, *4d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, *4d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, *4d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—H. G. SMYTH, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*: 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons. WALKER AND CO., Farnborough Station, Hants.

BEESON'S MANURE.

This is the Manure now used by the leading Nurserymen and Rose Growers. **Price, 12s. per cwt.**, carriage paid for Cash. In Sealed Bags, thoroughly air-tight. Also in 1*s.* Tins; per Parcels Post, 1*s.* 6*d.* It will keep for any length of time, and is the best Manure for all purposes in the Flower, Fruit, or Kitchen Garden. References, Directions for Use, &c., on application to

W. H. Beeson, Carbrook Bone Mills, Sheffield.

THE HORTICULTURAL SUPPLY ASSOCIATION is the cheapest and best House in the Trade for really good LIGHT FIBROUS PEAT. Having purchased 2000 tons of the very best quality, the Association is prepared to make special offers to the Trade, for quantities by the Yard or Ton in truckloads. Terms on application. In sample bags, 4*s.* 6*d.* per bag. Very best, selected for Orchids, 6*s.* per bag; twenty bags for 5*s.* per bag. BLACK FIBROUS PEAT, 4*s.* per bag; five bags for 17*s.* 6*d.*
Also the best and cheapest house for LOAM, SAND (coarse and fine), LEAF MOULD, COCOA FIBRE, MATS, RAFFIA, CORK, GUANO (Real Peruvian), STICKS, LABELS, BOUQUET WIRE, and every GARDEN REQUISITE.
FIBRE, 3*d.* per bushel; per truck of 2 tons, 35*s.* The best coarse SILVER SAND, 1*s.* 6*d.* per bushel; 12*s.* 6*d.* per ½ ton; 22*s.* per ton.
BEST YELLOW BETCHWORTH LOAM, 1*s.* per bushel.
LEAF MOULD, 1*s.* 6*d.* per bushel.
PEAT MOULD, 1*s.* per bushel.
COMPOST for Potting or for Garden, 1*s.* per bushel.
SPHAGNUM MOSS, 7*s.* 6*d.* per bag.
Our speciality TOBACCO CLOTH and PAPER.
Universal MANURE. The best yet offered—a very powerful Fertiliser, 13*s.* per cwt.
PERUVIAN GUANO, as imported, 18*s.* per cwt.; 56 lb., 11*s.*; 7 lb., 2*s.* 6*d.* All bags *4d.* each.
Terms, Cash with Order, or Trade reference.
The HORTICULTURAL SUPPLY ASSOCIATION, Station Road, Elephant and Castle, S.E.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25*s.*, free on to the following rails:—Great Western, Great Northern, Great Eastern, London and North-Western, and Midland, other lines 30*s.*, in sacks 1*s.*; 30 sacks £1 5*s.*; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

COCOA-NUT FIBRE REFUSE, best quality, as supplied to the principal Nurserymen and Nobility, 1*s.* per Bag; 15 Bags, 14*s.*; 30 Bags, 25*s.*, sent to all parts; Truckload, 25*s.*, free to rail. Best LOAM and PEAT. A. FOULON, 32, St. Mary Axe, London, E.C.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1*s.* 3*d.* per sack; 10 for 12*s.*, 15 for 17*s.*, 30 for 30*s.*; all sacks included. Trucks (loose), 33*s.* Selected Brown Fibrous Peat, 5*s.* per sack; 5 for 22*s.* 6*d.* Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; sacks 4*d.* each. Coarse Silver Sand, 1*s.* 6*d.* per bushel, 25*s.* per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1*s.* per bushel. Chemical MANURES. Fresh Sphagnum, 6*s.* per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8*d.* per lb.; Specialité Paper, imported solely by us, 10*d.* per lb., 28 lb. 21*s.* Shading materials of all kinds. Write for Price LIST.—W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.



HUGHES' APHICIDE

1/6 Post Free 1s. 8d

Enables the operator to apply the Insecticide underneath the leaves, the superfluous liquid falling on the upper surface while descending

One to four teaspoonsful of the Fir Tree Oil to a pint of soft water will answer for all insects on plants. For further directions see label on bottle.

E. GRIFFITHS HUGHES, Operative Chemist,
VICTORIA STREET, MANCHESTER.

FIR TREE OIL INSECTICIDE (Soluble in Water)

Effectually clears all Insects and Parasites from the Roots or Foliage of Trees and Plants. Kills all Vegetable Grubs, Turnip Fly, &c. Cures Mildew and Blight. Clears Grapes from Mealy Bug, &c., and makes a good Winter Dressing. Of all Seedsmen and Chemists, 1/6, 2/6, 4/6 a bottle. Per gallon 12/6, or less in larger quantities. *A Treatise on "Fir Tree Oil," and its application, sent free on receipt of address, by the Manufacturer*, E. GRIFFITHS HUGHES, MANCHESTER. Wholesale from HOOPER & Co.; CORRY, SOPER, FOWLER and Co.; C. E. OSMAN & Co., and from all the London Seed Merchants and Wholesale Patent Medicine Houses.

FOR GLASS HOUSES. **HUGHES' GREEN SHADING.**

Convenient, Inexpensive, Easily applied, Lasts all the Summer, and can then be easily washed off. 1s., post 1/3.

For Fixing Bloom in Azaleas, &c., and for Cut Flowers. **HUGHES' FLORAL CEMENT.**

A great boon to Florists and all lovers of Flowers. Dries instantly. Sold in bottles, 1s. & 2s. Per post, 3d. extra.

HUGHES' STYPTIC

For Preventing Vines Bleeding after Pruning.
Very effectual in preventing the flow of sap in Vines being wasted. In bottles, 1/6 and 2/6. Per post, 3d. extra.

For Destroying Beetles, Cockroaches, Crickets, Bugs, Fleas, Mosquitos, &c. **HUGHES' TROPICAL BEETLE POWDER**

Most effectual in Greenhouses,—for Animals and Bed Clothing. Price 6d., 1s. & 2s. 6d. Per post, 3d. extra.

A Treatise on FIR TREE OIL as an Insecticide, and on the uses and application of the above preparations sent POST FREE, on receipt of address, by

E. GRIFFITHS HUGHES, *OPERATIVE CHEMIST,*
VICTORIA & CATEATON STREET, MANCHESTER.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens and Conservatories, supplied to Nurserymen and Seedsmen by WILLIAM RANKIN AND SONS, 10, Carlton Place, Glasgow; and at Lisbon, Portugal.

First Arrival of New Archangel Mats this Season.
J. BLACKBURN AND SONS are prepared to Sell now at lowest prices. Particulars on application at 4 and 5, Wormwood Street, E.C.

BLAKE'S PATENT "SIMPLEX"
FOLDING PARCEL POST BOX,
Also Registered Cut Flower and Parcel Post Boxes.

For Sizes and Price apply to the Sole Manufacturers—
BLAKE & MACKENZIE, SCHOOL LANE, LIVERPOOL.

BLAKE AND MACKENZIE'S WATERPROOF and other LABELS, for Nursery and Greenhouse purposes; also the WILLESDEN WEATHERPROOF SCRYM CLOTH for Shading. Pictorial, Flower, and Vegetable Seed Pockets, and other Seedsmen's requisites.
Address: School Lane, Liverpool.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c.—TANNED NETTING for protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 2*d.* per yard, or 100 yards, 16*s.*; 4 yards wide, 4*d.* per yard, or 50 yards, 16*s.* NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 6*d.* per yard; 4 yards wide, 1*s.* per yard; ¾-inch mesh, 4 yards wide, 1*s.* 6*d.* per yard. TIFFANY, 5*s.* and 6*s.* per piece of 20 yards.—EATON AND DELLER, 6 and 7, Crooked Lane, London Bridge, E.C.

INDIAN MUSLIN, for Shading Greenhouses, Protecting Seed-beds, &c., 100 yards (25 inches wide) for 10*s.*, delivered at Burnley Station; or 85 yards for 10*s.*, delivered free per Parcels Post. This is a perfectly pure Cotton Muslin, very useful for Curtains, Blinds, Draperies. Cream Colour. Postal Order to be sent with each order. Send stamped envelope for Pattern.
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GARDEN NETTING.

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MANUFACTURER OF HEXAGON AND CHISWICK GARDEN NETS.

Warranted to Protect Bloom from Frost, Winds, Hail, &c.; and Fruit from Birds, Wasps, &c.

Pattern and Prices Free per Post.
Address, S. A. SANDS,
20, CLUMBER STREET, NOTTINGHAM.

TANNED NETTING,
Specially selected for Garden Use.
2 yards wide, 1½*d.*, and 4 yards wide, 3*d.* per yard run.
Scrim, Hessian, and **Tiffany,** for protecting Fruit Trees and shading Greenhouses, from 2½*d.* per yard and upwards
Russia Mats, Raffia Fibre, Tobacco Paper and Cloth, Cocoa-nut Fibre Refuse, and other Sundries at the lowest possible prices
CATALOGUE post-free on application.
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TIFFANY and SCRIM for Protecting Fruit Trees and Greenhouse Shading, from 2*d* per yard. TANNED NETTING in all widths at wholesale prices. RUSSIAN MATS of every description at reduced prices, and RAFFIA FIBRE. Price List on application at
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PURE WOOD CHARCOAL
FOR
VINE BORDERS, FRUIT TREES, STRAWBERRIES, ROSES, FLOWER BEDS, POTTING PURPOSES,
AND GENERAL HORTICULTURAL PURPOSES.
HIRST, BROOKE, AND HIRST, Manufacturers, Leeds, Yorkshire.

SILVER SAND, fine and coarse, 24*s.* and 40*s.* per truck of 4 tons. PEAT, 40*s.* and 50*s.* per truck of 10 cubic yards. LOAM, 40*s.* and 50*s.* per truck of 6 cubic yards. SILVER SAND, PEAT, and LOAM, in sacks, at moderate prices.
W. SHORT, Horticultural Co., Midhurst, Sussex.

Important Saving of Coal.
THE NEW HORIZONTAL TUBULAR BOILER, "RED ROSE," will be at the Newcastle-on-Tyne Horticultural Show, July 23, for the inspection of the Judges. J. WITHERSPOON, of the Red Rose Vineries, Chester-le-Street (where the Boiler may be seen at work), for years has been studying the wants of Gardeners and Nurserymen, and now their inspection, and the inspection of all interested in Economic and Efficient Heating Power, is respectfully invited. No brickwork, no soot-stoppings, can be set up, and, if necessary, any portion can be replaced, or taken out entirely, by any person, in a few minutes. The Boiler, Red Rose, with power extended at pleasure, is the long hoped for.

HOSE—HOSE—HOSE.

PATENT RED-RUBBER GARDEN HOSE.

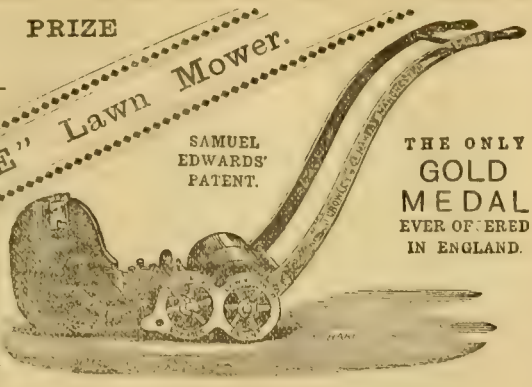
Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.
A correspondent writes:—"I have had a length of your Red Rubber Hose in use nine years, and it is now as good as ever."
Private Customers Supplied at Trade Prices.

Sample and Price of
MERRYWEATHER & SONS,
Manufacturers, 63, Long Acre, London, W.C.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

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AT EACH OF THE
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The "INVINCIBLE" Lawn Mower.



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ALSO FOR PONY and HORSE-POWER.

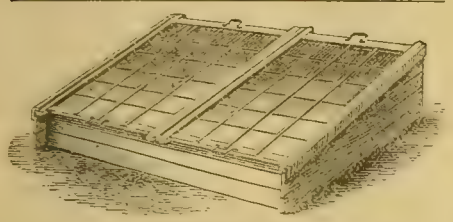
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LASCELLES' NEW ROCKWORK material in various colours.
Samples can be seen, and prices obtained at 121, Bunhill Row, and 35, Poultry, Cheapside, E.C.
Illustrated Lists of Wooden Buildings, Greenhouses and Conservatories, and Concrete Slabs for walls, paths, and stages, sent post-free on application.



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R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices, delivered to any station in England :—	£ s. d.
2-light frame, 8 feet by 6 feet } Packing Cases free	3 10 0
3-light frame, 12 feet by 6 feet } Packing Cases free	5 5 0
6-light frame, 24 feet by 6 feet } Packing Cases free	10 0 0

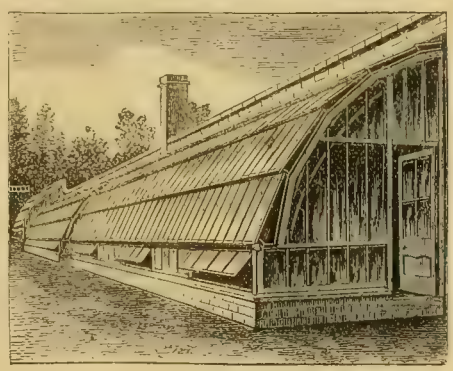
The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.
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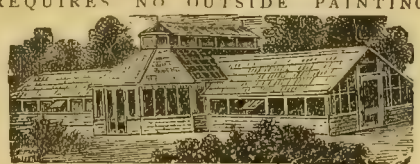
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Horticultural Builders,
Patentees and Sole Manufacturers of the Gardener's and other Portable Frames,
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Estimates given for every kind of Horticultural Buildings.

Price List on application to
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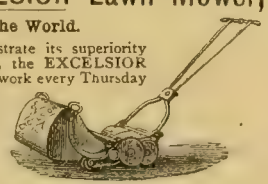
HELLIWELL'S PATENT SYSTEM OF GLAZING WITHOUT PUTTY
REQUIRES NO OUTSIDE PAINTING.



Adopted by His Royal Highness the Prince of Wales.
Banksian Medal of Royal Horticultural Society.
OLD ROOFS RE-GLAZED. OLD WOODWORK COVERED.
Plans and Estimates free of charge from
T. W. HELLIWELL,
Royal Horticultural Works, Brighouse, Yorkshire; and 8, Victoria Chambers, Westminster, S.W.

Patent EXCELSIOR Lawn Mower,
the Best in the World.

To practically demonstrate its superiority over all other Machines, the EXCELSIOR will be shown in actual work every Thursday and Saturday, on the Crystal Palace Lawn, near the steps leading to the grounds. Gardeners and Amateurs are invited to test its cutting powers on the grass.



MAKERS :—
CHADBORN & COLDWELL MFG. CO.,
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TEN SILVER AWARDED MEDALS TO
JOHN MATTHEWS, THE ROYAL POTTERY, WESTON-SUPER-MARE. Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS of superior quality from 1 to 30 inches diameter, stand the frosts, and seldom turn green; ORCHID, FERN, SEED and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price LIST post-free. Sheet of Designs, 6d. Book of Designs, 1s.



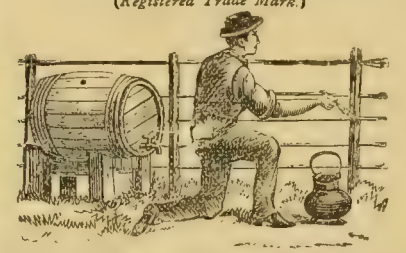
Novelty!
SCHMIDT'S
Patent
HYACINTH GLASSES,

Removing all difficulty about cleaning the glasses and renewing the water. Prices and further description on application.

J. C. SCHMIDT,
Erfurt,
Germany.

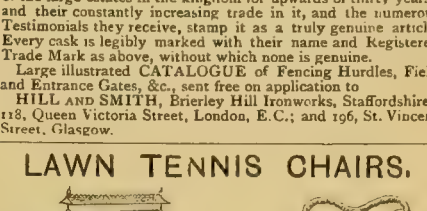
FOR SALE.—A GENTLEMAN wishing to dispose of a SHANKS' 36-inch LAWN MOWER, with Patent Delivery (as it is too large for his work), is open to an offer for same.
A. B, W. Drummond & Sons, 58, Dawson Street, Dublin.

Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH
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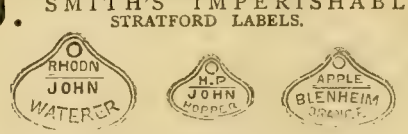
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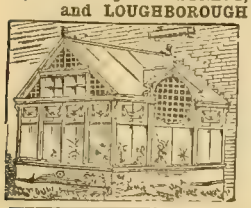
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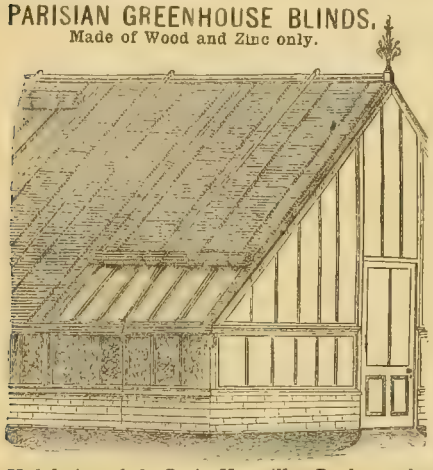
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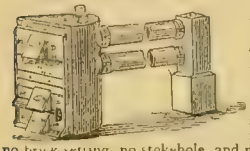
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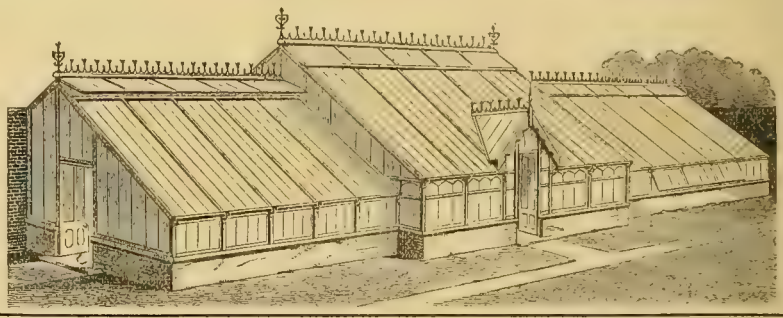
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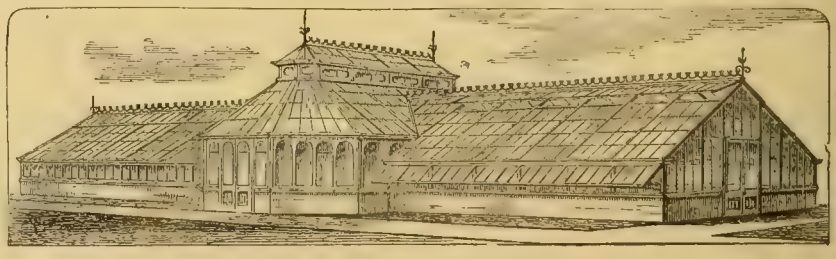
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, July 19, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 552.—Vol. XXII. { New Series. } SATURDAY, JULY 26, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. { Post-free, 5½d. }

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May be viewed the day prior to the Sale. Catalogues may be had of Mr. EBBAGE, the Gardener on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Dutch Bulbs.—Special Trade Sales.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have now fixed their SALES of DUTCH FLOWER ROOTS for the coming season. The FIRST AUCTION will take place on MONDAY, August 18. This and the three following Sales will consist of lots specially to suit the Trade and other extensive Buyers, and arrangements have been made for the supply of Roots of the best quality.

Catalogues will be sent regularly on application.

Thursday Next.—(Sale No. 6696.)

CYPRIPEDIUM LINDLEYANUM (Sir Robert Schomburgk). Rare importation. This very remarkable species was described as early as October, 1840, by Dr. Lindley. The stem is 2 feet high, paniculated. After a lapse of nearly half a century this fine Lindleyan plant has reached Mr. Sander's hands. Sent home by Mr. Seidl.

CATTLEYA MOSSIÆ, fine plants.

CATTLEYA MOSSIÆ CHIRGUENSIS, very distinct species.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, July 31, at half-past 12 o'Clock precisely, a rare importation of CYPRIPEDIUM LINDLEYANUM. The plants are in fine healthy condition. The Sale will include fine plants of CATTLEYA MOSSIÆ, CATTLEYA MOSSIÆ CHIRGUENSIS, and other valuable importations.

On view the morning of Sale, and Catalogues had.

Lælíopsis Domingensis.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 6, at half-past 12 o'Clock precisely, twelve good plants of the handsome LÆLIOPSIS DOMINGENSIS. This Orchid is extremely rare, only a few plants are known to exist.

On view the morning of Sale, and Catalogues had.

Chipperfield, Herts.

2 miles from King's Langley, 6½ miles from Watford, and 5½ miles from Rickmansworth.

FURNITURE and OUT-DOOR EFFECTS, including Greenhouses, 2 Market Carts, a capital Florist's covered Van, and a Chestnut Cob. On view.

To Florists, Nurserymen, Furniture Dealers, and Others.

MR. W. B. HALLETT (many years with Messrs. Oxenham) will SELL by AUCTION, on the Premises of Messrs. Lucking, close to Chipperfield Common, 2½ miles from King's Langley Station, on MONDAY NEXT, July 28, at 11 for 12 o'Clock, the

FURNITURE and OUTDOOR EFFECTS,

comprising Greenhouses, with heating appliances by Pegg; 5 capital Span Pit Lights, 2 Spring Market Carts, a Florist's Covered Van, a Chestnut Cob, Set of Harness, Chaff Cutting Machine, sundry Hurdles, lengths of Piping and Guttering, quantity of Horticultural Glass, Minton Tiles, Flower Pots, and other items, and the Household Furniture.

On view, and Catalogues on Premises, or forwarded on application to the Auctioneer, 11, Queen Victoria Street, E.C; and 278, Holloway Road, N. (Telephone Nos. 1609 and 7533.)

Hampton and Hanworth.

IMPORTANT SALE of LAND suitable for Florists and Nurserymen, together with a pair of well-built Cottage Residences.

MR. J. EMBLETON will SELL the above by AUCTION, at the "Lion" Hotel, Hampton, on TUESDAY, July 29, at 6 o'Clock in the evening.

Full particulars can be had from the Auctioneer, Mr. J. EMBLETON, Suffolk House, Hampton.

WANTED TO RENT, on moderate terms, a few Acres of NURSERY GROUND, or SMALL NURSERY, with Dwelling-house, near good town.

Apply, H. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Somerset.

To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD, by Private Contract, with early possession, the Old-established BUSINESS (of over 150 years and only changed hands three times) of a NURSERYMAN, SEEDSMAN, and FLORIST, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Princes Street, Yeovil.

The Merriott Nurseries comprise 27 acres of excellent Land, completely stocked with splendid young, valuable, and saleable Fruit; Coniferous, Forest, and Ornamental Trees and Shrubs; and well stocked Greenhouses, &c.

The Residence, Offices, Stabling, Manager's Villa, and Cottages, and a portion of the Nursery Grounds, are the proprietor's Freehold, and may be Purchased or taken on Lease.

The small Hendford Nursery is well stocked, and is provided with newly erected and conveniently-fitted Greenhouses, and other Erections adapted for the business. These Premises may also be Purchased or taken on Lease.

The age and state of health of the Proprietor alone induce him to retire, and he will be prepared to Sell on advantageous terms.

The Yeovil Branch Business could be taken separately if so desired, or the whole affair in its entirety, which would in the latter case afford an excellent opportunity for Partnership.

For further particulars and cards to view, apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or, to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.—June, 1884.

To Gardeners, Nurserymen, and Others.

FOR SALE, FRUIT HOUSES, containing over 4500 feet of Glass. A reasonable price will be accepted. For full particulars apply to

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TO LET, a large GARDEN, about 300 by 60 feet, fronting main road. Good business position. Suitable for a Nurseryman.

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Adiantum cuneatum, A. pubescens, Pteris argyrea, P. serrulata major, P. serrulata major cristata, P. cretica albo-lineata, P. hastata, Doryopteris palmata, Cyrtomium falcatum, 2s. 6d. per dozen, 16s. per 100; Gymnogramma peruviana, G. Wettenhalliana, Pteris cretica albo-lineata cristata, P. tricolor, 3s. per dozen, 20s. per 100. Packing included. Cash with order.

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Sow Now for Early Flowering in Spring.

ROEMER'S Superb Prize PANSY SEED.

☞ The best Pansy Seed in the World. ☜

FANCY VARIETIES, saved from named flowers, splendid, mixed, 10s. per ounce, 6d. per packet.

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FANCY and SHOW VARIETIES, fine, mixed, 3s. per ounce, 3d. per packet.

ASSORTMENT of 18 splendid distinct varieties, containing each 1 packet, 3s.

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GIGANTIC-FLOWERED SHOW VARIETIES, new and distinct, flowers up to 4 inches in diameter, 6s. per 1000 seeds, 1s. 6d. per packet.

My Pansy gained the First Prize at the Exhibition at Berlin, 1884.

For separate sorts see CATALOGUE, forwarded post-free on application.

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To the Trade only.

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YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.

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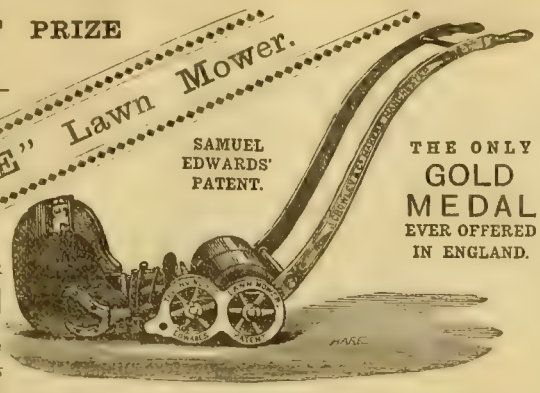
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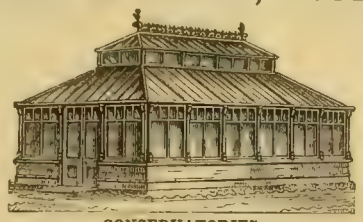
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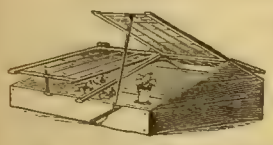


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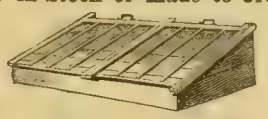


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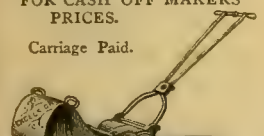
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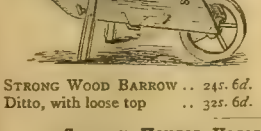


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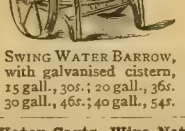
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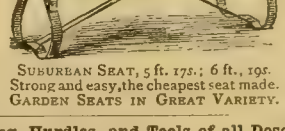
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Collections of 1 dozen, named, our Selection :—
Singles, A 42/-, B 36/-, C 30/-, D 24/-, E 18/-, F 12/-
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Collections unnamed, our Selection :—
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Singles, for bedding, M 40/-, N 30/-, O 24/- per 100.
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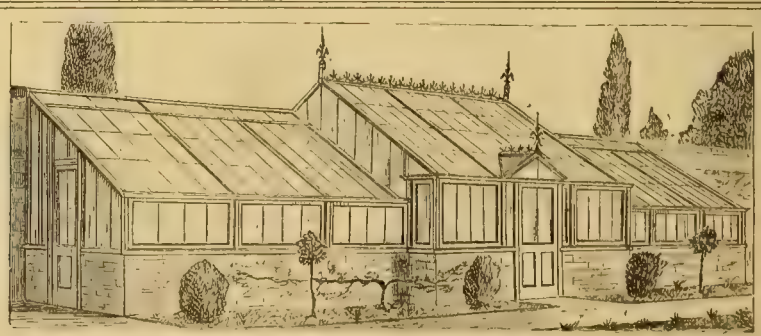
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THE

Gardeners' Chronicle.

SATURDAY, JULY 26, 1884.

THE POTATO CROP.

WE are enabled in our present issue to give a preliminary report as to the condition and prospects of the Potato crop in various parts of the kingdom, and, from all we hear, there cannot be much doubt that, when we are enabled to publish the larger series of reports which has already reached us that their general tenor will be the same.

From all sides we hear that the crop is likely to be a good one, the tubers will be abundant, though small, from the extraordinarily dry season we have gone through. For the same reason there is at present comparatively little disease. The fungus has indeed put in an appearance in various localities, having doubtless been planted in diseased sets, but so far the atmospheric and climatal conditions have not been favourable to its spread and development. The disease, instead of being general, occurs in isolated patches, often only on individual plants. It is needless to say how much good might be done now, when the mischief is thus isolated and small in amount, by at once uprooting the diseased plants and destroying them by burning, if possible; or, as that is a difficult matter in the case of fresh haulm and tubers, by burying them at a considerable depth and covering them with quick-lime. If near the sea, the diseased tubers and haulm might be thrown into the sea. All this may sound unpractical, and people of the do-nothing school will say either that it cannot be done, or that the trouble and expense will outweigh the advantage. Upon this point we join issue. We believe we have it in our power, especially in such a season as this, if not to stamp out the disease entirely, which is an impossibility, at least to very greatly reduce it, and if so, our duty is plain enough. To uproot the tubers and allow the haulm to lie about on the plots or fields, even for a day, is positively to court the development of the disease; to use the haulm as packing, as we see constantly done, is to favour the spread of the disease in about as successful a manner as could be adopted were that the object aimed at; and to give the tubers as food for pigs is scarcely less reprehensible. People who do not take ordinary care, and especially those who wilfully cause the spread of the disease in any of the manners indicated, are nothing more nor less than enemies to Society, and should be treated as such. Of course, our remarks apply more especially to the early varieties. As to the later crops we shall know more later on. Meanwhile the recent rains have had a tendency to favour the development of the disease, so that early lifting is more than ever desirable.

Growers are congratulating themselves that the recent rainfall is doing good by causing the tubers to swell, and thus produce a greater crop. If weight alone had to be considered no doubt there would be room for congratulation, but it is a question whether any increase in weight that takes place now (in the earlier varieties at least) is not chiefly an

increase in the amount of water in the tuber. It is not likely, speaking generally, that the amount of starch, of potash, and other ingredients which render the tuber so valuable as a food product will now be increased in proportion to the augmented amount of water. In the case of early ripened Potatos, whose maturity has been hastened by the hot, dry weather, the proportion of valuable ingredients is necessarily large. If water be added now it is more than likely that the insoluble starch will be converted into sugar, and that the tubers will begin to grow—to supertuberate, as the garden phrase has it, as in the illustration at fig. 27, p. 117. All such growth, being at the expense of the parent tuber, is so much sheer loss to the cultivator.

From practical observation for many years we are strongly of opinion that the disease may be reduced in amount, and we have often seen a cottager's little plot ruined by the neglect to pull up and destroy a single diseased plant immediately that it is seen; and we are convinced also that in some cases such a step has saved the greater part of the crop.

In the interests, therefore, especially of small growers, where the disease is so much more easily combated, we do earnestly urge the immediate destruction, where possible, of root and top, when disease occurs in isolated plants. On a large scale, from lack of co-operation among neighbouring growers, this is a more difficult but still not an impossible matter; but on a small scale it can be done, and the benefit to our poorer neighbours would in the aggregate be very large indeed.

New Garden Plants.

CRINUM (CODONOCRINUM) SANDERIANUM, *n. sp.**

This is a very distinct new Crinum, which has just been imported in a living state from Sierra Leone by Messrs. F. Sander & Co., of St. Albans. It is allied to C. zeylanicum, but is much smaller in bulb and leaf, with a few sessile flowers resembling those of its geographical neighbour, C. yuccæflorum, of which a figure will be found in the *Botanical Magazine*, at tab. 2121, under Herbert's name of Crinum Broussonetii. It is evident that Tropical Africa is the true headquarters of the genus. Bulb globose, 2 inches diameter, with brown membranous tunics, and a cylindrical neck under an inch in diameter, and 2—3 inches long. Leaves ensiform, thin in texture, 1—1½ foot long, 1—1½ inch broad, narrowed gradually from the middle to a long point, much undulated towards the broad, membranous, obscurely denticulated margins. Flowers 3—4 in an umbel, quite sessile, subtended by a pair of lanceolate-deltoid, green, spathe-valves, 3—4 inches long. Perianth with a curved cylindrical tube, 5—6 inches long, and a horizontal limb 4 inches long, with six permanently connivent, lanceolate, acuminate segments under an inch broad, with a conspicuous red keel. Stamens included, declinate. Anthers linear-oblong, ½ inch long. Style reaching to the tip of the perianth-segments. *J. G. Baker.*

EULOPHIA PULCHRA (*Lindl.*) DIVERGENS, *n. var.*

Such is the name I propose for a fresh variety kindly sent by Mr. W. Vanner, of Chislehurst, with a beautiful raceme. Its lip is much broader in front; going out into two diverging retuse shanks. The species would appear to vary much in the lip. A typical specimen of Du Petit Thouars himself I examined shows a totally distinct lip from that represented by the excellent author. Mr. W. Vanner kindly informs me that he received the plant under the name of Cymbidium rhodocharis. *H. G. Rchb. f.*

* *Crinum* (*Codonocrinum*) *Sanderianum*, n. sp. — Bulbo globoso pro genere parvo; foliis ensiformibus tenuibus glabris semi-pedalibus valde undulatis margine scariosis; umbellis paucifloris; floribus sessilibus; perianthii tubo cylindriato curvato 5—6 pollicari, limbi segmentis lanceolatis acuminatis tubo sesquibrevioribus dorso conspicuo rubro-vittatis.

CHENIES AND ITS CHERRIES.

Harrow to Chenies is not a far cry. The journey can be done afoot in a dozen miles, all pleasant going to the pedestrian who can appreciate the beauties of English landscape. As one approaches Chenies, the historical seat of the Russell family, there is a constant succession of charming vignettes. In spring time, about Easter, the Cherry orchards present a unique appearance, from the wonderful profusion of snow-white bloom. My route on a former occasion—last Good Friday—was through Pinner, rapidly growing in importance as the Metropolitan Extension approaches completion; Moor Park, with its fine old house, Italian gardens, and stately Cedars; and Rickmansworth, famous for the cultivation of Watercress. On a recent Saturday, when my object was to see the Cherry orchards in fruit, I took the train to Rickmansworth; from thence it is 4 miles only to Chenies. Turning to the right, about the middle of the village there is a pathway which leads through the park. Half way up on the verandah of a little "Mount Pleasant" I noticed a charming combination of colours—common enough it may be, but in this case especially attractive and worthy of note. It consisted of the Japanese Honeysuckle and Clematis Jackmanni. On the same trellis was C. rubella, not nearly so effective, however, nor so prodigal of bloom. Gloire de Dijon, by the way, is an excellent companion to Jackman's Clematis. Then there is a delightful walk of half a mile over the soft springy turf of the park, with its magnificent groves of Beeches drooping gracefully with the already browning mast, its picturesque old stag-headed edible Chestnuts, and its magnificent Limes, now musical with the pleasant humming of myriads of bees. Between the boles and beneath the spreading foliage, bitten off level by the browsing deer, one catches glimpses of the beautiful sylvan scenery around. There are several footpaths across the park, some only lately reopened. A defeated litigant in a case of fishing appealed to the inconvenient memories of two or three of the oldest inhabitants with regard to rights of way, and the result was that in place of closing the only path accessible to the public two other ancient bye-ways were discovered and re-opened. A group of fallow deer eye us with languid curiosity, and gradually retire from the neighbourhood of the inquisitive stranger. Mrs. Heman's charmingly descriptive lines occur to me as I watch their graceful movements:—

> "The stately homes of England,
> How beautiful they stand,
> Amid the tall ancestral trees
> O'er all the pleasant land.
> The deer across the greensward bound,
> 'Mid shade and sunny gleam,
> And the swan glides past us with the sound
> Of some refreshing stream."

There are some other picturesque accessories in the shape of a herd of Highland cattle—real Highlanders, no doubt—black, dun, and fawn colour, with long shaggy hair, fierce black eyes, and formidable horns; but they are out of place, apparently. One thinks of Peter Graham's pictures, but where are the lichened rocks, heather, and curling mists? A table-land, of which the park is a small portion, stretches hence to Chenies, 3 miles further on. From thence the road slopes to the valley of the Chess. Just below, as we emerge from the park gate, is Loudwater, for a time the seat of the first proprietor of the *Illustrated London News*. The paper of the *Illustrated* was manufactured at Loudwater, and the mills still give employment to numerous workpeople from the neighbouring villages. The material now employed in the manufacture is Esparto-grass. The estates of his Grace the Duke of Bedford stretch along both sides of the river as far as Latimers, the seat of Lord Chesham. On the left is The Cedars, the residence of Mr. Gilliat, of the Bank of England. The park is noted for its fine trees.

Chenies itself is a picturesque little village, standing near the edge of the chalk plateau where it suddenly dips to the valley of the Chess. The cottages are neat, roomy, and substantial; each has its garden of thriving bush fruits and vegetables, and a plot for flowers now at its summer best with clumps of orange and white Lilies, Roses, Stocks, Sweet Williams. Several of the cottage walls are covered with carefully trained Vines. In the centre of the village is a group of grand old Elms, and in the shade beneath them is a Gothic fountain. There are a church and school, of course, but the principal feature of interest is a wing of the fine old manor house with its tall spiral chimney-shafts and gabled roofs. It was built by the first Earl of Bedford on the site of an ancient castle. Judging from the remaining wing it must have been an imposing structure. The main attraction of the church is the famous mortuary chapel in which repose the effigies of the more famous of the Russells. The earliest tomb in the chapel is that of the Lady Anne, wife to John, Earl of Bedford, 1556. It is of elaborate workmanship the material being a beautiful pink-veined alabaster. The Russell chapel bears on a tablet the inscription, "This chapel is built by Anne, Countess of Bedford." There are some interesting brasses in the church; one of them represents a priest bearing a scroll in his hands praying for mercy on his soul. These interesting memorials of a bygone time are in excellent preservation, and readily accessible to the public on application to the matron at the manor-house. At the back of the latter there is a venerable Oak, dating, it is said, as far back as the Conquest. It is upwards of 32 feet in circumference, and hollow; its diameter, E. and W., is nearly twice that of N. and S. Some thirty years ago it exhibited signs of speedy dissolution, but some juvenile Hodge, in attempting to burn out a wasp's nest, charred the interior, and thus stopped the progress of decay. The old tree has since laid on huge excrescences of growth, which have given it a further lease of vigorous existence.

Another feature of interest to the visitor spending a few hours at Chenies is the charmingly clean and wholesome village inn, the only licensed house in the village. It would be a betrayal of confidence to mention the long list of famous men—poets, historians, pillars of the law—who make the "B." their headquarters while enjoying the privilege of his Grace's permission to fish in the Chess. But on this occasion a glance at the spotted beauties must suffice as they dimple the limpid waters of the sparkling Chess, or flash in the sunlight like golden goblets in a river of liquid pearl. Just a spray or two of Meadow Sweet and Forget-me-not, and a little bunch of golden King Cups, as souvenirs of a day I once spent here—thanks to the courtesy of his Grace—and, adieu!

The main purpose of my trip to Chenies was to gather some further information with regard to the Cherry orchards, which here and in the surrounding neighbourhood form a marked feature in the landscape, and an important item in the farmer's account. From Chipperfield on the one side, to Amersham, Chalfont, Beaconsfield, Croxley, and Sere Green, Cherries are grown rather extensively. There are a few White Hearts and Black Hearts, but a great majority of the plantations consist of a variety known in the locality by the name of "Croons"—this is the only spelling I could get, and the only plausible derivation was that it is a corruption of Bigarreau, called by the natives "Bigarroon." It is apparently a cross between the Black Heart and the common black, but larger and of a better quality than the latter. Most of the trees are from thirty to sixty years old, one I measured spread its branches over a circumference of 190 feet. The yield is uncertain, the last heavy crop was in '77, the wet July. The hucksters who bought the fruit, however, sustained a serious loss though it was sold here at 1*s.* per dozen pounds. Only a few hours of sunshine intervened between the showers, and the whole of the gathered crop was found next morning after gathering to be utterly unfit for use except as food for pigs. The present year is an entire failure, although the bloom in early April was in wonderful profusion. During May there were at least twelve nights in which the thermometer sank below 9°. "Cherries," said an old farm labourer who lives at Chenies, "have three dangers—there is the frosties, the blights, and the birds;" what is meant by blight is the attack of the black aphis, and a small beetle which bites into the newly set bloom or incipient fruit. Birds, however, are exceedingly troublesome, not only to the ripening fruit, but to the expanded bloom. Last spring one observed sheets of white blossoms—not separate petals—shed after the fruit was set, but entire blooms apparently bitten off by the keen scissors of the mischievous tom-tits, [for the sake of the tiny drop of honey secreted in the nectary. But granted that the bloom is late, unmolested by the feathered marauders, and uninjured by frosts—the silver fringes and tassels gradually disappear, and the falling petals disclose the tiny fruit which rapidly swells and reddens, and darkens into purple crimson. "Why,

sir," said my informant, "I heered a noise one July mornin', an' guess what it meant, an' run out; but it wer too late—there were sich a lot o' starlins' that I doon't suppose there was a Cherry apiece for 'em—millions, I should think; there wasn't one for me except on the ground." On further inquiry, as to this serious charge against our friend the starling, I found ample confirmation of his taste for Cherries, and the wanton mischief he commits in the orchards.

Notwithstanding all the vicissitudes to which Cherries are liable, especially when standing in the open unprotected, they are always worth growing. Some of the new varieties of Rivers are surprisingly large and beautiful, and, generally speaking, they are a handsome, an early, and a delicious fruit. The Morello is almost the only fruit that will come to perfection on a north wall, and nearly all the varieties of Cerasus are charmingly chaste and beautiful when in bloom. As a garden plant a Cherry tree is a huge Deutzia gracilis, but the pendent tassels of snowy bloom are, I think, more elegant and graceful still. "And," later on, some one suggests, "what of their beauty then?" Well, then, it is more a matter of taste perhaps. *T. W., Harrow.*

THE MAY ISLAND.*

The island of May, whose welcome light is well known to sailors visiting the ports of Leith or Dundee, is situated at the junction of the estuary of the Forth with the German Ocean. It has an area of about 143 square acres, and, although its breadth nowhere exceeds one-third of a mile, it is upwards of a mile in length.

The word "May" is probably to be referred to a Gothic root signifying "verdure," although others have attributed it to a Celtic root found in the name of an ancient tribe of Midlanders called the Mæotæ, who are said to have occupied the southern part of Scotland between the walls of Hadrian on the south and Antonine on the north, and who are supposed to have taken possession of the island at a very early time. But whatever the origin of the name may be, it is not until the reign of King Constantine (864—882) that the true dawn of history first breaks on the island. During this reign various missionaries are traditionally said to have arrived in Scotland for the purpose of introducing Christianity into its pagan domains. St. Adrian—who was popularly believed to have come from Hungary, but who may not improbably have been of Irish extraction—was at the head of one of these reforming bodies, and after labouring for some time among the Picts in the eastern parts of Scotland, he selected the island of May, from which he is reputed to have expelled many demons and monsters, as a place for retirement and private devotion. Here he probably lived for some time in comparative seclusion, but during the Danish invasions he was cruelly slaughtered in the year 872, and was buried on the island, where his stone coffin is still to be seen.

A lapse of more than two and a half centuries now follows, during which time no historical references of importance are to be met with in connection with this island; but, about the middle of the twelfth century, David I., influenced, it would seem, chiefly by the memory and sufferings of St. Adrian, founded a monastery thereon, and handed it over to the care of the Abbey of Reading, on the condition that this Abbey should maintain nine priests there to "celebrate divine service for the soul of the donor and for the souls of his predecessors and successors, Kings of Scotland."

This new monastery soon developed in its material resources. Gifts of land in various parts of Fifeshire and the Lothians were granted by David I. and his successors, Malcolm IV., William the Lion, and Alexander II., not a few of the nobles of the realm also giving contributions of land and other privileges, while the right to exact tithes from fishermen, who drew their nets near the island, as well as exemption from "can and toll" throughout the land, which had been granted to the monks by David I., were continued through several successive reigns.

Although, in connection with these their numerous temporal possessions, many controversies from time to time arose which were not unfrequently settled by commissioners appointed by the Pope, the monastery still continued to prosper so long as it remained under the jurisdiction of the house of Reading. In the year 1269, however, a very important transfer took place—the May Priory was sold by Robert de Burghgate, who was then Abbot of Reading, to William Wishart, Bishop of St. Andrews, for a sum of 1100 merks. This transaction seems to have been largely influenced by considerations of a national character, inasmuch as the exclusion of English spies from the Priory was, at such a critical period of home affairs, a very desirable object to be attained by the Scottish monarch. But William, the next Abbot of Reading, now tried to overturn this sale, and accordingly, in the parliament of John Baliol, held at Scone on Feb. 10, 1292, two of his representatives appeared ostensibly to claim the Priory or to secure payment of the balance of the price together with the rents accruing therefrom since the date of sale. Upon this the Bishop of St. Andrews appealed to the Roman See, thereby removing the case from the Scotch courts, whereupon the indignant representatives of the Abbott returned to England and laid their case before King Edward, who was at that time Lord Superior of the Kingdom of Scotland, alleging that they had met with a denial of justice. Edward now issued writs summoning Baliol to appear before him, but the latter invariably disregarded his missives, and after several years of international disquietude, the Priory of May was fully transferred, in the year 1318, to the Canons of St. Andrews, to whom Martin, who was at that time Prior, agreed to pay sixteen merks annually—a sum which had formerly been paid to the house of Reading.

Again we arrive at a gap in our historical record extending over a period of 131 years, during which time we may suppose a calm and steady march of events to have occurred. In the course of the summer of the year 1449, however, a vessel conveying Mary of Gueldres, who was about to become queen of James II., anchored near the island of May, on which Mary is reported to have landed, and to have paid her devotions before proceeding to Leith. During the years 1503, 1505, 1506, 1507, and 1508 repeated visits were made by James to the same spot, not only for purposes of devotion, but also, as old records have it, "to schut fowlis with the culveryn."

The monastery, to whose foundation and development, and to the struggles of whose manhood we have thus briefly referred, now enters on its period of decay. In 1534 and during several succeeding years much of the land which had been granted by the various kings and many of the nobles became alienated, and in 1549 the island of May itself was feued to Patrick Learmonth, of Dairsy, Provost of St. Andrew's, on account of its insular situation, its liability to seizure by an enemy in times of hostilities, and the devastated condition in which it had been recently left by English invaders. It ought, however, to be borne in mind that soon after the transference of the May Priory to the canons of St. Andrew's, the monks of May took up their principal residence at Pittenweem, on the adjoining coast of Fife, where a religious house had already been built in connection with the mother Priory, and in deeds belonging to this period which have come down to us we find the Priory of May styled the "Priory of Pittenweem, otherwise Isle of May," or the "Priory of May and Pittenweem." It need only be further added, that we have records of twenty-seven priors of May or Pittenweem between the years 1154 and 1606, and that the church on the island, long after it ceased to be a residence of the monks, was resorted to on account of certain miraculous changes that were believed to be effected there:—

> "Ubi steriles fœminæ, annuatim D. Adrianum Salutantes, inde redeuntes, puerperæ devenerunt."

On December 21, 1551, the island of May was acquired by Andrew Balfour, of Mountquhanie, and on May 12, 1558, by John Forret. It subsequently passed into the possession of Allan Lamond, and afterwards of Alexander Cunningham, of Barns. This proprietor will long be remembered as being the first to erect, by permission of King Charles I., a lighthouse on the island in the year 1635, to the light of which reference is made in the following lines, written by Alexander Scott, formerly a professor in the University of St. Andrews:—

> "Inter navifragam Carram et Bassæ ardua saxa,
> Ecce salutiferum Maia lumen habet!"

The Carr Rock here referred to is a very dangerous elevation near the island, 72 feet long by 23 feet broad, which is barely uncovered at low-water mark, and on which many ships have been wrecked, while the Bass is a bold and prominent rock off North Berwick. This lighthouse, which was the first built on the east coast of Scotland, was a square tower about 40 feet high, and provided with a flat roof, on which, about the beginning of the present century, upwards of 380 tons of coals were annually consumed.

Having come into the possession of the Balcomie family, the island was purchased from the heirs of that house by the Commissioners of the Northern Lights in 1816, and a beacon to a height of 240 feet above sea level was erected. At first a system of oil-lamps and reflectors were used in this modern lighthouse, but in 1843 these were exchanged for the argand lamp and dioptric system of Sir David Brewster. During 1843—1844 a second and smaller lighthouse was erected for the purpose of affording mariners a convenient landmark to enable them to avoid the Carr Rock, to which we have referred above.

The only other buildings which is now to be seen on the island are the ruins of an old chapel, which has been dedicated to St. Adrian; it is rectangular in shape, and about 32 feet in length, and its walls have been recently pointed, under the careful supervision of the authorities of Her Majesty's Office of Works.

The May Island, whose history has thus been briefly traced, is entirely composed of volcanic rock, which on its western side rises vertically from the sea to a height of 150 feet. Its eastern margin, though in a few places capable of accommodating boats, is in several places rugged and uneven, presenting in its many indentations rich crops of various species of Algæ. Although the development of the columnar structure in this volcanic rock is less marked than in some parts of the mainland on the shores of the Forth, yet an incipient structure of this type is to be found in the south-west corner of the island.

The water in the vicinity is of a clear green shade of colour, and contrasts very markedly with its muddy character further up the Firth. It thus, like the Clyde and other rivers that receive the many pollutions of our large cities, bears full testimony to the well-established fact, that such rivers are capable of purifying themselves during their subsequent course, partly by the deposition of heavier sedimentary matter, and partly, too, by the oxygenation of many complex decomposable organic compounds into simpler chemical unions. As a striking proof of the purity of the water, it may be mentioned that on one occasion a white disc, having a diameter of 2 feet, was lowered by a sounding-lead from the bow of the steam-yacht, and was gradually sunk to a depth of 9½ fathoms before it became invisible. The depth of the water in the immediate vicinity of the island varies from 9 to 20 fathoms.

These waters have long been regarded as good fishing ground, and although at the present time the only inhabitants on the island are people connected with the lighthouse, we are told by historians that formerly fifteen fishermen's families lived there, and that "the want of these families is a considerable loss to the general interests of the fishery in the Firth, for, placed as sentinels at its entrance, they were enabled to descry and follow every shoal of herrings or other fish that came in from the ocean."

As regards its productions, although historians tell us that the wool and fur of the sheep and the rabbits are of superfine quality—that, indeed, "the fleeces of the coarsest wooled sheep from the worst pastures in Scotland, when put on the island of May, in course of one season become as fine as satin,"—we have now reason to believe that if such was the case formerly it no longer is so, but that, on the contrary, the wool and fur of these animals are just like other wool and fur.

The great prevalence of ants is especially noteworthy. Some years ago the Commissioners of the Northern Lights tried in vain to exterminate these small creatures, and at the present time they are very abundant, although no ant-hills are to be seen.

The absence of a supply of fresh water upon which the inhabitants of so isolated a place could depend is much to be regretted, and it is probable that this escaped the observation of Sir Walter Scott when he recommended the erection of a bathing establishment on the island, to which visitors might resort. At the present time the people connected with the lighthouses have to procure their fresh water from the village of

* *The May Island; its Archæology; its Algoid Flora; its Phanerogams and Higher Cryptogams.* By John Rattray, M.A., B.Sc., Marine Station, Granton, Edinburgh. Read before the Botanical Society of Edinburgh, July 10.

Crail on the Fifeshire coast about 6½ miles distant from their island.

As regards the flora, the only account which we possess of it is one by Mr. Sadler, late Curator of the Botanic Garden, Edinburgh, and published in the *Transactions of the Botanical Society* for 1873. In addition to the plants enumerated in Mr. Sadler's list twenty-three new Phanerogams have to be recorded, among which are Rumex crispus, R. acetosa, Montia fontana, Festuca arenaria, Glyceria loliacea, Poa cæsia, Anthoxanthum odoratum, Carex distans, C. fulva, Eleocharis palustris, &c. Several new Cryptogams, exclusive of fifty-nine species of Algæ, have also to be noted, among which are the following: —Lastræa Filix-fœmina, Fegatella conica, Parmelia sinuosa, Lichinia pygmæa.

Among the Algæ collected were the following:—Himanthalia lorea (two varieties), Leathesia tuberiformis, Cladophora uncialis, Ectocarpus sphærophorus, Chorda tomentaria, Rhodymenia laciniata, Chylocladia articulata, Polysiphonia Brodiæi, Ptilota elegans, Laurencia pinnatifida, Conferva melagonium, Porphyra amethystea, Desmarestia aculeata, Ceramium acanthonodum, &c.

Among the more noteworthy points connected with the flora we may refer to the following:—

1. The entire absence of trees, whose roots play so important a part in aiding in the disruption of rocks and the formation of soils, and whose leafy branches prevent at once rapid radiation and excessive warmth while they harbour many insects and modify the conditions of exposure as regards wind currents.

2. The occurrence of Porphyra amethystea and young Ectocarpi parasitically on Desmarestia aculeata —the former being attached to the aculei of that plant: a fact which has not hitherto been recorded in this estuary.

3. The occurrence of a large growth of Enteromorpha intestinalis in a pool above the limit of spring tides and so furnished with saline matter exclusively by the agency of spray—a fact which is to be correlated with the usual mode of occurrence of this species in places where fresh water streams enter the sea.

4. The localisation of Punctaria plantaginea, which was found only at the level of high tide on the south-east, seaward, side of the island.

5. The very large vegetative development of Cladophora uncialis.

6. The abundance of Plocamium cœcineum, of which, however, no specimen was found growing, and which must have come as drift from deep water.

A PEEP INTO SOME JERSEY GARDENS, &c.

(*Continued from p.* 44.)

Steephill.—Two charming *multum in parvo* flower gardens must next be visited, the first and prettiest being Steephill, the residence of Mrs. Robin. It stands a mile or so from St. Helier, up the high road to St. Saviour's, and crowns the plateau of a ridge of considerable height bounding the Vallée des Vœux on the south. It is, be assured, you who we are alluring there, a perfect *bijou* of a place, with a bright and lively tit-bit of picturesque scenery, a little belt of wood, little grassy meadow slopes, a little water, a little velvety lawn—good lawns of fine grass are somewhat rare in the island—little gardens, little conservatories, every thing *in petto*, but everything carefully and artistically laid out, tended to, made the most of, and pleasing to dwell upon. Add, however, to these artificial beauties, so to call them, a peep over a good stretch of surrounding country and an outlook upon the town, the harbour and the roadstead of St. Helier, and you have a word picture of the home of one branch of a well known and time honoured Jersey family.

It goes without saying that the expert will find in the conservatories of Steephill, and on its parterres, and borders, excellent specimens of all the many ordinarily cultivated in and outdoor Jersey flowers and plants, so we may pass them by, save noticing that under glass will be seen (1) a young and remarkably healthy Dammara australis, and (2) an Aralia lanceolata, both rare, and both brought from New Zealand by one of Mrs. Robin's sons. But it is the Ferns, in a very pretty fernery, to which we wish to draw attention, and of these particularly to a Killarney Fern (Trichomanes radicans), a most handsome specimen, grown in a pan 20 inches in diameter, measuring more than 16 feet in circumference, and with every frond grandly and healthily developed. It is a prize Fern, this Trichomanes; and Mrs. Robin has raised it from babyhood until now, when it claims to be the finest in the island — perhaps, indeed, anywhere. There are also to be well gazed upon and studied magnificent growths of the Todea pellucida, Todea superba, and others of their class too numerous to count up or to name, for Mrs. Robin's speciality is Ferns—all sorts and conditions of Ferns; and a collection of twelve exhibited so far back as 1876 by her received a Silver Medal for their rarity and beauty.

In the grounds around and behind the house is to be found the largest and thickest Bamboo we have seen in the Channel Islands, also a fine group of ten varieties of Australian Eucalypti, and close by them a thriving Malvaceous plant, Abutilon vitifolium, a native of Chili, all growing, need it be repeated, in the open air. The Steephill Roses are many and very fine; so are also its Azaleas, Rhododendrons, and Lilies; and, by the way, in a sheet of water, much too pretty to name a pond, but not large enough to dignify into "lake," are some glorious plants of Calla æthiopica, which have been there flourishing summer and winter these twenty years and more.

Clifton House.

Clifton House, Water Lane, the home of Miss Ainge, is the second whose gardens we want to say one short word about, and that only that among its many floricultural beauties is to be seen a small but vigorous Rhododendron, a chance cross-breed between a R. Edgworthii and another parent, name quite unknown. Miss Ainge elects to call this hybrid Hendersoni, and says that it takes after Edgworthii in character, save that it seems to be hardier. It lately bloomed profusely; its flowers were pure unsullied white, entirely without that yellow tinge or shade usually observed in Edgworthii. It is well worth propagating.

The Gloxinias of Clifton House are very fine, some of them of the most delicate tints, and the Caladiums and Coleus, though not rare, are worth pausing over. In one of the conservatories there is a noteworthy Begonia from Ceylon, imported by a gentleman long resident there. We ourselves have seen it often enough in that land where, according to Bishop Heber, "man alone is vile," but we know not its botanical cognomen. Its clusters of flowers are profuse, and of that very hue of scarlet which distinguishes the "Runner Bean" of that name. If any expert of a floriculturist sets eyes upon it will he oblige a lady, and christen it?

Claremont House.

General Knatchbull's garden at Claremont House, near to the Victoria College, is well worth an entry into, for the "old soldier" is a very successful florist and horticulturist; but here, more than anywhere else, "get leave," or literally and metaphorically you may be eaten up between a huge watch-dog and an offended veteran.

The easiest and most economical way of getting to the two last places we counsel inspection of — La Chaire (the tropical garden) and the Manor House, or Seigneurie of Rozel—is by that Jersey institution the excursion car, or *char-a-banc* from St. Helier to Rozel, itself in the parish of St. Martin, and thence to foot it to your destination. On your route, through some attractive country, the "amusing guide" of the car, a *sine quâ non* of the vehicle, will probably beguile you with anecdotes of local persons and things more or less fictitious, and twigging you to be a gardener, of the earth earthy, will tell you (in song) that "Here we grow the Cabbage plant 10 feet as to high," as to which latter point you can satisfy yourself by looking into the first cottager's garden you pass.

La Chaire.

This place is almost within stone's-throw of the hotel and other buildings of the tiny fishing hamlet of Rozel, and is the habitat of Mrs. Fothergill. Its "tropical garden" was established some forty years ago by her father, Mr. Curtis, the founder, we believe, of the *Botanical Magazine*, and himself one of the best botanists of his day. He placed it on the south side of a wooded rocky hill, where it is completely sheltered, and enjoys a climate about the same in temperature as that of Madeira. He planted in it every tropical tree or shrub he could lay hands upon by hook or by crook, for love or for money, and reared and acclimatised them with untiring solicitude. Since his death La Chaire has degenerated—so at least the oldest inhabitant tells us, but still there is enough on its slopes, its terraces and tiny dells and gorges, to satisfy the most expectant, for outside Kew, and growing in the open air, there is nothing in England to equal it. Let us try and recollect what is to be seen seen here, or at least those things which are most conspicuous. We begin with a Dacrydium cupressinum, 35 feet high at least, growing in the grounds by the side of the house; near it is an Aralia papyrifera, the rice-paper plant, the palmate leaves of which are more than 2 feet long. Then we find the very first imported, established, and to this day the very best Eucalyptus globulus in the island. It may be said to be towering up to the skies, and it measures 8 feet 3 inches in girth, and 68 feet in height. Again, as we look around we cast eyes upon Phyllocladus trichomanoides, the Fern-tree of New Zealand, as also Manuka thea, the Tea of the same country, mentioned by Cook in his *Voyages* [Leptospermum scoparium?], and the Pepper shrub of Australia, the Olive, &c. Acacias are legion here, and thrive splendidly, and when they flower the whole Rozel valley has sweetness added to its almost unrivalled scenic beauties. Conspicuous among these is A. dealbata, which has attained the height of 50 feet.

In a place so wild as La Chaire, and where anything like systematic arrangement would have taken away from its miniature forest-like appearance and effect, we are obliged to go upon a sort of haphazard enumeration of exotic trees and shrubs and plants, as we come upon them in our stroll around. So it is that in a certain nook we discover a glorious specimen of Eucalyptus perannulata (Weeping Eucalyptus), and find it in its three stages of fructification at one and the same time, *i.e.*, fruit ripened, flowers blooming, and buds bursting out, all upon the same twig. In another corner we hit upon a Rhododendron Falconeri, and here, there, everywhere, we see other Rhododendrons, chiefly American, no longer shrubs but almost gigantic trees. Still going on, we are pointed out a Fagus Cunninghamii, the evergreen Beech of Tasmania, under the shade of whose wide-spreading branches a score of Virgil's Tityruses might have comfortably reclined; a Pittosporum bicolor 40 feet high, and a Cupressus macrocarpa, the trunk of which is as big as a large cart-wheel; an Aralia quinquefolia, and many another growth which we have neither time nor space to tell of. Azaleas, Camellias, tropical Laurels flourish well here; and Heaths—those we take so much care to grow in England—are positively weeds. So also Ferns, and especially the one known as the Madeira variety.

So much for La Chaire. Now will we walk a mile or two and go to

The Manor House of Rozel,

the seat of the Rev. W. Lempriere, the head of that family, the A 1 blue blood *par excellence* of the Channel Islands' gentry. Before, however, we start with just an outlined sketch of this lovely place—much more like an English baronial hall and demesne than any other in Jersey—let us just remind the reader that the Seigneur of this *fief* (Rozel) holds it under condition that he rides into the sea to meet the Sovereign when he or she visits the island, and also acts as cup-bearer to Majesty while remaining in it.

Few places anywhere, though they may exceed Rozel in size, can match it for picturesqueness, as the visitor will see. It has its fairly large grassy park, bordered and intersected by wooded walks stocked with fine old timber, through which walks as you stroll you get here and there glimpses of the sea and the rocks encircling the Jersey coast, and in the distance the shores of France. It has its glades, and dells, its brakes and thickets, all remarkable for the profuse luxuriance with which Ferns flourish. It has its "desert," for so Mr. Lempriere has elected to call a wild and purposely untouched stretch of trees and undergrowth. It has its well-cared-for flower gardens, orchards, kitchen gardens, and home farm; and it has its *viviers*, or fishponds, swarming with carp and tench and eels. Within the grounds is its chapel, a building dating between 1100 and 1200, which the family lately restored, and where Divine Service is regularly performed. There is some fine black Oak carving in the shape of an altar and a bench within the sacred building, but perhaps those will not interest our friend who has come here in



Fig. 21.—Campanula thyrsoides.

search of "vegetation," so to say, as two fine Pomegranates (Punica nana) growing on its outer walls, in bloom, and the specimens of tree culture, the expert of a gardener who is his *cicerone* will point him out. Among these most noticeable are Benthamia fragifera, raised from seed and in full bloom; a deciduous Cypress, supposed to be the largest in Europe, girth 9 feet 6 inches; a Gunnera scabra, leaf 9 feet across; some noble Oaks—Oaks as a rule do not thrive in Jersey, where, indeed, they are strangely stunted; and some fine or finer Beeches and Chestnuts. And *àpropos* of Nuts, no horticulturist has ever managed to obtain Filberts or Hazelnuts in Jersey; there is too much saline matter in its air, say they. The trees will grow and leaf healthily, but are never prolific.

There even yet remain the extensive Pear orchards of Mr. Gosset, and the show farms of Colonel le Cornu, Mr. le Gallais, and others to talk about, but these must remain unsaid to a fitter season. *H. L. C.*

CAMPANULA THYRSOIDEA.

An old-fashioned herbaceous perennial, whose rather dull yellowish flowers are redeemed by a stateliness of habit which renders it a worthy occupant of the herbaceous border. It is a biennial, attaining a height of 2 feet, with tufted, narrow, oblong, hispid leaves and creamy-yellow bell-shaped flowers in dense terminal clusters intermixed with broadly linear leaves. It is a native of Hungary and Lower Austria, very unlike most Bell-flowers in habit, and is one of those plants which were almost lost to our gardens till the reviving taste for interesting rather than monotonously gaudy plants ensured its reintroduction. For the specimen whence our illustration (fig. 21) was taken we are indebted to Messrs. James Dickson & Sons, of Chester.

ON THE ALGÆ OF GRANTON QUARRY.*

In this quarry a well marked division of the tidal belt into zones, each bearing a preponderance of certain species, is to be observed. We may enumerate these zones as follows:—

1. The upper tidal zone, characterised by its abundant growth of Enteromorpha compressa and Enteromorpha intestinalis — both of which species are especially abundant on the landward side of the quarry, although very rare on the seaward side, which has an exposure to the south.

2. The median tidal zone, in which very few Chlorosperms are to be found, but which is marked out by a great development of Fuci, especially Fucus platycarpus and F. nodosus, as well as by the occurrence of the Rhodospermic Ceramiums.

3. The lower tidal zone, in which we again find a very great development of Enteromorpha compressa with Ulva linza growing around its lower margin.

4. The aqueous zone, which is always under water, and where one finds a few delicate Callithamnious Ectocarpi, and Laminaria saccharina.

While the various belts thus pointed out are very readily distinguishable from one another, probably the fact of greatest immediate interest is the disappearance of Laminaria saccharina, which has occurred consequent on a lowering of the low water level of the quarry, which was effected some time ago, in order to allow the steam-yacht connected with the marine station to enter the quarry from the river at high tide. A passage was cut through a bar of shingle and boulders to a depth of several feet, and the result has been that the large leaf-like thalli of the Laminaria have fallen from the attachment wherever that attachment was effected in the zone which is now periodically exposed to the air, but which was formerly invariably under water. It is to be noted, however, that this species of Laminaria has not entirely disappeared from the quarry; it is still to be found on the rocks which are not exposed to the air at every low tide, and also on cages which are buoyed in the quarry, and in which zoological specimens are kept alive.

It may further be remarked, that although Laminaria saccharina seems incapable of resisting for a prolonged period exposure to the air, Laminaria digitata does not appear to be affected in a similar manner, as we have recently seen it growing in places exposed at every ebb-tide, near Lamlash, in the island of Arran. Probably the greater succuleney of the tissues of the latter plant, as compared with the former, may account for this curious physiological difference. A similar disappearance of Laminaria was noted in some of the lakes of Stennisva, Orkney, by the late Hugh Miller.

Schismatoglottis pulchra.—This is a tufted Aroid, with cordate ovate acute shortly-stalked leaves, glaucous green and silver-spotted above. The leaves are about 4—5 inches long by 1½—2 inches in breadth. The plant is very effective, and was introduced from Borneo by the Compagnie Continentale. *Illustration Horticole*, t. 520.

* By John Rattray, M.A., B.Sc., Marine Station, Granton, Edinburgh.

THE POTATO CROPS OF 1884.

SCOTLAND.

ABERDEEN.—The Potato crops look very well, but in all likelihood will be small, owing to the continued dry weather. The late rains have only now reached the young tubers. There is a slight attack of the disease in the earliest Ashleafs on south borders. *J. Smith, Dunecht House, Dunecht, July 22.*

BANFF.—Potatos are looking strong and healthy both in gardens and fields, and there are no signs of the disease anywhere in this district. *John Webster, Gordon Castle Gardens, July 21.*

CLACKMANNAN.—The crops are looking extremely well in this district. *J. Dewar, Beechwood Gardens, July 21.*

FORFAR.—Potatos are late, but looking well all over the district, both in fields and gardens, and there are no signs whatever of the disease. *G. Johnstone, Glamis Castle, July 22.*

LANARK.—Up to this date Potatos in both gardens and fields have a healthy appearance, and I have neither seen nor heard of a single trace of disease in this locality. *Andrew Turnbull, Bothwell Castle, July 22.*

MID-LOTHIAN.—The Potato crop is looking uncommonly well around here, and with favourable weather promises to be an abundant one. Early Potatos are a heavy crop, but not so good in quality as usual, owing to the heavy rainfall of late. There is no appearance of disease up to the present time, but the first week in August is the period at which it generally breaks out in the district, and the present moist, close weather is productive of it. The plants, however, are very healthy and vigorous, and with a change to dry weather the disease would not be likely to do much harm. The Turnip crop looks very promising, and all vegetable crops are above an average, and generally of fine quality. *Malcolm Dunn, Dalkeith Gardens, July 21.*

—— The Potato crops look well in this district. I believe they will give a heavy yield if we have not too much rain. *Chas. Johnstone, Dalhousie Castle Gardens, Bonnyrigg, July 21.*

ROXBURGH.—The Potato crop in general is looking well throughout the country, and there is no appearance of the disease. Early sorts all yield a fair crop, but are small, on account of the dry weather we have had previous to this. *John Galloway, Minto Gardens, Hawick, July 22.*

ENGLAND.—NORTHERN COUNTIES.

WESTMORELAND.—The crops are very promising in this locality. *Wm. A. Miller, Underley Gardens, July 22.*

LANCASHIRE.—The tubers are rather under-sized at present, but remarkably healthy and clean. No signs of the disease as yet. *W. B. Upjohn, Worsley Hall Gardens, July 21.*

MIDLAND COUNTIES.

CHESHIRE.—Early Potatos, of which great quantities are grown about here, are good in quality, but the tubers are small owing to the exceptionally dry season. Late crops look well, and up to this date are free from disease. *R. Milne, Vale Royal, Northwich, July 21.*

NOTTS.—Potatos look well, but many around us are complaining of second growth, since the rain came after such a long period of excessive heat and dry weather. Having one of the best arranged water systems, with an unlimited supply of water, we gave all our early Potatos several heavy soakings through the hose, and now we are lifting very nice tubers, and there is no disease as yet. *A. Henderson, Thoresby Park, Ollerton, July 22.*

SALOP.—Potatos are looking remarkably well, and although the earlies were small, in consequence of the dry weather, they are all so far sound; the late sorts are making rapid growth since the rain. The chief late kinds grown here are Sutton's Reading Hero, Magnum Bonum, Red Steele, and Champion; as earlies, Ashleaf, Myatt's Prolific, Rivers' Royal. There are very large breadths grown in this neighbourhood, and thus far I have not heard of the disease hereabout. *A. S. Kemp, Haughton Home Farm, Shifnall, July 21.*

—— Early Potatos are good in quality, and the late sorts are looking well. *H. Purser, Berwick House, Shrewsbury, July 21.*

STAFFORD.—In this district the Potato crop prospects are very promising. Up to this date we have seen nothing of the disease; we must not, however, feel too safe, as there is plenty of time for it to do much mischief. *W. Ward, Little Aston Gardens, Sutton Coldfield, July 21.*

—— The Potato crops are looking very well. The early ones are rather small, owing to the drought, but are of good quality. *W. Davidson, Sandon, Stone, July 21.*

—— The crops were never more promising, and we have not seen or heard of any sign of the disease. *E. Simpson, Wrottesley, Wolverhampton, July 22.*

—— Early kinds have turned out very well in quantity, but are rather small in size, clean-skinned, and entirely free from disease. I never saw late Potatos looking better both on the farms and in the gardens. *W. Bennett, Rangemore Gardens, Burton-on-Trent, July 20.*

LEICESTER.—Early Potatos are rather small, but sound, and good in quality. Later sorts are growing vigorously, and disease has not appeared. *W. Ingram, Belvoir Castle Gardens, July 22.*

—— Potatos in this neighbourhood are looking very well; I have not heard of the disease being seen as yet. Early sorts are turning out very good and clean crops; late ones since the rains have improved wonderfully; Magnum Bonums are mostly grown here for late use. *G. Maynard, Cole Orton Gardens, Ashby-de-la-Zouch, July 22.*

WARWICK.—The Potato crops look remarkably well in this neighbourhood: early varieties are good and abundant. Every prospect of a heavy yield of later varieties, and at present all are free from disease. *R. Greenfield, The Priory Gardens, Warwick, July 21.*

RUTLAND.—Early Potatos, such as Ashleafs, are very good. No signs of the disease as yet. Late sorts in the fields are very promising. *John Grey, Normanton Park, July 22.*

BEDS.—The early kinds are fast ripening, but the tubers are rather small owing to the dry season, but the quality is good, and the tubers free from disease. The later kinds are looking well at the present time, and are also free from disease. *G. Ford, Wrest Park, Ampthill, July 22.*

BUCKS.—The crops are looking very promising at this time, the haulm quite free from any appearance of disease, and the tubers entirely free from it also. We have lifted a breadth of Veitch's and Rivers' Ashleaf Kidney, also Lady Paget and Bedfont Prolific. This is our first year's experience with the latter sort, but as an early white round variety we like it immensely, because it does not take up much room for growth, and is very prolific. It appears to us to be a promising kind for forcing purposes. *G. T. Miles, Wycombe Abbey, July 21.*

—— The early varieties turn out well, all sound and of a good flavour; the late varieties promise to be as good. Not a sign of disease. *G. Haskins, The Gardens, Stowe, Buckingham, July 21.*

HERTS.—We are now lifting some of the early Potatos, which are excellent; not quite so large as usual, but of splendid flavour. I grow between twenty and thirty varieties, all of which look most promising and are quite free from disease. In this locality there are a great many Potatos grown, all of which look well and are free from disease at present. *J. C. Mundell, Moor Park, Rickmansworth, July 21.*

—— Potatos that were planted on February 18, between ridges and slightly covered with half-rotten leaves, escaped injury. This practice suits our cold clay soil. The crop is not so heavy as last year, but clean and nice. I have heard nothing of the disease yet. Field crops look well, especially since the last rain. *G. Merritt, The Hoo Gardens, Welwyn, July 22.*

EASTERN COUNTIES.

LINCOLN.—Early Potatos are a fair crop, rather small but of good quality. Second earlies are a good crop and are turning out well, the quality first-rate. Late Potatos also look well. We have no disease as yet in this neighbourhood. *David Lumsden, Bloxholm Hall, Sleaford, July 22.*

—— Early kinds are not very good, owing to the continued drought, but late varieties are promising. *James Taylor, Lee Hall Gardens, Gainsborough, July 21.*

SUFFOLK.—Potatos that were planted early have not been good, as during their growth drought was continuous, and cold winds prevailed, thus checking the tops, which in many places got cut by the frost. Judging from present appearances, the late kinds will yield fine crops, as the haulm looks healthy and free from spot, and the splendid rains we have had during the last week (July 21) cannot fail to be a great help in swelling up the tubers, which began to be in danger of having their skins set, so dry was the earth, but the soaking it has now had will carry them through, and, it is to be hoped, without any sprouting. *J. Sheppard, Woolverstone Park, Ipswich, July 21.*

NORFOLK.—The early crops are very good, but late crops are arrested in their growth by the long spell of dry weather. Yesterday (July 21) we had 0.45 inch of rain, nearly double what we had all through June, and the Potatos are looking the better for it. I have not seen or heard of any traces of the disease in this neighbourhood. *T. Wynne, Wroxham, July 22.*

—— An excellent crop of early Potatos, except on poor soils, where they are rather small. Late Potatos are looking well, and the late rains should ensure a large yield. There is no disease at present. *James Forder, Hillington Hall Gardens, Kings Lynn, July 22.*

ESSEX.—The crop is very good, but the individual tubers are but small on account of the dry weather. *W. Bones, Havering Park, Romford, July 21.*

—— Potatos in general are looking well, but the tubers will be small if we do not soon get rain. *W. Bowman, Hylands, Chelmsford, July 21.*

—— Potato crops are looking well, and there is every prospect of an abundant yield. I have not yet seen any disease. *D. Donald, Knott's Green, Leyton, July 21.*

SOUTHERN COUNTIES.

BERKS.—Potatos are looking extremely well in this district, both early and late. The Early Hammersmiths have been of excellent quality this year, as indeed I find they generally are. All the late varieties are also looking well. We have seen no sign of disease as yet. *S. Mortimer, Purley Park Gardens, Reading, July 21.*

KENT.—Those at present lifted are very small, but the late ones are looking very well. Rain, however, is much wanted. *G. Bunyard, Maidstone, July 21.*

—— The crop in this neighbourhood will be very short, owing to the drought; we have had but one fall of rain sufficient to reach the roots since the planting season, and the probability is that should we now get rains they will commence to grow and spoil what we have. I have seen no appearance of disease yet. *John Charlton, Summer Vale Nursery, Tunbridge Wells, July 21.*

—— Our Potato crops look well, and are of excellent quality, but unless rain comes soon the crop will be much smaller than usual. We are now nearly 4 inches short of the average fall of rain. *R. Gray, Chevening, Sevenoaks, July 21.*

SUSSEX. — Potato crops excellent and of good quality. At present there is no sign of disease. *F. Rutland, Goodwood, July 21.*

—— The Potato crop at present is very promising; the tubers, in consequence of the want of rain, are small but sound, and the flavour is excellent. Probably the field crops, from drought, will be under average in bulk. *J. Rust, Eridge Castle, July 21.*

WILTS.—In our immediate neighbourhood there is every prospect of a good crop, and up to date there is comparatively little disease. *J. Horsefield, Heytesbury, July 21.*

—— The whole of our Potatos, both early and late varieties, are all we can desire as regards crop and quality. In fact I have not seen them so good for forty years. *W. Phipps, Bowood, Calne, July 21.*

—— The Potato crop in this neighbourhood is very good and of first-rate quality; this last week we have found a few diseased tubers. The Ashleaf, Beauty of Hebron, Covent Garden Perfection, and Magnum Bonum are largely grown here. *Thomas King, Devizes Castle, July 20.*

DORSET.—Early Potatos yield excellent crops, heavy and good; Veitch's Improved Early Ashleaf, I find, are the best croppers, and flavoured; Schoolmaster is a good variety, but I found yesterday severely attacked with the disease. Late Potatos are everywhere here looking very promising. *C. Hazel, Leweston Gardens, Sherborne, July 22.*

WESTERN COUNTIES.

SOMERSET.—Early Potatos are a good crop, but small. Late sorts are looking well, and we have no disease as yet. *W. J. Rowley, Kingsweston House, Taunton, July 21.*

Gloucester.—The last few days the disease has appeared in the cottage gardens, but field crops, on the whole, are looking well. *John Soward, Highnam Court Gardens, Gloucester, July* 22.

WALES.

Cardigan.—Potatos are looking remarkably well at present, and I can see no signs of the disease, nor have I heard of its appearance in this neighbourhood. The tubers are smaller than usual, but of good quality. There is now great danger that the recent showers will cause them to make a second growth. *H. Howard, The Gardens, Castle Malgwyn, July* 21.

Carnarvon.—Early Potatos on the whole are small but very good in quality. Later kinds of field Potatos promise wonderfully well. *W. Speed, Penrhyn Castle, Bangor, July* 21.

Denbigh.—Our first lot of Potatos, owing to the long-continued dry weather, did not yield anything like an average, and were only of indifferent quality, but they have improved wonderfully since the nice genial weather we have had from the middle of June. Second earlies look very promising, more particularly Sutton's Early Regent and Lady Truscott, both being of dwarf, sturdy growth with nice broad foliage. Later and field sorts I never saw in better condition, the most noteworthy being Magnum Bonum, and that grand sub-variety St. Oswald. No disease so far. *James Louden, The Quinta, Chirk, July* 21.

Pembroke.—The early crops dug out very thin and small, owing to the dry weather. Second earlies are with us a grand crop, and the late sorts look well, having a short and sturdy top. The disease put in an early appearance, but so far has made but slow progress, and only a few spots are to be seen at present. *G. Griffin, Slebeck Park Gardens, July* 21.

IRELAND.

Cavan.—Early crops are very good, and the prospects of the main crops are most promising. *P. J.*

Clare.—At present (July 22) we have no appearance of the Potato blight. Owing to the unusual drought in June the tubers are not quite so large as I have seen them at this time. *W. Wilson, Dromoland.*

Fermanagh.—The Potato crop is promising a good average crop throughout this locality. *W. Magee, Florence Court, Enniskillen, July* 22.

Kildare.—The early Potato crop is quite up to the average and free from disease. The late crop is also promising well but requires rain to develope the tubers, otherwise they will be small and consequently a light crop. *Philip Wadds, Moore Abbey Gardens, Monasterevan, July* 22.

CHANNEL ISLANDS.

Jersey.—Potatos of the early varieties have become the staple crop of the Jersey farmer. The varieties most cultivated are Myatt's Prolific and Webb's Imperial Kidneys (the latter being grown under the name of the Early Fluke). The crops have been good, the tubers fine, and the prices realised have been good and stationary. The number of loads of Potatos weighed over the weighbridge for sphipment, from May 19 to July 16, was 37,769, which, estimating £5 per load, would amount to £188,785. The quantity reserved for seed and home consumption, say one-third more, added to this will give an idea of the quantity of Potatos grown on this pretty productive little island: £251,713 6*s.* 8*d.* is the estimated value of the Potato crop. *C. B. Saunders, St. Saviour's, July* 21.

STRAWBERRIES AT MENTMORE.

When visiting this fine garden during the height of the Strawberry season it was our good fortune to be able—thanks to the kindness of Mr. Smith, Lord Rosebery's head gardener—to taste and make comparisons betwixt forty different varieties of this fruit. We saw how much soil, aspect, and position have to do in producing size, and especially flavour. It was also to be observed that under trees, where it is often advocated to plant Strawberries, simply because the plants do not refuse to grow in such places, the foliage was longer, rather drawn, and the fruit, even when as big as on plants in open spots, had poorer colour and more acidity, although this latter quality depended in some cases on the variety. The best fruit in the open were to be found on sloping borders, free from buildings, and where air and sunlight have the freest play. On plants in such sites the crop was enormous; the soil—a deep, rather heavy, sandy loam, that never "gives out"—seemingly being the very perfection of a Strawberry soil. The plants are mostly planted on land that has been trenched some one or two years before, and heavily manured; these two points of culture being indispensable, if superior fruit and an extended season is to be expected. Mr. Smith does not advocate the retention of a bed for a longer period than two years, if it has been planted with specially prepared runners, although it may be remarked that in cases where only weak runners are obtainable the third season may be allowed to be reached before clearing away.

The best of the kinds this season at this place were Moffat's Duke of Edinburgh, a sort with a very good flavour; a fine cropper, the fruit coming either bluntly conical or wedge-shaped, and which will bear forcing. Elton Pine, which is, taking all points into consideration, the best sort grown here, the crop being this year really enormous. Oxonian, or Myatt's Eliza, a long-shaped pale red fruit, rather later than Elton, and which, when planted on borders looking north, can be had the latest of any. This is a sort worthy of trial in good retentive soils. It would require liberal treatment, and plenty of space, as it is a strong grower. Loxford Hall is a fine variety for heavy cool soils, and is of no value at all in light ones, or in hot positions, at least, in such. We should say this kind may be planted at 1 foot apart in the rows, and 1½ foot between the rows. The golden prominent seeds that stand out from the surface of the varnished-like fruit make this sort very pretty for preserving whole, and jellies or dessert. Pioneer is another fine kind, of excellent flavour; a large fruit that is very firm, and should pack well: it has not as yet been tried for forcing, but if it does its packing qualities should recommend it to growers. Sir Joseph Paxton and Sir Charles Napier, too well known to be mentioned further, produce capital crops in and out-of-doors. The Bicton Pine, a large well-flavoured white kind, does well, as does Lucas, a medium-sized good-flavoured kind, not unlike that of British Queen. This is found to be a fitting kind for mid-season forcing. Mrs. Radcliffe, a superior-flavoured large fruit that Mr. Smith thinks much of, only it is no sort for forcing. Lastly, Crown Prince, looking like an improved Oscar—that is, globular in shape, and having prominent yellow seeds and a waxy skin. This and the first named variety in our selection are the cream of this season's introductions. Dr. Morier, a big, uncouth, dull-red coloured fruit, has been tried in the houses, and will have another trial next season, but it seems to possess no other recommendation beyond weight and flavour, and is not handsome.

Amongst the large kinds of no particular merit we noticed Sharple's Seedling, Triomphe de Paris, James Veitch, President de la Cour, MacMahon, and Excelsior. Even some of these might in other soils prove worthy of cultivation—notably President de la Cour.

As in the case of some other plants, a change of runners from other localities has been found beneficial in producing extra vigour and greater productiveness, and the more distant the part from which the new supply is drawn the better are the results. With regard to the sort Dr. Morier, it has been found advisable to plant annually.

BURFORD LODGE, DORKING.

Sheltered on the entrance side by tall trees thickly planted, under which the Hypericum, with its yellow flowers, and the blue Perriwinkle, form a carpet, and enclosed for a great part of the rest of its circumference by the abruptly rising ground of Boxhill, clad with Box and Yew trees, through which the white of the chalky soil appears as a background, rising to a height of 450 feet, and securely sheltering on the east side, and enclosing it as it were in a nest, lies Burford Lodge. This protected situation is conducive, no doubt, to the best results being obtained from the unremitting care and attention which all things receive once they are admitted here, and hence it is perhaps, in some degree, that we always find so many things at Burford Lodge in perfect health, which have puzzled the best growers over and over again. While good flowers of every description are cultivated here, the marvellous Orchid collection, which is one of the oldest and best in the country, is always the centre of attraction, and to visit it at this time, when the greater part of the Odontoglossum Alexandræ and of the large flowered Cattleyas, of which there has been such a great display until recently, has passed, is very interesting, as it allows of so many of the rare things coming more prominently into notice, by reason of the absence of flowers of those things which are grown in quantity.

First comes Odontoglossum Warscewiczii, with two fine spikes of snow-white flowers, with their purple markings something like those of O. Roezlii, indeed it seems to partake of O. Phalænopsis, O. vexillarium, and O. Roezlii. It is a lovely and sweet thing. Why is it so rare? There has been time enough since its discovery to allow of its becoming more common, in spite of its being one of the worst travellers known. Next is Odontoglossum elegans, that lovely hybrid which partakes of both O. Hallii and O. cirrosum. Showy like the one and elegant like the other, it is very fragrant and a plant much to be coveted, but it is to be feared that its hybrid origin precludes the possibility of its ever being common. A third rare beauty is Oncidium cucullatum giganteum, a well-named novelty, as it is much larger in all its parts than the ordinary form and quite four times the size of the original species. Its flower-spikes are much branched, flowers large, petals chocolate, lip rose, spotted dark crimson. Angræcum Scottianum is another rare plant in bloom, it has dark green semi-terete leaves, and habit of growth something like a dwarf Vanda Hookeri. It bears a two-flowered spike of almost disproportionately large blooms, the large, wax-like, snow-white lips being turned upwards, and the yellowish fleshy tails hanging down. It is an African plant, which will be well received should it ever reach these shores alive and in quantity. Cymbidium rhodocharis has tall upright spikes of light yellow flowers, with curious two-lobed lips veined with violet. It is a Madagascar plant, not of the first merit, but it calls to mind the Brothers Humblot, one of whom died while making the collection in which the plant came. Among unnamed novelties are a strange tawny-yellow form of Odontoglossum ramosissimum with flowers without a tinge of the lilac colour usually met with in that species, and a Lycaste which may best be described as a L. Harrisoniæ with bright yellow flowers.

The better known but not commonly found species give Aspasia lunata with showy flowers having greenish petals spotted with black, and attractive lips, mauve edged with white; that little-gem, Saccolabium Hendersonianum, with three spikes of its rosy-pink flowers; three Veitchian hybrid Cypripediums, viz., C. tonsum, with its immense greenish flowers; C. œnanthum, like a C. barbatum with a C. Spicerianum dorsal sepal; and C. albo-purpureum, a gigantic variety of the C. Sedeni section. Utricularia Endresii, which has a wide-spread reputation for being unmanageable, has, strange to say, never been any trouble to Sir Trevor Lawrence; from the first it took kindly to the warm shady house in which it was suspended, increased rapidly in the weediest manner, and is now showering out its numerous light blue flowers over the many pretty specimens which look so much at home here. Epidendrum Wallisii, Dendrobium Huttoni, and its hybrids, which are always noted as being in bloom at Burford, are still in flower, and the original O. hebraicum is sending up a spike. In the general collection a remarkable specimen of Dendrochilum filiforme with hard on one hundred of its elegant drooping spikes of tiny yellow flowers forms a lovely object, the beauty of which cannot be conceived by those who have only seen small plants. This specimen, too, is interesting in other respect, as it was one of the late Sigismund Rucker's favourites; it has lost nothing by its move from Wandsworth to Burford. Dendrobium Dearei is represented by several good specimens with plenty of spikes of pure white flowers on them, in some cases fifteen to twenty of them on a spike. The longer this plant is with us the better it is liked.

Many other striking plants are now in bloom, noticeable being Odontoglossum vexillarium, a plant 3 feet across, with many spikes, an immense flowered form; large specimens of Cypripedium Veitchianum, C. Lawrenceanum, and C. Stonei; a few remaining Cattleya Dowiana, C. gigas, and C. Gaskelliana; a great mass of Grammatophyllum Ellisii, Dendrobium Lowianum, D. Jamesianum, Phalænopsis Schrœderi, P. violacea, P. antennifera, P. violacea, P. cornu-cervi; Odontoglossum bictonense album, some very finely flowered Anguloa Ruckeriana, Cattleya Leopoldi, Brassavola Digbyana,

Masdevallia bella, M. Daviesii, M. ionocharis, many M. Harryana, Disa grandiflora, Epidendrum vitellinum majus, Stanhopea eburnea, Vandas, Saccolabiums, &c.

At Burford Lodge there are always lessons in culture to be learnt, and a few of them force themselves on our notice now. Here is a grand plant of the generally troublesome Dendrobium chrysotis (Hookerianum), with pseudobulbs from 6 to 10 feet in length; they have been trained up as long as convenient, and now the points of many of them have been turned down. The stems, under the skilful management to which they have been subjected, have grown on year after year from the points, and now the lower portion of the plant, on which the riper growth is profusely set with flower-spikes. It has been grown in a rather shady intermediate-house. Dendrobium Falconeri here grows very freely, and without those signs of impatience usually seen about it, in a shady part of the cold Odontoglossum-house; it is also said to carry its flowers for a much longer period when grown cold than when kept in heat. Sobralia macrantha, grown in full light in a vinery, and which is now in bloom, bears larger flowers of better substance, and for a much longer time than when grown in a close house. All the Sobralias like a bright light. On the other hand, the Masdevallias at Burford are all kept shady, and their healthy green leaves, unmarked by that objectionable spot, are pleasant to look at. In one of the warm Orchid-houses Eucharis amazonica are flowering fairly, planted out on the ground beside the hot-water pipes. It likes shade, and if it succeeds in such a position it will be useful.

In the Nepenthes-house the giant N. Mastersiana × and the handsome N. Northiana are among the most striking, and the great specimen of Ouvirandra fenestralis as flourishing as ever. In the large cold greenhouse, which is always filled with good plants in bloom, are a very fine collections of tuberous Begonias, some of the best doubles being Antoinette Querin, a very full, pure white; Mrs. J. L. Macfarlane, a fine double cerise; Madame Comesse, salmon-rose; and Formosa, a rosy-carmine variety like a double Hibiscus. The best singles were Nymph, a grand white with rose edge; Marquis of Bute, bright crimson; Dr. Masters, a splendid dark crimson; Ball of Fire, scarlet; and Marchioness of Bute, rosy pink. In the same house are some finely-bloomed Agapanthus, both blue and pure white; a good lot of the handsome carmine Impatiens Sultani, Abutilons, &c.; an overhead Bomarea conferta, which produces dense clusters of crimson flowers. Many other houses are devoted to the culture of Gardenias, Tydæas (grandly in bloom now), and other good and showy plants, and in particular a good collection of those often mismanaged bulbs — Nerines, Freesias, Lachenalias, Ixias, &c., which make such a welcome show in their season.

Outdoors a good selection of herbaceous perennials are grown, good patches of each of the showy things, many of them being now in bloom. The florists' flowers are also well cared for, some good varieties of Carnations being particularly noticeable; of these the large bright rose-pink variety, Mary Morris, is certainly the best either as a pot-plant or in the open border it is equally free, fresh-looking, and sweet. A very fine hybrid crimson, raised by Mr. Powell when at Bury St. Edmunds, proves quite hardy at Burford, where it is now furnished with fine heads of bloom. For cutting the different varieties of Alströmeria are found very useful, as they give attractive flowers, which last well by reason of the buds opening well in water. On the flower garden near the new fountain Canna iridiflora Ehemanni is in great perfection, its foliage being very ornamental, and its spikes of crimson flowers very effective. Turning by the dell, so inviting-looking with its wild and naturally growing foliage, in which the clumps of Polygonum and Doronicum are so effective, we pass out, having passed without seeing many more good things than we have noted, no doubt.

LYTHRUM SALICARIA VAR. ROSEA is a handsome variety of the common Loosestrife, with rich rosy-red flowers. It is, besides, a somewhat dwarfer grower than the type. The common purple Loosestrife of our river banks and ditches also makes a beautiful garden plant even in dry poor sandy soils. This species is interesting, not only on account of its trimorphism, but also as an example of a water-lover which thrives in cultivation under conditions so extremely different from those which obtain where it occurs in a state of Nature.

CURIOSITIES IN COMMERCE.

IT is often said that England is the manufactory for the world, which is so far correct that there are few countries open to commerce that do not take some or other of the endless articles we produce, in the shape of either necessaries or luxuries. And in not a few cases at the present day there are what may be termed the curiosities of commerce, where we import from other lands articles all but identical with those we supply to the same countries. With commodities of a nature such as are dependent on a considerable amount of solar warmth and a cloudless sky, or, failing this, artificial heat, such as exotic fruits—in the artificial production of which we long had no competitors—of late years there has been direct evidence such as leads to doubts about our being able to hold our own against those so far more favourably circumstanced in climate as enables them to effect as much with unheated glass coverings as we can with the aid of costly appliances and fuel wherewith to obtain the heat to make up for our want of sun. This, it is needless to say, is most apparent in fruits that will keep for some time after they are ripe, and bear carriage—such as Grapes, which are ever likely, as hitherto, to be the most prized for their general properties. Year by year the influx of early foreign Grapes has kept on increasing, until the price which the growers are able to get is not more than a fourth of what they used to receive. True it is that although many of the foreign Grapes are fair to look at, and passable to eat, yet they are far behind in flavour the well grown, fully ripened fruit of home growth; and although the home growers of early Grapes are in danger of being run off the road with the second-rate foreign produce, still there are those in the world who know what is good to eat as well as to look at. In confirmation of which it is only necessary to point to Mr. Shaw's extensive vineries at Cowick Hall, near Goole, Yorkshire, where fine Grapes in quantity are grown, most of which are now being sent to St. Petersburg and Copenhagen, which most people will admit is a curiosity in commerce. A recent opportunity of seeing the vineries at this place enables me to speak of the extent and quality of the Grapes there grown for the capital of the vast Northern Empire.

The first is a lean-to range, facing south, 300 feet long by 17 wide, in four divisions, the first of which is filled with a mixed lot, consisting of Black Hamburgh, Foster's Seedling, and Buckland Sweetwater. Much of the crop was cleared, the remainder, and also the Vines, bearing evidence of the satisfactory condition they are in. In the adjoining house all are Black Hamburghs except two or three Muscats. Most of the crop here also was cleared, the Vines, as in the preceding house, being in good condition. The next division is all Muscats, bearing a full crop of even bunches that have been unusually well set. The last of the range contains several varieties, but are all being inarched with Gros Colmar and Alicante. The Vines are carrying an excellent crop of over 500 even bunches, averaging eighteen to nineteen to each rod. Mr. Carter, the gardener here, has a wholesome aversion to over-cropping; all through the place the Vines are not allowed to bear more than they are able to finish properly. The Vines in this range are thirteen or fourteen years old, planted inside near the front wall, with full-sized inside and outside borders. Three years back I understand there were next to no active roots inside; there has been no renewal or addition to the inside borders except some 12 inches of new soil laid on about 3 feet in width next the stems of the Vines, but water without stint, much of which is applied in the shape of rich liquid-manure, has been given; and Mr. Carter says that the borders are now so full of feeding fibres that it is scarcely possible to get a fork in to loosen the surface without doing injury.

Fronting this range, and in a line with it, at a distance which allows a good sized double border, there is a span-roofed range in two divisions, each 40 yards long by 8 yards wide, planted on both sides, the borders all outside. The eastern division is filled with a mixture of sorts seven years planted; they consist of Gros Colmar, Lady Downe's, Alicante, and Barbarossa, all of which by inarching are ultimately to be Gros Colmar: they are bearing a full crop of even handsome bunches. Mr. Carter follows the long-rod system with most of his Vines, and fire-heat is kept constantly going all the season—with the latest kinds and Muscats from the time they are started. The next of these very large houses has been partly replanted one year, and some a year longer. The youngest portion of these Vines are carrying two to three bunches each, that will run from 6 to 9 lb. per rod; the older ones have six bunches each: they bore three last year, which evidently from the strength they have attained did not overtax them. For their long journey the Grapes are packed in boxes about 16 inches square, and of sufficient depth to allow the bunches to be stood on end with a good bed of cork-dust in the bottom of the box under them: each bunch is enclosed in tissue-paper, and the boxes filled as full as they will hold. Two long span-roofed houses, each 26 yards long by 4 feet wide, are devoted to Cucumber growing, and were bearing freely: the sort is a seedling of Mr. Carter's—a thick short-necked fruit that runs from 15 to 18 inches long, and evidently a useful kind. There is a good crop of Apricots on the walls, and some Plums on a few sorts such as Victoria, which is largely grown here; a straight run of high wall, from 250 to 300 feet long, is covered with this useful sort. *T. B.*

WAYSIDE FLOWERS AND AQUATICS.

WHOEVER adds to his avocation or profession the study of the British Flora, if merely for the purpose of amusement or hobby, finds much to interest wherever he goes, and besides many a useful lesson may be learned, by one inured to habits of careful observation. If his occupation is sedentary or of such a nature as to necessitate his confinement indoors all day, an occasional holiday is looked forward to with an eagerness unknown to any but those who have experienced it. The long summer evening or early morning serves the same pupose, affording recreation to the body as well as relaxation to a mind wearied with study or other monotonous routine of daily life. The dusty highways under a burning sun offer few attractions to the ordinary tourist or holiday maker, yet in the course of a long day's journey the botanist seldom fails to collect a considerable number of attractive or interesting members of a flora that seldom or never occur in great abundance in any given locality.

The hedge-banks and waste places in the neighbourhood of Taplow, Buckinghamshire, are clad with a varied vegetation, often rank and weedy, amidst which, however, scattered specimens of Verbascum nigrum may be noticed, with its straight rod-like stem, and deep yellow flowers in clusters on a long raceme. It is one of the most frequently cultivated species, and although not the largest flowered is a good herbaceous plant, and being perennial it will last in good condition for many years, whereas the bulk of those in gardens are biennial in their nature and require frequent renewal. Salvia verbenaca, the smaller flowered of the two British species, is sometimes grown in gardens. It was formerly used as a medicinal plant, and is also interesting as a representative of a genus numbering about 450 species. Centaurea Cyanus, of the clearest lively blue, adorns the Wheat fields in some places in a conspicuous manner. Many varieties in different shades of colour are cultivated in gardens, but the typical wild flowers excel those varieties in brilliancy. Papaver Rhœas and Chrysanthemum segetum, with scarlet and golden-yellow flowers respectively, occupy a similar position in other fields, and although extremely ornamental in their way find little favour in the eyes of the husbandman. The Chrysanthemum will flourish and perpetuate itself in any cultivated field, but it grows most luxuriantly and developes its showy character best in Turnip, Mangel Wurzel, and other fields where the crops do not overtop it. In wet seasons, when it is difficult to clean the land, fields frequented by this Composite often assume a uniform golden-yellow appearance. Many far less ornamental annuals than this are assiduously cultivated in gardens. If cultivators would take it in hand properly great improvements might be effected in dwarfing its habit by selection, or otherwise enhancing its value for horticultural purposes. Camelina sativa occurs sparely in waste places. It is an introduced plant, but generally recorded in the British flora, and the seeds are valued economically for an expressed oil, while the residue is made into cake for cattle feeding purposes. A white variety of Ballota nigra occurs on the hedge-banks. Conium maculatum is a weedy plant, with handsome foliage, but notable on account of its poisonous properties and its disfavour in the neigbourhood of human dwellings. Cichorium intybus grows in great abun-

dance on some banks and waste places. The herbage is coarse and rigid, but the broad heads of dazzling blue florets, reminding one of the Bluebottle, compensate for this ungainliness. It is the origin of Chicory, cultivated for its roots, which are ground up and used to adulterate Coffee. Another plant frequent on railway embankments is Daucus carota, the wild Carrot, all but unrecognisable beside its modern representative in cultivation. In shady sheltered places, more or less overhung with trees, Circæa lutetiana, Poa nemoralis, and Euphorbia amygdaloides find a suitable home.

As one winds along the narrow hedge-begirt highways in the parish of Egham, Surrey, the country proves itself considerably undulated, and even hilly, adorned with many fine large trees, and occasionally exhibiting glimpses of finely-built mansions and private residences nestling among the trees, or crowning some rising knoll. Hypericum hirsutum, H. perforatum, and Lamium galeobdolon affect the hedge-banks and bushy places, and together with Genista tinctoria form a series of pretty yellow flowering plants suitable for rockwork. The Lamium is a conspicuous plant when in flower, rather variable in its leafage, and constitutes a separate genus according to some authors, on account of the nearly equally three-lobed lower lip of the corolla. Genista tinctoria in full flower is distinguishable at a great distance by its erect racemes of golden-yellow flowers. It grows here in strong patches, frequenting dry fields, and is barely surpassed for horticultural purposes by the double form, which is more durable.

Salvia verbenaca and Cichorium intybus occur

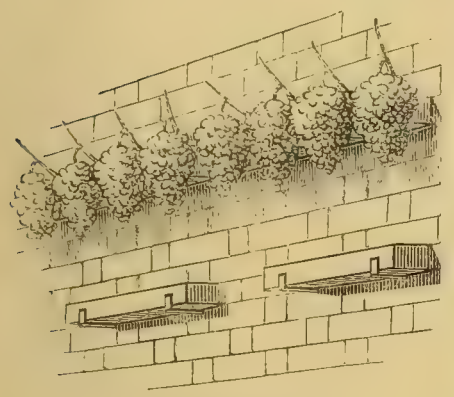


FIG. 22.—WARD'S GRAPE TROUGH.

again in considerable quantity by the roadsides about Staines, Middlesex. The former is evidently at home, and ripens seed in great abundance. Scabiosa arvensis, Erodium cicutarium, and Convolvulus arvensis, with its white variety, are all showy or interesting plants. Agrostis spica-venti, deserves a place amongst ornamental grasses, for which its large plume-like panicle is very suitable. In a piece of waste water within a few yards of the highway and close by the village itself, some of the noblest and showiest of British aquatics occur in great abundance, completely taking possession of the pond. The open flowers of Nymphæa alba emit an agreeable but not very powerful odour, and are only preserved from the public by the difficulty of getting at them. This, the queen of British aquatics, is very variable, even in a wild state, both in size and colour. At the railway stations the keen observer can detect in the hands of pleasure seekers who have been collecting in the Thames varieties of a decidedly rosy tinge of colour. Butomus umbellatus must always rank close to the Nymphæa in ornamental value, and flowers here with great freedom. Hottonia palustris, Sagittaria sagittifolia, Potamogeton natans, and Iris Pseudacorus occupy their respective places. The first named is remarkable as a member of the Primrose order for its finely divided submerged leaves, characteristic of many aquatics.

The bed of the river Colne, where accessible to the public near Bedfont, Middlesex, is almost choked up with an aquatic vegetation noticeable for its various shades of green. Most of the plants are submerged and the flow of the water being strong, they flower very sparingly, but ripple and wave in the direction of the current. Amongst these the pale yellowish-green foliage of the Brandy-bottle, Nuphar luteum, is conspicuous; and various darker tints are exhibited by Callitriche hamulata, C. vernalis, Ranunculus heterophyllis, Potamogeton densus, Œnanthe fluviatilis, and the long ribbon-like pale green leaves of Sparganium natans, Myosotis repens, and Thalictrum flavum occupy the wet margins of the banks or even wade in the water; Daucus carota, Hypericum perforatum, Verbena officinalis, and Galium verum occupy the drier parts, which they decorate in no mean manner. *X.*

NEW INVENTIONS.

WARD'S PATENT TROUGHS FOR HOLDING AND KEEPING GRAPES AFTER THEY ARE CUT FROM THE VINE.—Mr. George Ward, of Bishop's Stortford,

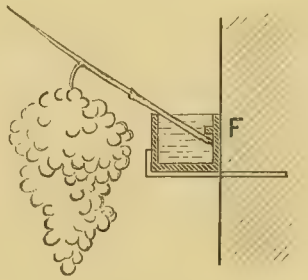


FIG. 23.—WARD'S GRAPE TROUGH.

who is well known in gardening circles as a large grower of Grapes, has invented a new trough for keeping Grapes after they are cut from the Vine. The trough is oblong in shape, about 17 inches long, and being composed of glazed earthenware, is clean, durable, and cheap. The troughs are single and double in form, the former (see figs. 22 and 23) for fixing with L-shaped holdfast against walls, and the latter (see figs. 24, 25) for standing on wood frames specially constructed for the purpose. The method of fixing and using them will be clearly seen on

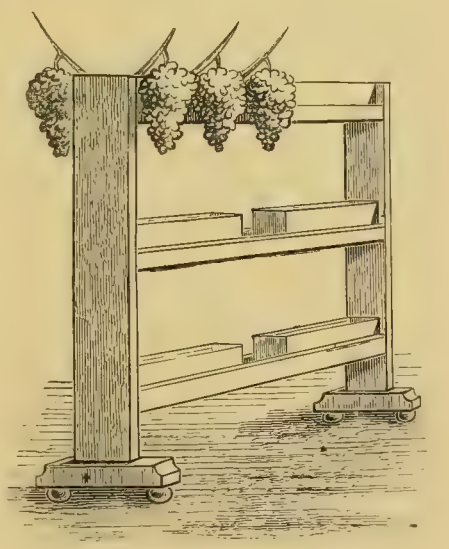


FIG. 24.—WARD'S GRAPE RAIL AND TROUGH.

reference to the illustrations, particularly to the larger scale sections (figs. 23, 25).

It will be seen that both single and double troughs have a flange or ledge, F F. The shoot bearing the bunch of Grapes should be cut sufficiently long to admit of the bunch hanging free of the trough, while the end of the shoot is lodged under this flange as shown. No tying or fastening of any kind is required the weight of the Grapes being sufficient to hold the bunch in position. By this simple contrivance much labour and trouble is avoided. The Grapes hang in their natural position, without the trough being tilted, and consequently there is no danger of any drip. There is no danger of the end of the shoot being out of the water, and yet the trough need not be filled brimfull. Water can be put into the troughs without disturbing the Grapes, and each bunch can be lifted out for examination, and replaced with the greatest ease. Mr. Ward used these troughs for keeping 800 lb. of Grapes from January till the first week in April of the present year, during which time they were seen by many large Grape growers, who expressed their unqualified approval of the invention.

The troughs are not placed close up end to end, but kept about 7 inches apart, as shown in the sketches. It would be useless to place them close, because if a bunch is hung at the extreme end of each, another could not in any case be placed between.

FORESTRY.

A SCHOOL OF FORESTRY. — In the House of Commons recently Sir J. Lubbock called the attention of the Government to the great desirability of taking some steps to promote the study of forestry in this country. They were sometimes told that forestry was not of much importance, because our national forests were small compared with those of several other countries. Even the national woods and forests were, however, of sufficient extent to make the question between good and bad management one well deserving of attention. It was estimated that altogether there were some 2,500,000 acres of woodlands; but in addition there were also, at least, 5,000,000 or 6,000,000 acres which it would pay to plant. Indeed, Mr. Howitz estimated the amount at 5,000,000 acres in Ireland alone, and M. Boppe, in his report, ex-

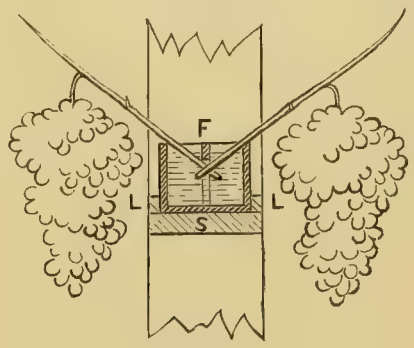


FIG. 25.—SECTION OF WARD'S GRAPE TROUGH AND RAIL.

pressed his opinion that in Scotland also there "still remained 5,000,000 acres capable of furnishing valuable forests." A remarkable illustration of what might be done by judicious and systematic planting was afforded by the French "Landes." This region, which thirty years ago was one of the poorest and most miserable in France, was now one of the most prosperous. The increased value was estimated at no less than 1,000,000,000 fr. Our own experience in India was another striking case. The institution of the Forest Department in India was first placed on a scientific footing in 1863, and what had been the result? In 1870 the forest revenue of India was £357,000, with the nett income of £52,000. In 1880 the gross revenue had reached £545,000, while the nett income had increased from £52,000 to £215,000. One fundamental difference between the management of woods and forests in England and France seemed to be that we planted and then thinned, and then finally cut down the trees. The French foresters, on the contrary, made it an essential part of their system that the forest should renew itself. All the great countries of Europe had established forest schools. Great Britain was the only exception, and it was surely very remarkable that it should be so, when they considered that this empire was probably the most richly endowed with woods and forests of all the countries of the world. The arguments in favour of establishing a forest school in this country were very strong. Last year, when he called the attention of the Government to this question his hon. friend the Secretary of the Treasury promised to give it his serious consideration. He would respectfully urge the Government to appoint a committee, or to appoint a commission, to inquire into the whole subject. Averse as he was on general principles to Govern-

ment interference with private enterprise, the objection did not seem to apply here. He did not at present ask for a Government school; it would be preferable, if it were possible, to utilize the national forests in connection with Cirencester, Downton, or some other similar institution, but he would press on the Government and on the House the great need of some such step, the result of which, he felt satisfied, would be that our existing forests and woodlands would be made more remunerative, large tracts would be profitably planted, we should create additional employment for the people, considerably increase the incomes of the landholders, and make a substantial addition to the wealth and resources of the nation.

Indian Forestry.—The following note has been drawn up by Sir George Birdwood, to accompany the exhibition of Indian forest produce in the International Forestry Exhibition, Edinburgh :—

It may be said that forest conservancy in India originated in Edinburgh. Roxburgh, Wallich, Royle, and others of the early explorers of Indian botany, long ago called attention to the destruction which had been going on for centuries of the forests of India and Burmah. In primeval times India, as is evident from the descriptions given in the Ramayana and Mahabharata, was covered with dense forests, the productions of which found their way into the commerce of antiquity long before the name of India itself became generally known. Thus most of the costly spices used for embalming the dead in Egypt, and by the Jews in the service of the Tabernacle at Shiloh and Jerusalem, must have been received from India. Recently, also, it has been discovered that Indian Teak was used in the building of the temples of Babylonia, although it is uncertain whether it was employed in their original construction during the period of the first Chaldean kingdom, from about the thirteenth to the twentieth, and possibly thirtieth century B.C., or in their restoration during the Babylonian empire of Nebuchadnezzar, in the seventh century B.C.

In the course of the gradual occupation of the valley of the Indus and of the Jumna and Ganges, by the Aryan race, and of Southern India by the Dravidian races, the alluvial plain of Hindustan, and the upland basaltic plain of the Deccan became partially deforested; but primeval forests still covered all the southern slopes of the Himalayas, and the mountainous coasts of Malabar and Coromandel, and the wide hilly region of Central India, north and south of the Nerbudda and Taptee rivers, still known by the name of Gondwana, "The Gond Forest."

It was in the troubles following the decline of the Moghul empire that these remaining forests were gradually encroached on, and vast extents of the surface of the country converted into wild wastes; and it was the destruction of vegetation over wide extended areas at this time which thenceforward rendered India liable to desolating droughts, and the consequent calamity of often-recurring famines.

Where the British Government first felt the pinch was in the increasing difficulty found in providing timber of the required scantling for shipbuilding; and with the view of keeping up the supply of Teak for the Government dockyard at Bombay, the late Dr. Gibson, of the Medical Establishment in that Presidency—where he was long known to the passing generation by the affectionate soubriquet of "Daddy Gibson"—was appointed in 1846 Conservator of Forests. Such was the state of things in India, when, in 1850, the British Association, which met in that year at Edinburgh, appointed a committee to report on the probable effects of the destruction of tropical forests, and the report was presented in the following year, when the Association met at Ipswich. The broad view taken of the subject in the report, and the weight of the facts brought forward in illustration of the immense importance to the economy of civilisation of the conservancy of the forests of the tropics, attracted the attention of the Court of Directors of the Honourable East India Company, and within a few years afterward regular forest conservancy establishments were sanctioned for the Madras Presidency and British Burmah.

Before 1848 no check whatever had been imposed in India on the reckless clearing of the primeval forests for cultivation, and no heed was taken of the effect such clearing, particularly on the slopes of hills, would have on the rainfall. In 1848 Major-General Frederick Conyers Cotton, C.S.I., then a captain in the Madras Engineers, urged on the Madras Government the necessity for taking some immediate steps to preserve the forests bordering on Coimbatore and Cochin from further denudation by the reckless wastefulness of the native contractors who farmed the forests for the supply of Teak-wood for the Bombay dockyard. On his recommendation Colonel (then Lieutenant) Michael, C.S.I., who had had opportunities of observing forest conservancy on the continent of Europe, and who, as an accomplished *shikari*, had a wide practical acquaintance with the forests of Southern India, was appointed to give effect to General Cotton's proposals. Colonel Michael organised an establishment, opened out roads and timber slips down the mountain passes, and soon scored a financial success. His efforts in providing efficient conservancy were far more important. It became at once apparent that it was better in the interests of the State to preserve the magnificent natural forests of the Presidency than to raise an immediate revenue from them; and the first step taken in this view was to lease an extensive Teak tract from the Zemindar of Colangode, and to buy up all his minor contracts with timber merchants. The whole of the southern forests in the Madras Presidency, down to Cochin and Travancore, were thus placed, and have ever since remained, under strict conservancy. A system of clearing belts of brushwood to preserve the young saplings from fire was also introduced, the hill tribes being employed in the work; and in this way the destruction of the principal forests of Southern India was most opportunely averted.

Within a few years the advantages of these measures, and the great success of Colonel Michael's work, were so clearly seen, that the court of directors, who had just then been so strongly impressed by the report of the British Association, sanctioned the extension of General Cotton's scheme to the remaining forests in the Madras Presidency, and, in short, inaugurated the organisation of the regular forest department, not only in Southern India, but for the whole Indian peninsula and British Burmah. About the same time Colonel Michael, whose health had been undermined by seven years of incessant exposure to the dangers of forest life, when little was known about healthy or unhealthy seasons in the jungles, was forced to retire from his appointment, the work of which was taken up by Deputy-Surgeon-General Hugh Cleghorn, M.D., as the first regularly constituted Conservator of Forests in the Madras Presidency.

Cleghorn carried out the organisation of the new department in Madras with such astonishing energy and success that he was soon called on to extend the sphere of his operations into the Punjaub. He also afforded Dr. Brandis, C.I.E., the most efficient assistance in introducing and systematically working conservancy in the forests of Bengal, and with the most satisfactory results. Brandis had previously done very distinguished forest work in Burmah, and in 1862 was appointed Inspector-General of Forests under the Government of India. From that time the successful future of forest conservancy in India was assured. The eminent scientific and administrative abilities of Dr. Brandis have been widely recognised; and to him we owe the introduction of the Indian Forest Acts, which, while strengthening the hands of the Government, have secured to the people the maintenance of all the ancient rights and privileges inherited by them from time immemorial.* He, in fact, by his great capacity, his wise recommendations, and his personal example of enthusiastic devotion to duty, has made the Forest Department of India what it now is.

The cost of the three establishments (including Bengal and Burmah), Madras and Bombay, in salaries, travelling allowances, contingent expenses, &c., is £190,000 per annum.

The Forest Acts, originated by Brandis, arose out of the necessity of giving a legal status and legal authority to the new department. There are at present three of these Acts, viz., No. VII. of 1878, which applies to India generally, including Bombay; No. XIX. of 1881, which applies to British Burmah only; and No. V. (Madras) of 1882, which applies to the Madras Presidency. They are all based on the same principle, and do not widely differ in details. Speaking broadly, they divide the forests of India under three select classes—Reserved forests, protected forests, including Vellore forests, and forests which are private property.

The reserved forests are under the direct control of the department, and are managed exclusively as a source of immediate and prospective profit, their limits being surveyed and demarcated, nomadic cultivation within them forbidden, destructive undergrowth cut out, the annual hot weather fires guarded against, and the cutting of timber strictly regulated. The protected forests are subject to less stringent supervision, and the people retain therein, subject to regulation, their hereditary rights of cultivation, pasturage, and wood cutting; only certain kinds of timber being protected. Private forests are controlled only to such an extent as is necessary to prevent their destruction. Besides these there are the State plantations devoted to the cultivation of timber trees.

The area of the reserved forests of India is about 46,000 square miles. That of the unreserved forests has not yet been ascertained: while that of the plantations under the Government of India and Madras alone is 41,000 acres. The area of the plantations in Bombay is not known; but it is stated that the great problem of Indian forestry, viz., the re-wooding of waste districts, has been grappled with in the western Presidency with great vigour and success, by sowing broadcast the seeds of all sorts of forest trees and shrubs, the result of which action is now beginning to be seen in the appearance everywhere of "countless millions" of vigorous saplings. Extensive fuel reserves have also been provided, and are strictly preserved in all parts of India, to meet the extension of railway lines throughout the peninsula.

The nett revenue derived from these operations, after deducting all charges for salaries and working expenses, now amounts to over £300,000. Prior to 1848 the revenue from the Indian forests was nominal, and there was no forest conservancy.* And this vast and beneficent change, which will gradually also reduce droughts and famines in India to a minimum, has been achieved in a single generation, or in the brief space of thirty-five years.

We have an illustration in Northern Afghanistan of how misgovernment may convert a once fertile and wealthy country, such as Afghanistan was under the commercial rule of the Buddhists, into an inhospitable desert, and all India, within the solstitial line, would probably have by this time been reduced to the same condition but for the English conquest of the peninsula.

When, about ten years ago, Mr. Griffin W. Vyse was executive engineer at Dheera Ghaza Khan in the Punjaub, he planted over 1,000,000 timber trees along the frontier joining India to Afghanistan and Beloochistan, and scattered 5 tons of their seeds broadcast everywhere; and in 1877 at least 50 per cent. of these seeds had sprung up into flourishing young trees. Great zeal was also shown by Mr. C. E. Gladstone, who was an assistant commissioner in the Punjaub at this time, in encouraging the planting of trees along the base of the Suleiman range. The Punjaub Government have also formed a forest of trees several miles in extent at Chunza Munza, near Lahore; and the result of all this planting on our Indian north-west frontier is already being felt in the gradually increasing annual rainfall in the southern Punjaub, Southern Afghanistan, Northern Beloochistan, and Northern Scinde. When these results become more marked, and extend further into Afghanistan, the predatory character of the population of that country is sure to be strongly modified; and should Russia adopt a wise system of forest conservancy in Turkestan we may hope for the gradual restitution to the whole of Central Asia of the prosperity it once enjoyed.

* One of the main difficulties with which the Forest Department almost throughout India has had to cope is that of the customary privileges of common. The people, especially the agriculturists, have for generations been accustomed to use the forests for cutting firewood, grazing, and even clearing for cultivation, without restriction. The exercise of these rights, without regulation, was tending to the certain destruction of the forests, and, with the rapid increase of population under the British Government, was every year becoming more injurious to the public welfare. It was, therefore, absolutely necessary to bring the Indian forests under some control; while at the same time it was felt that to suddenly prohibit the traditionary rights of the people in them would be most cruel and unjust. What, therefore, Brandis aimed at in his Acts was to forbid altogether the exercise of those privileges which were incompatible with the existence of the forests, and to allow others to as great an extent as possible. Thus in every locality some of the forest land is still left open to grazing and firewood cutting, &c., and some strictly closed for a period long enough to enable the trees on it to recover.

* Before 1848 the forest revenue, which was treated as a branch of the land revenue, was very trifling. In 1867–68 it amounted to £331,000. In 1881–82 it amounted to over £874,000; and as the total charges under all heads amounted to £557,000 the nett forest revenue was exactly £317,000. It must, however, be borne in mind that, even from a financial point of view, the annual revenue which forest conservancy has as yet provided is utterly insignificant when compared with the capital value of the Indian forests redeemed by the British Government from certain destruction.

The planting of trees has always been a highly honoured popular custom among the natives of India, and the Brahmins have a saying, wisely devised to encourage the practice, that "He who plants a tree lives long." We may augur, therefore, from the success of our forest department, a long life to British rule in India.

It is a happy omen also that the first International Exhibition of Forestry should have been appointed to be held in the stately capital of Scotland, where scientific forestry throughout the British empire received its earliest impulse—and that the exhibition should be so much indebted for its prosperous issue to the co-operation of Colonel Michael, the pioneer of practical forestry, and of Cleghorn, the father of scientific forestry in India. *George Birdwood, June* 18.

Orchid Notes and Gleanings.

Vanda Sanderiana.—I forward for your inspection a flower-spike of Vanda Sanderiana bearing five flowers, which, you will observe, are quite as large, or larger, than those figured in the *Orchid Album*, but not quite so rich in the colouring. The flower-spike of this grand species rises straight above the leaves, the flowers are very evenly placed around it, and not too much crowded together; so that, looked at from any side, it is seen to great advantage. This plant was bought by Mr. Wood at Stevens' sale-rooms on January 31, 1884, at that time having seven leaves, which were considerably shrivelled and wrinkled, and, of course, no live roots. I placed it in a Teak basket amongst charcoal, crocks, and sphagnum, mixed, and hung it up to within 2 feet of the glass in the Cattleya-house; there it has remained ever since it came into my hands, making thick, strong roots very freely. The old leaves are now fresh and plump, and two new ones are partly grown. From what I have seen of it I should say that it is quite as good a grower as any other Vanda, and certainly a magnificent variety. *James Routledge, Gr. to C. L. Wood, Esq., Freeland, Bridge of Earn, Perth, July* 21.

The Flower Garden.

The late heavy rains have tended to harden the soil so much that it will be necessary to loosen the surface of the beds to prevent the soil cracking, and at the same time admit air to the roots. If after this is done a light mulching of well decayed dung or leaf-mould be applied the plants will be greatly benefited. Frequent attention should still be paid to pegging and tying till the beds are completely furnished, and when this is effected continue to pinch and prune the plants to their allotted spaces, never allowing them to grow beyond their proper limits, nor permitting them in any way to interfere with the general effect of the other parts of the design. Keep all the freest flowering plants, such as Verbenas, Calceolarias, Violas, and Lobelias, well supplied with liquid-manure, so as to prevent exhaustion and assist them in supporting the enormous amount of bloom which they produce under good management. If at regular intervals a portion of the blooms are removed a prolonged season of flowering will be the result. All subtropicals will during windy weather require careful attention in staking and tying, so as to prevent injury to the branches and foliage. These are, owing to the almost tropical weather we experienced in June, unusually vigorous and effective this season, and where they have been judiciously planted with plenty of space to develope their increased size they produce a fine effect. Carpet beds are now very bright, but as they are making very rapid growth additional care in trimming will be required to keep them within proper bounds.

Mixed Borders should be gone over frequently, so as to remove all decayed flowers, and where the foliage also decays suitable plants should be introduced so as to fill up all blank spaces and keep up a succession as long as possible. Spring plants removed to the reserve garden should now receive attention. All bloom should be persistently removed, and propagation, either by cuttings or division of the roots of many of the subjects, should now proceed with all speed so as to complete this important work in this department before the time arrives for propagating the summer plants. A north border is the best and most convenient position for this work, as there are few hardy plants which will not succeed either as cuttings or divisions at this season of the year, if so placed, provided the soil be rather sandy and the surface be kept freely loosened. Aubrietia, Polyanthus, Arabis, Alyssum, Daisies, and all similar plants, if divided now, will make fine tufts for autumn planting. Cuttings and layers of Carnations, Pinks, and Picotees, may also now be made, and by striking them thus early they will take root quickly and make finer plants and not be so liable to disease as the late-struck plants. This is also an excellent time to sow the East Lothian, Intermediate, and Brompton Stocks, as well as the various hardy biennial and perennial plants required for next year's display. The tenderest varieties should be sown in pans or boxes and placed in a cold frame, but the hardier ones are better sown in a warm, sunny border.

Roses should now be propagated by budding and by cuttings. In budding care should be taken to choose a period when the sap of the stock flows freely, so as to enable the bark to be easily separated from the wood. If left too long in the season the bark adheres firmly to the wood, the operation cannot then be properly executed, and many failures occur in consequence. Another frequent source of failure is caused by fermentation after the bud is inserted, owing to the operation having been performed in wet weather. Dry dull weather should, if possible, be taken advantage of, and if bright hot weather should occur, a few extra strands of worsted over the buds will be found advantageous in preventing too great evaporation of moisture therefrom. In propagating by cuttings—a practice which, since good stocks have become scarce, is yearly becoming more popular—care should be taken to select only sound, well ripened shoots of moderate strength. In choosing the cuttings, such as have a joint or keel at the base should be selected; cut close to this with a sharp knife, and plant the cuttings in a hand-light in a rich sandy border in an open position, where they should be kept shaded from bright sun so as to retain the foliage on them as long as possible, removing the shade and glass covering in the evening, so as to expose them fully to the night air and refreshing dews. The soil must be sandy, and, what is most important, it must be rammed thoroughly firm round the cuttings, or failure will be the result. This is the most simple, inexpensive, and perhaps the most successful method of propagation either for H.P.'s, Teas, Noisettes, or almost any kind of Rose; and as there are few varieties which refuse to grow successfully on their own roots, it is somewhat surprising that this method is not more generally practised. *F. S. C.*

The Hardy Fruit Garden.

Those who are fortunate enough to possess good standard trees of our very early Pears, such as Doyenné d'Eté, or Citron des Carmes, will now be able to have these at their table. Early Pears as a rule are short-lived, and need to be gathered only a few days before required for use; indeed, some are best as gathered fresh from the tree. Oftentimes good Pears, not only now, but during their whole season, are spoiled by going over the fruit, and feeling to see if they are getting soft and fit for use. This is a ruinous plan, and many are thus spoiled. The only and proper way to determine when they are fit for table is a firm pressure at the base of the stalk. If it feels hard, no harm is done, and the fruit is unripe; but if the flesh yields under the pressure the Pear is ripe, and the fruit is uninjured. Too great care can hardly be exercised in gathering Pears, as they are easily bruised and spoiled for keeping. This is one of the seasons when walls are advantageous. Standards are not a full crop, while those on walls are an average. It often happens, especially on light soils, that Pears do not grow half their size simply from the want of moisture. In cases of this kind it is well to remove a spit of soil from the top, and give the tree a thorough soaking of liquid manure, and return the soil again to its place, and mulch the ground. This should not be done just before ripening, because it may spoil the flavour, but while the fruit is growing. Dry weather has the effect of driving the birds more into the garden, so that every net must be looked up for protection. This particularly applies to Cherries, but even white Currants, which will be useful in the dessert by-and-bye, will need the same care. The Grape Currant, an old red kind, we usually enclose with mats, and thus keep them late for tarts, and flavoured with the autumn-bearing Raspberry they are very acceptable. The old Warrington Gooseberry is a favourite with most people, and keeps well, therefore make sure of them. Time was, not long ago, that there was only one kind of black Currant, but now we have half-a-dozen varieties, all desirable in their way. Carter's Champion is the latest introduction, and seems to be deserving a place in the Orchard. It often happens that Raspberries will in light soils throw up too many suckers: where this is the case their numbers should be reduced, unless it is contemplated to make a new plantation. Plums on standards are under an average this season; but on walls they are plentiful—the July Green Gage, Early Prolific, and Early Favourite are all showing signs of ripening on south walls. Guard against tom-tits, they will oftentimes commence on them before they are ripe. Nuts promise a fine crop, so be prepared in districts where squirrels abound with a gun and a license to carry the same, for much as one laments to kill these pretty animals, there is nothing for it but to do so where they are numerous. Figs promise well: stop strong shoots, and thus divert the sap to the rapidly swelling fruit. The Strawberries are nearly over; as soon as the layered plants are removed get a sharp spade and chop off all the runners, thus increasing the crowns. By no means have recourse to the barbarous practice of mowing off the leaves, and on no account remove the mulching at present; the plants will suffer from drought in consequence, and the crop will be less next year. In favoured localities the Sweetwater and Black Cluster Grapes still bear fruit. Keep the shoots thin and nail them into the wall, and with the exception of the leading shoots stop them one joint beyond the cluster, but it is well never to be too exact on this point, for Vine leaves are often wanted for garnishing or packing fruit, and those are found useful to save the indoor Vines. *J. Rust, Eridge Castle, Sussex.*

The Kitchen Garden.

Seed Sowing.—Next week will be a good time to make sowings of the following kinds of seeds, viz., Wheeler's Imperial Cabbage, for early spring use; Black Seeded Bath Cos, Hicks' Hardy White Cos, and Lee's immense hardy Cabbage Lettuces, and Batavian and Curled Endive, to supply the autumn and winter salading. Another sowing of French Beans may still be made on a warm border, trusting to the chance of a fine autumn to complete their growth. Also a sowing of Early Nantes Horn Carrots, for drawing young, should be made in a like situation. I may remark, respecting seed-sowing in July and August, that the seed should be sown as soon as the ground is dug, and before the soil becomes dry. The ground should be trodden and raked, and the seed sown, covered, and watered (if necessary) in the ordinary way, and a mat or two be placed over each bed, which will prevent the soil and seed immediately under from being parched up—a condition respecting which there has not been much cause for apprehension of late. Moreover, the more equable temperature and condition of the soil thus ensured will be the means of hastening the vegetating of the seeds.

Planting, &c. — Further plantings of Broccoli, Savoys, Coleworts, Veitch's Autumn Giant Cauliflowers (good breadths for late use), Lettuce, Endive, and Wheeler's Imperial Cabbage should be made forthwith. The early plantings of Broccoli, Savoys, Borecoles, and Coleworts will now require to be earthed-up. Advancing crops of Cauliflowers, French and Broad Beans, will also require attention in the same direction. Neither must the destruction of weeds among crops and on walks in this department be forgotten, else they will quickly establish themselves, however distasteful their appearance may be to those who delight in the possession of a clean and neat garden. *H. W. Ward, Longford Castle Gardens, Salisbury.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	July 29	Sale of Flowering and Imported Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	July 30	Warwick Horticultural Society's Show.
THURSDAY,	July 31	Royal Oxfordshire Horticultural Society's Show Sale of valuable Imported Orchids, at Stevens' Rooms.
FRIDAY,	Aug. 1	Sale of the Third Portion of Mr. Bockett's Orchids, at Protheroe & Morris' Rooms Flower Show in Westwood Park, Southampton (and Aug. 4)
SATURDAY,	Aug 2	Northamptonshire Horticultural Society's Show (and Aug 4) Grand Floral Exhibition in Sefton Park, Liverpool (and Aug. 4.)

A DISCUSSION has been lately held as to the propriety of adopting in zoology a triple combination of names — *e.g.*, Turdus migratorius propinquus for a particular thrush. The subject is one which has been discussed over and over again at congresses, conferences, and meetings. Committees have been appointed to consider it, reports have been drawn up embodying certain recommendations, and yet people mostly go on their own way—committees, conferences, and reports notwithstanding. We say mostly, for we must make an exception in favour of the Daffodil Conference. One practical outcome of that gathering was a determined attempt to abolish a NOMENCLATURE which had become preposterously cumbrous, and was in effect throttling the subject it was intended to promote. The discussion above alluded to had reference simply to natural products, and especially to birds, but, of course, the principle is the same throughout every department of natural history; and as it is one in which the readers of this journal are, for many varied reasons, greatly interested, we need make no apology for adverting to it. In gardens additional complexity arises from the occurrence of artificial hybrids or crosses, from the accidental appearance of "sports" and from the selection and fixation of particular variations often more distinct in appearance than are different species so-called. When these things have to be named for garden purposes it is, unfortunately, not a question of trinomial nomenclature, but too often of penta, hexa-hepta-nomial appellations. Look, for instance, at the names of the varieties of Holly, of Japanese Maples, or of certain Conifers like the Retinosporas. All this superfluity is, in the instances alluded to, quite needless, and we hold it up to our zoological *confrères* as a sample of the sort of thing they may expect when every variation from a well known central type is made to bear as many names as a Spanish grandee. Justification of the practice is, of course, alleged in the circumstance, that the long-winded epithets are more or less descriptive, just as the alarmingly long names which chemists now adopt for their productions are. This justification may properly be admitted and acted on, when we have but one single qualification to deal with. We might conveniently call a red Rose Rosa rubra, if we were quite sure there was only one Rose of that colour; but when it comes to a question of shades of colour innumerable, and admitting of no definite lines of demarcation, then, though we may properly keep to the original primary epithet it would be foolish to attempt to express each particular shade of colour as an addition to the name, and to subjoin other words indicative of the form of the leaves, the nature of the prickles, and so on. To do so is to confound the objects of nomenclature with those of description, to go back to the awkward system which LINNÆUS so happily overthrew.

Dr. COUES, a learned American ornithologist and advocate of the trinomial plan, points out, as reported in *Nature*, that nomenclature is a necessary evil, and the point, according to him, is to employ that method of naming objects which should most clearly reflect, not only the characters of the objects themselves, but our ideas respecting those characters and the view we take of them. Dr. COUES goes on to say that the old idea of species is quite exploded, no such thing existing any more than a genus; and so intimately are all the forms of animal and vegetable life inter-connected that if we could have them all before us at one time there would be no break between them, and no names would be possible. As a matter of abstract theory we sympathise with Dr. COUES, but in practice it is impossible, always or even generally to combine satisfactorily the requirements of simple nomenclature with the description of forms and the statement of their status and relations. It will be seen, however, that the garden practice, which we deprecate, is quite in harmony with Dr. COUES' proposal, in so far as it is an attempt to reflect the character of the objects themselves. The view we take of the relative degree of importance is indicated by the number of words in the name; if two only, then we have to deal with a species—if more, with variations from that species in their respective degrees, and according to their position to the right of the decimal point, as in Mr. BAKER'S happy illustration at the Daffodil Congress. It will be remembered that the learned historian of the Narcissi, and of so many other groups of plants in which gardeners are interested, took the species (with its affixed decimal point) as the unit; the higher groups of species, such as genera, orders, &c., as aggregates to be placed in their due order to the left of the decimal point, while fractions or variations of the species-unit were placed to the right. This would be a very simple way of putting the matter when once we had made up our minds as to the value of any particular group and had consequently determined the right position of the decimal point, and the due relative position of the figures; but if from carelessness or inability we have not done so, it is obvious what confusion and false notions might and indeed do arise from our heedlessness or incapacity. But although garden practice, ill regulated though it be, may be in harmony as to general principles with the views of Dr. COUES and the proposal advocated by him, we must say that the extreme inconvenience of the plan in practice outweighs any theoretical appropriateness, symmetry, or relevance that it may have. Moreover, the proposal is based, though, as we have seen, not avowedly so, on the idea that we know what a species is. As a matter of fact, so far from knowing what a species is, we do not even know that species exist, we only infer that they do. What we call species are mere conventions, figments of the imagination. The man who has the clearest judgment and the largest knowledge will, no doubt, form the most correct opinions, but they will be but opinions after all—judgments, as Dr. ASA GRAY says. This being so, there is some inconsistency in the attempt to apply to an unstable ideal a rigidly exact system of nomenclature. Would it not be better at once to recognise the fact that names are only labels or symbols, and that nomenclature is purely a matter of convenience, to be regulated by conventional rules, established for the sake of promoting facility of reference? In ordinary life we deal with the members of the family of SMITH or JONES by affixing the names JOHN, THOMAS, WILLIAM, as the case may be, without troubling ourselves to mention their several distinctive characteristics as observable in relative age, feature, limb, or complexion. Thus, in most cases, two names are amply sufficient for the purpose intended. We do not even greatly concern ourselves if the man we call CODLIN is in reality more like a Cucumber, nor if the man we know as SHORT stands over six feet in his stockings; and so, on like grounds, at any rate for garden purposes, we strongly advocate the abolition of all polyonomatous epithets. Nine-tenths of the purchasers of a fine Holly or Clematis do not—more's the pity—care a rush what is the precise botanical status of the plant they buy. They purchase it with other objects, and for them the shorter and more convenient the name the better. The happy few who do care for such things, whose interest is such that they want to know all they can know about them, would be just as well pleased with the shorter name, always provided it be correctly applied, because they would not in any case of doubt trust to any name or combination of names, but would investigate the matter for themselves, or at least turn to those sources of information in which they would be likely to find the information they required. For neither class of persons—the one with superficial and merely sensuous attachment to plants, the other with intelligent love of them—is this cumbrous and often absurd system of nomenclature required. For both the sweet simplicity of the Linnæan system of nomenclature is well adapted, and if the gardener wants more than this in the way of nomenclature—as, in fact, he mostly does—the system for him should be simple and unpretending, not one aping the technicalities of the professed naturalist, or calculated to mislead by creating an assumption that the plant to which it is attached has been critically examined and its place with reference to the decimal point ascertained beyond possibility of doubt.

Mr. J. E. HARTING, in alluding to climatic variations, stated as his opinion that, if such variation were sufficiently well marked to distinguish it at once from the species of which it was said to be a variety, he would prefer to regard it as an allied species, and to bestow on it a specific name retaining a binomial nomenclature; and this view will commend itself to cultivators. On the other hand, naturalists by profession interested in ascertaining, or at least of forming, some opinion as to the relative place in the hierarchy of a particular form, would demur, and from their point of view rightly so, to the establishment of so many forms of equal rank. The difficulty might be met if we could agree to a uniform system of terminology for orders, genera, species, subspecies, varieties, &c., so that one might see by the construction of the name what the relative rank in order of precedence of the plant was. LINDLEY effected this to a large extent when he made the names of all the natural orders end in "aceæ"—a most convenient plan, though one which ultra purists denounce as an infringement of the laws of priority. BENTHAM and HOOKER, though in our opinion unfortunately—not adopting the "aceæ" as the termination of the names of the orders—adopted the termination "ales" for the cohorts, and so far conformed to the principle we are advocating. Now, if some cunning word-spinner would coin some form by which we could tell from the name only whether we had to deal with a genus, a species, a subspecies, or a variety, much of the existing difficulty would be obviated. A binomial nomenclature—one word for the genus, the other for the species or subspecies, or variety, as the case may be—would for most purposes be sufficient, or if not, the form of the name would indicate the rank of the plant we were dealing with.

—— THE SCOTCH PINE —Now that attention is being called to the necessity for replanting our forest land and covering our barren hillsides with trees, no apology will be needed for including among our series of figures of trees that of our native Scotch Pine—Pine it is, and not Fir, in spite of the frequency with which it is called by the latter name. It is a genuine native of North Britain, as well as of Northern and Central Europe, and is represented by numberless varieties, interesting botanically and also economically, seeing that the timber of some, such as of the Riga variety, is of superior quality to that of others, independently of soil. Generally it does best on a dry, sandy loam, intermixed with stones. As an ornamental tree it is strikingly picturesque, and its richly coloured orange-pink bark is most effective, especially when wet. There is a golden-leaved variety which is striking, especially in spring. In our volume for 1876, vol. v., p. 822, is an interesting note on the Pine as wild in Scotland, to which we may call the attention of our readers. As to the quality of the wood, some difference of opinion exists as to the relative excellence of home-grown or

foreign timber—a point, perhaps, of the less importance as our own supplies are so very insufficient to meet the demand. Its habit of growth shows that it is a tree which likes full exposure to light; and this may be one reason for the alleged superiority of foreign-grown specimens. Trees of 120—150 years of age are the most useful for timber, as the sap-wood is of



Fig. 26.—The Scotch Pine.

relatively little worth. From its hardihood, cheapness, and the facility with which it may be obtained from seed, the Scotch Pine may be recommended as one of the very best species to be introduced where plantations are being carried out. Our illustration (fig. 26) is from a photograph by Mr. Vernon Heath.

—— Salisbury Rose Show.—On the 17th inst. a meeting of the local committee of the National Rose Society's recent exhibition in Salisbury was held in the City Council Chamber, the Mayor presiding, to decide what should be done with the funds resulting therefrom. It was shown that after all expenses attending the meeting (including the payment of prizes) had been settled, there remained in the hands of the local Hon. Secretary—Mr. W. H. Williams—a balance of £179 11*s.* 5*d.*, and on the proposition of Mr. Councillor F. Griffin it was decided to deposit this sum in one of the City Banks, in the names of the Mayor, Town Clerk, and Mr. W. H. Williams, as the nucleus of a fund to be used in resuscitating the defunct Wiltshire Horticultural Society. With this object in view it was also decided that Mr. Samuel Griffin should withdraw from the same bank the £33 deposited there in his name as Secretary of the said defunct Society, and re-deposit it in the names of the gentlemen above-mentioned, thus making a reserved fund of £212 11*s.* 5*d.* With this handsome horticultural nest-egg to its credit in the bank it may be reasonably assumed that henceforth Salisbury, after an interval of eleven years, will again figure on the list of successful annual if not bi-annual, horticultural exhibitions. Before the meeting broke up votes of thanks (proposed by the Mayor, and seconded by Captain Kelsey) were accorded to the Lord Bishop of Salisbury for his kindness in granting the palace grounds for the holding of the show, than which it would be difficult to find a more suitable place; to the Mayor (T. Futcher, Esq.), not only for presiding at the various committee meetings, but also for his assistance to the local Hon.

Sec., to whom also a well-merited vote of thanks was given for the energetic and business-like manner in which he discharged his onerous duties.

—— THE PEOPLE'S PLANTS.—How often have we heard those familiar with the market plant manufacture—for such it really is—express wonder as to the ultimate destination of the tens of thousands of plants that are weekly carried into the metropolitan market. A saunter about the streets of London and its most populous suburbs on some few summer evenings, but specially upon Saturday evenings, would reveal much that had hitherto been thought inscrutable. The plant Cheap Jack is an active agent in plant disposal. Standing upon his cart, the which is laden with all kinds of plants in season, a couple of flaming lamps illuminating the varied colours of the flowers beneath, Jack, by the vigour of his oral powers, soon gathers an admiring throng. Fuchsias just now are favourite window plants, and taking up a pretty well flowered plant of Mrs. Marshall in a 48-pot, he invites his admirers, in language that is bold if not choice, to offer him 1*s.* 6*d.* for it. He knows, however, that it is but the price of his own ambitious fancy, and not a selling one; so down he runs the whole gamut of intervening figures till he seems to think 4*d.* a fair one. Perhaps if it be an exceptionally good plant he hangs fire over 4½*d.*, but more often he drops down even to 3½*d.* and 3*d.*, at which figures he clears off his stock eventually. Fuchsias, scarlet, zonal, and other Pelargoniums, yellow Calceolarias, Lobelias, Musks, Creeping Jennys, and scores of familiar London barrow plants, all find purchasers presently; and Jack, late at night, goes home a little the richer of course, but his method of business has for its basis the stock maxim, Small profits and quick returns; and therefore he grows rich but slowly, especially if a wet Saturday night interposes, as that means a heavy loss and a wasted opportunity. Besides Cheap Jack, vendors of plants almost by thousands may be found on certain evenings in the chief market thoroughfares of the metropolis selling things horticultural of the most heterogenous kind. In this way myriads of poor homes get plants to help light and cheer them, amidst the gloom of the London desert.

—— THE COW PARSNIP.—This majestic, though weedy plant, is now very imposing in the Prince's Street Gardens, at Edinburgh. We are under the impression, however, that the planting of this, in the case referred to, has been overdone, and that well arranged patches at irregular distances apart would certainly have displayed a greater amount of taste than the promiscuous method adopted. The gardens on the whole look extremely well, the numerous beds being not only planted out with taste but are kept in a neat, trim style as well.

—— HUDDERSFIELD CHYSANTHEMUM SOCIETY.—One of the horticultural signs of the times is the remarkable development of Chrysanthemum societies of late. One has just been founded at Huddersfield, and the first exhibition will take place on November 14 and 15. There are several classes open to all England, one for forty-eight blooms, twenty-four Japanese and twenty-four incurved, the prizes being £10, £5, and £3. It is perhaps to be regretted there is such a discrepancy between the 1st and 2d prizes, as it generally happens that the two best collections come very close together in point of quality.

—— AURICULA, PAGE'S CHAMPION.—Inquiries for this Auricula of late reveal the fact that it is believed only three or four plants exist about the country, and that it is extremely difficult, if not impossible, to obtain one. It is said that this Auricula—so much thought of by some, and so little esteemed by other good authorities—is actually dying out from sheer weakness of constitution. If this be so, there are but few—very few—high-class green edges to take its place, unless the Rev. Mr. HORNER is enabled to put some of his into commerce. The sooner this can be done the better.

—— INJURY TO CONES.—"W. E. G." sends us a cone of Abies nobilis with a cup-shaped cavity large enough to contain a hen's egg scooped out at the top of the cone. From the appearance of the cone we suppose that some bird is the delinquent. The common cross-bill (Loxia curvirostris) frequently commits great havoc by splitting the cones of Firs; but we never saw a cone treated exactly in the same way as this. Perhaps some of our ornithological readers will kindly give us their opinion.

—— GATEHOUSE RIVAL PEA.—Last week Mr. GILBERT sent us from Burghley a dish of Marrowfat Peas, under the name of Gatehouse Rival, and which proved of remarkably fine quality. We have no particulars as to any other characteristics of the variety, but on the score of flavour it leaves nothing to be desired.

—— DESTRUCTION OF AN OAK TREE BY LIGHTNING.—Mr. W. R. HARRISON, of Maidstone, has kindly sent us a photograph by Messrs. FIELD & SON, of the same town, of an Oak tree which was struck by lightning on Saturday, July 5, at Mote Park, the seat of the Dowager Lady HOWARD DE WALDEN. The tree is described by the *Maidstone Telegraph* as a fine one, of some 8 feet in girth, and between 40 and 50 feet in height. "It was growing in a slight hollow, near to the pavilion and the workshops, and though we have examined many Oaks which have been struck by lightning we never saw one so totally wrecked. The trunk was completely broken through about 4 feet from the roots, and from thence was divided into two parts, the roots being absolutely drawn out of the ground. For a circle of about 150 yards in diameter the ground was strewed with splinters and *débris*, and one piece of the root was shivered into hundreds of fibres. Of the thousands of pieces into which the tree was splintered, several of large size are still to be seen high up in the neighbouring trees, while one piece, weighing possibly 6 cwt., and 8 feet in length, has been thrown upwards of 80 yards, and must have passed over three or four lofty trees in its flight. Several of these pieces have also cut off branches from the surrounding trees. Much of the wood has the appearance of having been pounded under a Nasmyth hammer, so complete is the disintegration of the fibres. Whether the flash was an upward or downward one we are unable to say, but from the height to which great masses of timber were evidently thrown, it would appear that it was one of those cases where the earth was positively and the clouds negatively charged. But this is a question for experts in electrical science. Certainly, the force must have been inconceivably great, and it is a fortunate thing that it missed the buildings close at hand."

—— MR. ECKFORD'S SWEET PEAS.—A charming bouquet of these has just come to hand from Boreatton Park, Baschurch. In the fine soil of that district the flowers attain to a large size, and are richly coloured. Whatever may be the different opinions as to the distinctness of these new varieties, Mr. ECKFORD must be commended for his persistent attempts to add to our lists. The leading ones sent were as follows:—Imperial Blue, rich deep blue, flushed with purple on the crest—very fine and distinct; Purple King, bright plum-purple crest and bright blue wings—very fine and distinct; Cardinal, a fine and striking variety in the way of Invincible, scarlet, and with a pleasing flush of purple on the wings; Queen of the Isles, the crest scarlet, with white markings and flakes at the sides, the wings white, flaked with rosy-purple—very pretty and pleasing; Princess of Wales, white, dashed and flaked with bright blue—large and very pretty; and Isa Eckford, fleshy-pink crest, the wings almost white—very delicate and pretty, and, in addition to the size and substance of the flowers, they were richly fragrant. A bouquet of such pretty flowers is a floral dish fit to set before a queen.

—— ROTHAMSTED EXPERIMENTS.—With regard to the Rothamsted experimental grass plots it may be stated that this has been an exceptionally good year for the growth of leguminous plants, particularly of Lathyrus pratensis and Lotus corniculatus. The experiments on various leguminous plants in Hoosefield have also showed good results. Plots 6 and 7 (mineral manures alone) never looked more brilliant with the bright yellow flowers of Lathyrus and Lotus than in the present year; and on a strip of the plots to which ground chalk was applied three years ago, the growth of the leguminous species was most remarkable, and contrasted strongly with plot 8, which had the chalk as plots 6 and 7; but without any potash. The growth of Lathyrus pratensis on plot 15—previously 550 lb. nitrate of soda, now mineral manures alone (including potash)—is increasing rapidly. The graminaceous species were stemmy, and yielded comparatively little undergrowth: hence the crops were not large, but when the food supply was in sufficient quantity and in an available form the quantity of hay harvested generally exceeded the average. On plot 3, without manure, the yield of hay was 16½ cwt. per acre, which is 5½ cwt. less than the average for this plot; while the three plots the most highly manured have given a yield of hay of 54⅝, 65⅛, and 70¾ cwt. per acre respectively; showing 3⅝, 8⅛, and 7¾ cwt. per acre above the average for these plots. The range is thus 16⅛ cwt. of hay without manure to 70¼ cwt. per acre with a liberal supply of plant food. Dactylis glomerata was more matured at the time of cutting than for several years past, as was Anthoxanthum odoratum, this species having generally shedded its seeds. The season of 1884 appears to have been more favourable for maturation of the various species in the mixed herbage of grassland than for luxuriant growth.

—— CATERPILLARS ON THE OAK.—The Oak caterpillar, lately noticed in these columns as being so destructive in the Ardennes, and also in the neighbourhood of Namur, in Belgium, is at work much nearer home, having made its appearance in the northern extremity of Middlesex; but not in such numbers as they were two or three years back, when, following the northern line from Hatfield up as far as Barnet, many of the trees might be seen with all the leaf-stalks adhering as bare as fish-bones that had been cleanly picked. Here the caterpillars appear to be hatched on the surface of the ground, as before the trees were touched the whole surface was covered thickly with their webs. Loss of leaf to any considerable extent, especially in the spring, invariably weakens the growth for the current season. It would be interesting to know if any diminution takes place in the annual thickening of the trunks of such trees as are badly affected, and if so to what extent.

—— EFFECTS OF INSECTS ON PLANTS.—The weakening effects which the myriads of fat aphides have on the plants they prey upon is often, we think, not fully realised. We see the crumpled, disfigured foliage and buds of the Roses and other plants they infest, and the drain their insatiable appetites inflicts on such things as Peach trees, when they are allowed to get ahead, as shown by the curled leaves, which do not attain their full size, many falling off prematurely; but we do not always realise to the full the injury they do. Perpetual Roses on which aphides are allowed to prey on the first growth that is made in spring, yield comparatively few flowers on the second crop of shoots. The fruit of Peaches and Nectarines, on which the insects are let to get to a head in spring never attains the size it does where cleanly cultivation is carried out; nor when autumn comes is the wood formed during the season in so likely a condition for yielding a crop the ensuing summer, being usually weak, with comparatively small, thin buds. Red-spider and thrips on such plants as they affect, where suffered to remain unchecked, not only do much harm that is directly noticeable in the current season, but equally so afterwards. A case in point which came under our notice will do something to confirm this. A good-sized Peach tree, which for some years has had the greater part of its head trained on the roof of a building, with the remainder of the branches against the front, last summer carried a full crop, but before the fruit began to ripen the portion of the tree occupying the roof became badly affected with red-spider before it was noticed, the leaves on this part, as usual where this diminutive pest exists, losing much of their colour. The insect never found its way to the branches below the eave. When the fruit was ripe there was such a marked inferiority in the flavour of that borne on the spider-affected part to that on the portion which was free from its attacks, that no one not knowing the circumstances of the case could have credited that both were borne by the same tree. This spring the bloom on the spider-affected head of the tree was weak and poor compared with that on the lower non-attacked branches. The peculiar position of the tree, with one part of its branches laid close to the hot, dry-tiled roof, and the lower parts against the wall where there would be some moisture from the soil, no doubt caused the insects to keep where the dry conditions they so much like were most present—giving an opportunity for noting the different effects resulting from the presence or absence of the spider not to be seen in the case of trees of this fruit when wholly

trained against walls in the usual way. Success in gardening is only attainable by an incessant war against insects, which, like the weeds, are no light infliction on those who follow the pursuit of the First Gardener.

—— Early Apples. — The old-fashioned Keswick Codlin, so long the sheet-anchor of the market Apple grower for early produce, and which rarely fails him, appears this season in many parts not to have been able to bear the pinching spring weather we had, as the fruits are few and far between. This is a decided loss, not alone to the grower, but also to the many who look on Apples—as they deserve to be—as the best of cooking fruits. The near relative to this good old sort, Lord Suffield, is not so thin of fruit, but is far from carrying its usual load—a circumstance which is not altogether a loss in the case of this variety, which not unusually suffers premature decay by over-bearing, unless the wise precaution is taken of clearing half the crop as soon as it is usable, which relieves the trees, that are afterwards not so much distressed in bringing the reduced portion of the crop to a larger size.

—— Bacteria.—It is a comfort to find that some Bacteria are not as black as they are painted. Not long since the seeds of Abrus precatorius (the pretty scarlet seeds with a black patch at one end used for beads, and, as it is said, for diamond weights) were stated to owe their medicinal properties to a bacillus. Under the name of "Jecquirity" the seeds have been used in the cure of inflammatory disease of the eyelids, and in India the seeds have been used to poison cattle. It is now asserted that the poisonous ingredient is a nitrogenous substance like albumen, and that the bacilli found in the seed have nothing to do with the poisonous effects of the bean. It may turn out that the "comma-shaped bacillus" may have nothing to do with the production of cholera.

—— The Hampshire Fruit Preserving Company (Limited) has been formed for the purpose of carrying on the business of jam manufacturers, preservers of fruit, &c., in the centre of the extensive fruit growing district in the south of Hampshire. It is proposed to establish a factory at Titchfield (where convenient premises are available), and to furnish the same with the best modern appliances for pulping and preserving large quantities of fruit. The prospectus states that "In the district referred to, which includes the parishes of Titchfield, Hook and Warsash, Sarisbury and Swanwick, Burlesdon, Botley, Wickham, Fareham, Rowner, and Crofton, the Strawberry crop is one of great importance—about 800 tons of this fruit alone being gathered annually within a radius of three miles of the centre selected for the proposed factory. As showing the necessity for the existence of this company, it may be stated that during the last few seasons the only outlets the growers have had for their produce have been the markets in London and other large centres where accommodation for the disposal of perishable fruit, and especially Strawberries, has been so inadequate that frequent gluts have occurred, and to prevent complete loss the fruit has often been sold at so low a price as to render the returns, after payment of carriage and market expenses, wholly unremunerative. It has been observed that the jam-makers and fruit dealers reap an advantage from such gluts, and obtain as additional profit a portion of the growers' capital. Consequently meetings have been held from time to time for the discussion of protective measures, with the result that the growers have expressed themselves strongly in favour of an organisation of this description, which will render them, to some extent, independent, by providing a market at their very doors, saving them the expenses of packing, carriage, market tolls, and commissions, and removing the speculative character of the trade under the present system."

—— Sydney Botanic Garden. — We understand that Messrs. T. H. P. Dennis & Co., of Chelmsford, have been entrusted with the carrying out of a series of glass-houses for the Botanic Gardens, Sydney, New South Wales, under the superintendence of C. Moore, Esq., and to the designs of Mr. Fawkes, managing partner of this firm. The scheme comprises a complete arrangement of winter gardens, &c., of Messrs. Dennis & Co.'s patent wrought-iron construction, and the work, already sanctioned by Government and now approaching completion, consists of two ranges of span-houses, all 20 feet in width, one adapted for stove plants and the other for Orchids. In each case a central tiered stage is provided, as well as side stages next the glass, the latter so arranged with slate sides and perforated slate bases that plunging and propagating operations may be easily carried on. The houses are provided with the most recent improvements in ventilators, which are so disposed that fresh air may be admitted at pleasure either under or over the plants, or both. In the former case the air impinging upon the pipes is heated before it reaches the plants. The same firm will also supply the whole of the heating apparatus for these houses. The apparatus consists of a single large Dennis' patent horizontal tubular boiler, with mains, valves, and connections, so arranged that each part of each house can be heated perfectly separately and independently.

—— Astrantia Biebersteini.—In comparison with its large extent, the order Umbelliferæ furnishes very few really good garden plants. The subject of this note, however, is a decided exception, and is worthy of a place in any collection of ornamental herbaceous plants. It grows between 2 and 3 feet in height, and bears very numerous umbels, which are distinctly tinged with rose or rosy-pink. It is, moreover, a thoroughly hardy plant, and one which is quite able to take care of itself in the mixed border.

—— Hypericum empetrifolium.—The Crowberry-leaved St. John's-wort is one of the prettiest of all the members of a genus which furnishes not a few first-rate garden plants. It is a small, erect, much branched, glabrous shrub, about a foot in height, and makes an excellent pot-plant for window or conservatory decoration. In order to preserve the species from the danger of being lost during severe winters, it is safer to winter a pot of cuttings in a cool frame. It is a native of Greece, and was introduced to this country nearly a century ago by Messrs. Lee, of Hammersmith. A good figure of this pretty little shrub appeared in one of the most recent numbers of the *Botanical Magazine*, t. 6764.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 21, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W. :—The weather has continued in a cloudy, unsettled, and showery condition in all parts of the kingdom. Some thunderstorms were experienced in different parts of England between the 17th and 19th. The temperature has been below the mean in all districts, the deficit ranging from 1° to 3°. The maxima, which were registered on different days in the various districts, did not exceed 75° at any station. The minima were generally recorded either on the 20th or 21st; in "Scotland, N.," the thermometer fell to 35°, in "England, N.W.," to 39°, and in most other districts to between 40° and 46°. In the "Channel Islands" temperature did not fall below 55°. The rainfall has been rather more than the mean in "Scotland, E.," "England, E.," "England, S.W.," and the "Channel Islands," and about equal to it in "Scotland, N.," but ess than its nominal value elsewhere. Bright sunshine has varied from 25 per cent. of the possible duration in the "Channel Islands," and 26 per cent. in "Scotland, N.," to 40 per cent. in "Scotland, W.," and 43 per cent. in "England, N.W." Depressions observed :—The barometer has been comparatively high and uniform over the greater part of France, while depressions—some of which have been rather extensive—have continued to travel in a northerly or north-easterly direction outside our western and north-western coasts. In addition to those, however, a few subsidiary disturbances have passed across our islands from the westward. Moderate to strong southerly winds were general over the United Kingdom during the earlier part of the period, moderate westerly to north-westerly breezes on the 18th and 19th, and variable winds during the 20th and 21st.

—— Gardening Appointments.—Mr. W. H. Bole, lately Foreman at Sherwood Park, Tunbridge Wells, as Gardener at Byfleet Lodge, Weybridge, Surrey.—Mr. E. Leaney, late Foreman at The Gardens, Ashurst Park, as Gardener to Thomas Christy, Esq., Malvern House, Sydenham, S.E.

BEDDING VIOLAS.

Despite the dry weather which prevailed during spring and early summer, many a patch of garden ground looked gay by reason of pretty patches of free-flowering Violas, owing to their dwarf tufted growth having kept the soil about them cool and pleasant to the roots. Beds of Pansies held on with surprising vitality and vigour in soils that were deeply penetrated by their roots. And the Pansy is, and ever will be, a popular flower, while its congener, the greatly improved Viola, takes deservedly high rank amongst bedding plants, occupying a foremost place in gardens, and most appropriately so, for we now possess almost innumerable shades of colour, many of them displaying tints such as are scarcely met with in any other bedding plant. Then they give so little trouble, for cuttings, planted on a shady cool border during July and August give plenty of strong rooted plants for planting out in the autumn for the spring display. The soil in which they are planted should not be too rich, and in exposed situations fully open to the sun it is well to give them a surfacing of light dry decomposed manure or leaf-soil to protect the plants in trying weather. This mulching is equally useful in summer and winter. All the early blooming varieties commence flowering in March, and continue in bloom a long time ; in the cooler northern and midland districts they bloom freely until quite late in the summer. Even in the south some of the newer varieties are found to resist mildew remarkably well, because of vigorous and tough constitutions. In the hotter and drier districts of the south and west Violas can be used with excellent effect among Pelargoniuns, Calceolarias, and other plants, the shade thus afforded to the roots greatly assisting the durability of these Violas. Those who have not yet tested the effect of Violas with other plants may safely do so, and will find much satisfaction in the results. Beds of mixed Violas are lovely objects, and in order to secure a rich spring display the plants should be put out in October or November, if possible, or even earlier. When planted late in spring a good head of bloom seldom results.

A very large number of new varieties are sent out annually, and it is impossible to grow all ; at a rough guess there are from 200 to 300 varieties, and, it must be stated, a great many of these are comparatively worthless, and have to be rejected. Those who in late years, and are now working for the raising of new varieties adapted for bedding purposes, have laboured with no small degree of success to obtain decided clear colours in the flowers ; a free blooming and compact sturdy habit of growth, self-coloured flowers as far as possible, free from any dark blotch or markings, and thoroughly distinct from others already sent out. In Countess of Hopetoun, Queen of Spring, Queen of Purples, True Blue, Duchess of Sutherland, and Mrs. Dr. Hornby, or Countess of Kintore, are to be found six varieties of surprising quality, all distinct in colour, and all blooming at one time.

The following list of varieties contain many of the best and most useful among the Violas, and in order to assist purchasers they are arranged in colours. We commence with the white-flowered varieties :—Mrs. Gray, a most useful variety, pure white in colour, but with a tendency to discolour in hot and dry weather, many of the flowers becoming tinged and striped with pale blue. It is of free habit, an early and continuous bloomer, very fragrant, and, excepting the tendency to discolour, the purest white Viola grown. Jeffreyanum is a compact growing white Viola with a few trifling bars of blue in the centre, habit good, an early and continuous bloomer, but not pure white. Mont Blanc is smaller in size than Jeffreyanum, but otherwise resembles it. Lady Polwarth is a good useful white, free from markings, of excellent habit, an early and continuous bloomer, and a most useful variety. Pilrig Park is a very showy free-blooming kind, of compact habit, flowers large, with bars of violet in the centre, but in hot weather the plants frequently perish as if wanting in persistency of habit. Countess of Hopetoun is a very superior Viola, first-class in every respect, and stands A 1 amongst whites. It is of compact habit, sturdy in growth, early, very free and continuous in bloom, of a clear white colour, and one that should be widely grown.

The leading purple-flowered varieties are as follows : —Cliveden Purple compacta, a seedling from the old favourite Cliveden Purple, but of a closer and more

robust habit, larger flowers, a wonderfully free bloomer, and a telling variety for its rich colour and masses of flower. Next comes Crimson Gem. This name is somewhat of a misnomer, as it is of a purple hue, with a brighter shade in it. It is a pretty variety, and in the absence of better varieties will be welcomed. Le Grand is a large-flowered pale purple variety of inferior quality, but a profuse bloomer, is early and continuous, and of a compact and sturdy habit. Queen of Purples stands A 1 amongst purples; it is an excellent variety, of dwarf and compact habit, and a wonderfully free bloomer, not so deep in colour as Cliveden Purple compacta, but a rich coloured and very telling kind, an early and continuous bloomer. Queen of Violets is smaller in the flower and deeper in colour than Queen of Purples, but good in every respect. Triton is a variety superseded by Queen of Violets. Mrs. Charles Turner is a variety of a very dwarf compact habit, a profuse bloomer, early and continuous. The colour is of a rich blue-purple; it is quite distinct in every way, and a useful and beautiful variety. Paragon is an extra fine variety, of a dark purplish colour. Teviotdale bears a resemblance to Crimson Gem, but has more of purple in the colour. Pantaloon is shaded crimson and violet.

The lilac-coloured varieties form a very pretty group, and comprehend some very pretty types, such as Elegans, pale lavender-lilac, exceedingly pretty, and very striking in a mass; an early and continuous bloomer. This variety is a strong grower and soon fills a bed. Duchess of Sutherland is first-class in every respect, and should be in every collection; colour bright lilac, a very pleasing shade, compact habit, very free blooming, early and continuous. Fairy Queen is of a similar habit to the Duchess, but of a lighter shade of colour, and is an excellent variety. Queen of Lilacs is an immense bloomer, lower petals blue-lilac, top petals darker, good habit and constitution, stands dry weather well, a very early and continuous bloomer, and most effective in a mass.

There are a few excellent yellow Violas. Foremost we place Queen of Spring, as it is one of the best bedding Violas known; it is of a clear light yellow colour, and almost without any bars in the centre of the flower. It is early blooming and continuous, and flowers profusely. Golden Queen of Spring is deeper in colour than the foregoing, and of a closer and more compact habit, a great bloomer and a first-rate variety. Yellow Dwarf is a remarkable variety, and a good companion plant for the blue Lobelia; very dwarf and compact in habit, and most floriferous, early and late; colour, clear bright yellow, without any marking whatever. Ardwell Gem is a first-rate primrose-yellow variety, of excellent compact habit, early, very free, a continuous bloomer, and a decided acquisition. Brilliant is a deep yellow variety, with a small blotch in the centre, and the flowers somewhat irregularly formed, but of good habit; early, a free bloomer, and a tellling yellow.

Of blue Violas there are many. That Blue Bell will be grown in almost every garden for years to come is a statement that may be safely hazarded; but Blue Bell, popular as it is, is deficient in some requisites, and we name the four following varieties as coming nearest to our ideal bedding Viola:—True Blue (Dean's), in every respect a first-class variety, of sturdy, close habit, an immense bloomer, very early and continuous. It should be in every garden, for it is a most valuable blue-flowered variety. Archie Grant is really a bedding Pansy, but of excellent habit, and the colour a rich blue-violet. It is a first-class variety, and when well known will be certain to become a great favourite. Holyrood is a well-known blue-violet coloured variety, with a bronzy centre. It is a very free-blooming summer variety, and a great favourite, but does not flower early. Lord Darnley is a very fine and free summer bloomer, a seedling from Holyrood, but very much deeper in colour, which is of a rich blue velvety-violet, and, being very free, makes an excellent mass: it is in every respect a very fine variety.

There is a very interesting section of tipped or fancy Violas, a few of which are extremely pretty and effective. A selection of the best varieties gives Countess of Kintore, pale greyish-purple, with large white blotches, a handsome and very showy kind, and an earlier and continuous bloomer; a most attractive decorative variety. Mrs. Dr. Hornby, similar in colour, marking, and habit to the foregoing, but the blotches are not so white; it is an admirable decorative variety, of close, compact habit, and will be a great favourite. Duchess of Albany has pale lilac-purple flowers, with large greyish-white blotches, of fine form, and a first-rate variety; quite new. Columbine is white, margined with lilac; very pretty and distinct. Mrs. J. Cowan is of a rich purple colour, with white blotches on each top petal, very fine form, a new and extra fine variety. Harlequin, has small flowers of exquisite form, the lower petals rich rosy-purple blotched with white, the top petals are wholly white; a very distinct and charming variety. Novelty, rosy-purple with white upper petals, fine and pleasing.

There is another class of bedding Violas which may appropriately come under the head of miscellaneous; they are Bronze Queen, a variety which does not come under either of the classes previously mentioned; the colour is novel and quite distinct, being of a rich bronzy-reddish-brown colour, and very telling. It is not a very early bloomer, but is a decided acquisition. Skylark is a white variety with a margin of pale blue, pretty and distinct, but wonderfully like an old Pansy of forty years ago.

The foregoing make a selection out of a large and thoroughly representative collection. They comprise all the best of the English and Scotch raised varieties. In only one instance is the raiser's name given, and that to distinguish it from another variety with the same designation. We have thought it best to withhold the raisers' names, as the foregoing estimate is altogether without prejudice. It is time that Mr. Barron got together, at Chiswick, a collection inclusive of the new varieties of the past two or three years. They are many, and we believe they will bear comparison with the older varieties. Let us hope that raisers will take the initiative, and send collections to Chiswick in the autumn, so that next spring may witness a thoroughly complete, and we hope successful, trial. *Viola.*

HERBACEOUS PLANTS AT SWANLEY.

During the present exceptionally dry season gardeners round London, and southwards thereof, hear of the copious drenchings that have fallen in some of the western and northern counties, but look in vain for the rain which cometh not, in more than showers sufficient to lay the dust for an hour or two, after which it again blows about, leaving little trace of the sprinkling. To fully realise the over-dried condition of the soil, it is necessary to remember that last autumn's rainfall was unusually light, followed by a winter without snow, and in this part of the kingdom comparatively rainless, there not being enough to raise the brooks more than once or twice (and this only little). This was followed by a dry spring, to be only remembered for its cold easterly winds, which helped to reduce the already small amount of moisture in the land, the natural result of which is, that beyond the limited number of things that can be helped by watering, there is unusually little top-growth, especially in the case of such things as hardy herbaceous flowering plants, about which the season is not without its teachings, showing that where the land is of good quality and well cultivated, although the growth is short and dwarf almost beyond precedent, the stems of most things that usually attain some height before they show flower, this summer bloom from the ground upwards, yet the flowering disposition is not lessened.

One difference traceable to the season is that most plants are having a shorter time of blooming than usual, and the flowers of some have more than the ordinary amount of colour in them. This is particularly noticeable in Messrs. Cannell's nursery at Swanley, where the porous subsoil has helped the dry weather to show what plants stand the dry summers best. Amongst them may be named the following, which were in fine bloom at the middle of this month:—Campanula urticifolia alba flore-pleno, one of the finest of the double kinds; C. celtidifolia, with dense tufted heads of deep bluish-purple flowers; the white C. turbinata alba; C. persicifolia alba, C. persicifolia alba flore-plena; C. persicifolia coronata plena; C. alliariæfolia alba pleno, C. Van Houttei, bright bluish lilac; C. Balfouriana, a very dwarf growing deep blue flowered variety, a cross between C. turbinata and C. pulla; the curious looking Digitalis ferruginea, with its densely clothed spikes of small flowers, brownish yellow, profusely netted with dull crimson; D. lanata, creamy white, netted with brown-red; the deep yellow Coreopsis lanceolata, the singular starry-petalled, white Michauxia campanuloides; Œnothera Pilgrimii, a yellow flowered kind that forms tufted heads of bloom, of close compact habit of growth; Œ. Fraseri, another close compact-growing yellow flowered kind, the petals broad—one of the best of the genus; the fine white flowered Œ. speciosa Œ. taraxacifolia, the large pale blush flowers of which are beautiful; Myosotis Impératrice Elizabeth, dark blue, a supposed hybrid between M. sylvestris and M. azorica, keeps on flowering when others are done; the white flowered Malva moschata alba, M. Kelleri, creamy-white; Geranium platypetalum, Lychnis Haageana, in its different colours from white through pink and red.

Amongst Potentillas, P. Eldorado, yellow and pale vermilion; P. Belzebuth, deep maroon; P. Louis Van Houtte, deep crimson; Spiræa Ulmaria variegata is well worth growing for its variegated foliage alone, independent of the flowers; Rose Campion atro-sanguinea flore-plena, Achillea Millefolium var. rosea, Erythræa diffusa, a beautiful little alpine, flowers the colour of the common English Centaurea calcitrapa; Polygonum Brunonis, Commelina cœlestis, the flowers of which are amongst the most beautiful of blue shades; the Iceland Poppy, Papaver nudicaule, in the three different colours of white, yellow, and yellow flushed with red; the rare Dianthus Atkinsoni, the flowers of which are a glowing crimson, with others, remarkable amongst which was D. Napoleon III., a rich crimson; Polemonium Richardsoni, a pretty pale lavender-blue; Erodium manescavi, rosy-purple, nearly always in flower; the dark blue Gentiana cruciata, one of the most distinct of this fine family; Iberis gibraltarica, Lathyrus latifolius albus, the white form of Everlasting Pea, a plant not near so much grown as it deserves to be—the profusion of beautiful flowers which it produces for a long time in the season rank it amongst the best of hardy flowers for using in a cut state; L. latifolius splendens, a deep rose-purple coloured variety of the old well-known Everlasting Pea—a much finer variety; the deep yellow Helenium pumilum; Epilobium Dodonæi, purplish-pink; Coronilla varia, pale rose and white Pea-shaped flowers; Platycodon grandiflorum, one of the finest of deep blue campanulate flowers; P. grandiflorum album, white, slightly shaded with blue; Androsace lanuginosa, a little gem, with woolly leaves and compact heads of rose-coloured flowers; the Daisy-like Erigeron mucronatum, E. aurantiacum, deep reddish-orange.

Pentstemons seem to have stood the dry soil and dry condition of the air well. There has been a complete revolution of late years in these plants, the flowers of which are now almost as big as those of small Gloxinias; some of the new ones measure quite 2 inches across the mouth of the tube. Amongst the finest are Charles Darwin, red, with prominent white throat and purple markings; Sculpteur Classinger, pale red, prominent white throat extending over the greater portion of the limb segments; Gil Blas, purple, with white centre and brown markings, immense flowers; Mrs. Weaver, red, throat white, reddish-crimson markings; Mrs. L. Dow, crimson, with prominent pure white throat; Atlantides, purple, throat white; Parlement, carmine, white throat, another very big flower. These are all magnificent kinds.

Phloxes.—The great advantage which young plants possess over old ones in the production of fine flowers is more apparent this season than often. The following is a small selection of the best:—Auguste Rivière, salmon-red, with crimson eye; George Sand, pure white, a dwarf grower; The Queen, a dwarf growing variety, the best of all the whites; Comte Lambertye, very deep crimson; De Lesseps, rosy-mauve, with crimson eye, an immense flower; Victor Hugo, vivid scarlet, crimson eye (I understand there is a greater demand for this variety than for any Phlox grown); Virgo Marie, white, rose-pink eye, a fine kind in every way; Telephone, bright crimson; T. S. Ware, pale rosy-lilac, with white eye; Countess of Galway, white, flushed with pink; Congo, pure white, lilac centre; Madame de St. Pulgent, rosy-pink, with crimson eye; the above twelve may be relied on as the cream of the varieties in bloom, other fine sorts are not yet out.

Antirrhinums rank amongst the best of the hardy flowers for dry summers, the large beds of them at Swanley, in every imaginable shade and colour, are a complete mass of bloom, the only effect which the dry weather seems to have had on them is to pack the flowers more densely on the spikes.

Violas. — The immense breadth of these and Pansies, show and bedding varieties, are a mass of bloom, but, as might be supposed, the drought has caused their flowers to come much smaller than usual, in common with quantities of other things.

Dahlias, single and double, occupy a large space of ground. The plants are immensely strong, and promise to bloom finely.

There is a plentiful supply of water, derived from an immense tank on the high ground to the south of the nursery, which gives pressure that sends it all over the place through the pipes laid for the purpose; still the work in such a season as this is something enormous, although necessarily confined to a limited number of things. As an instance, the stock of Chrysanthemums now require three men and a boy to attend to them: many of the early blooming kinds were in full flower—the early and late varieties of these plants now virtually keeping up a succession for the greater portion of the year. The bracing air and open situation have had the effect of keeping the stock collectively much freer from aphides than in many places. Even Roses, of which some 30,000 standards are grown, appear to be as free from fly as if the intolerable pest were non-existent. *T. B.*

NOTE ON TU-TU (CORIARIA RUSCIFOLIA).

The "Tu-tu" plant (pronounced "Toot," the final vowel in many Maori words being only an aspirate, or lip sound, is dropped by Europeans) is indigenous to New Zealand. It grows luxuriantly where situation is favourable, and prefers an exposed site on rising ground, with a dry friable soil. Its average height, when mature, may be taken at about 5 feet, of a shrubby herbaceous character, and with its spreading branches covering a considerable extent of surface. Surrounded by sombre Ferns and withered grasses, the effect of its glossy dark green foliage is very striking.

Tu-tu, though commonly spoken of as a poison, is such only under certain conditions, and even not then to all animals—the horse, goat, and pig being said to be entirely proof against it under all circumstances; while, conditions being favourable, cattle and sheep often fall victims to it. The season of its greatest activity is in spring; then the wide-spreading roots throw up numerous tender succulent shoots, which are eaten with avidity by sheep fresh from the hills, where dry grasses and Ferns have been the rule. Cattle browse on the young leaves, and when coming to them fresh from other pastures, or exhausted by labour or travel, nearly always with fatal effects. It is said that later in the year the poisonous property is greatly diminished—that even when most virulent its effects are much ameliorated by a previously full stomach, and that the system can become accustomed to it by gradual use.

Animals suffering from the effects of this plant are said to be "tooted." Its principal action seems to be on the brain and nervous centres, and produces a condition similar to "staggers." The animal becomes stupid and lethargic until roused into a fit of mad frenzy by any trivial circumstance, during which it is dangerous for man or beast to be in the way, the frenzy recurring at rapidly decreasing intervals, until death results in a few hours from sheer exhaustion. The only remedy that appears to be used is bleeding from the jugular vein, and that with very poor success, not one in ten being benefited, while the exceeding danger attending its use causes it to be practised only under exceptional circumstances.

I am not aware what is the effect of the green herb on man, but singularly enough the "berries," when ripe, are grateful and refreshing to the thirsty palate, care being taken to reject the seeds. A common method of utilising the fruit is by tying a few bunches in a handkerchief and sucking the juice through it. Small birds are very partial to the ripe fruit, and no injurious effect on them is apparent; most probably the seeds are voided by them entire.

In the early days of the colony, when bullock labour was universal, whole teams were sometimes destroyed or disabled in a single night by this pernicious plant, rendering great care necessary in the choice of a camping place. The immunity enjoyed by the goat in respect of this plant was some years ago made use of on the Flaxbourne sheep run, a large number of these animals being procured for the especial purpose of securing its eradication. That an animal to whom the varied contents of a choice flower-garden are a comestible delicacy should be proof against this particular plant is not to be wondrred at, but why the plant should be so powerfully toxic as regards other ruminants is a matter for surprise. *T. H. Hustwick, in the "Pharmaceutical Journal and Transactions."*

HOME CORRESPONDENCE.

Gardeners' Royal Benevolent Institution.—Will you kindly allow me to notify through your columns that the annual simultaneous collection in aid of the pension augmentation fund of this Institution will take place on Monday, the 28th inst. Collecting cards have been issued to every gardener whose name is to be found in the Horticultural Directories, but if any gardener who may be disposed to assist the committee, but who has not received a card, will apply to me I will send him one by return of post. It has been determined by the committee that the collection shall cease on the 30th November next. An appeal from the committee to all the nurserymen and seedsmen, &c., throughout the United Kingdom has also been made. The committee earnestly hope that the gardeners of England will cheerfully respond to their endeavours to raise the amount of the pensions of the Society. *Edw. W. Cutler*, 14, *Tavistock Row, Covent Garden, W.C.*



Fig. 27. — SUPERTUBERATION: see p. 101. (What we may expect if a wet season supervene.)

Cranberries.—I would gladly learn at what times of the year the importations of this fruit into England take place. I presume they do not occur simultaneously from Russia, Sweden, and America, and I have searched the price lists in your journal unsuccessfully without finding a price quoted in Covent Garden Market. I presume they come into the hands of the retailers through some other channel than Covent Garden. I find in Loudon (*Arboretum*, vol. ii., p. 1170):—"Sir Joseph Banks was the first person who cultivated the American Cranberry in England for its fruit." I had always before supposed that the subject of his culture was the European plant (Oxycoccus palustris). Sir Joseph Hooker, in the *Students' Flora of the British Islands*, gives August as the month of the flowering of O. palustris; the older authors (Sowerby, 1790, and others later) give June and July. *Diss.*

Potato Disease.—In average seasons, according to my notes, the Potato disease is distinctly present by July 20, in early ones in June and even May; we have now passed July 20, and we have had no disease. I have kept a daily outlook for the fungus for the last two months, and with the exception of four or five leaves no Peronospora has been forthcoming. A careful search in South Essex and North Kent has produced one leaf only which has shown the Peronospora. On Saturday last I visited Mr. Laxton's garden at Girtford, where the fungus showed its readiness to start a month ago; but it had been kept back solely by the continued dry hot weather. There is no Peronospora in an active state in that garden now; I could see none at Sandy, none at Sutton, none at Biggleswade. On inquiring of the men at work in the fields the general answer was "It has not come yet," and everything seems at present to point to a sound and abundant Potato harvest. The later varieties may, of course, yet be assailed by the parasite. I have shown that Mr. Jensen's theory of early and late seasons breaks down at the beginning of his short series; it is now evident that it breaks down at the end. It also breaks down at 1877, which is given by Mr. Plowright as a late year, whilst it really was an early one; the disease was in a bad form at Chiswick in the beginning of July, 1877, and Mr. Barron sent badly diseased examples to the Scientific Committee of the Royal Horticultural Society on July 4; see two letters in the *Gardeners' Chronicle*, July 7, 1877, p. 18. I shall send a further report next week, as we now have the exact meteorological conditions upon us which suit the development of the fungus. *W. G. Smith.*

Peach Alexander.—I can fully indorse all that Mr. Thirlby (p. 86) says in favour of this early Peach, which I got and planted through the notice given of it by Mr. Rivers, as it is not only more precocious in ripening than Beatrice, Louise, and Early Rivers, but it is better in colour, size, and flavour than either of the trees just named. With us neither of these are ripe yet, and will not be for a week at least from this date (July 21), while we gathered from the Alexander on the 13th, when I was quite pleased with the fruit, which was large, rosy, and good. I saw a fine dish of Hale's Early—or rather what would have been a fine dish, had they been ripe—at the Ipswich show, and from my remembrance of them they looked very like the Alexander in shape and colour, and, I think, are one and the same kind. Perhaps some one who has grown the two will tell us if they are so, or in what particulars they differ. The Alexander, or Hale's Early, whichever it is, is certainly a very valuable variety, and all we want now is a Nectarine equal to Lord Napier that will come in at the same time as the Peach. *J. Sheppard.*

The Proposed Chiswick Conference.—In suggesting a Conference of gardeners, or indeed, of horticulturists generally, at Chiswick during the coming autumn, the great thing to decide upon is what shall be the special object of the gathering; for unless some clear and well defined subjects for consideration are agreed upon and properly submitted to the gathering, the results may prove barren. The Apple Congress, so-called (though as far as the particular fruit which formed its chief element, it was eminently a success), has yet proved singularly barren in results, simply because all the labours of the Apple experts, so great and so meritorious, have to the general public practically been wasted. Is it desirable to inaugurate a similar *fiasco?* Looked at from the ordinary view the Apple Congress was rather a congress of Apples than of Apple growers, because it is the common product of congresses that the papers read and speeches made are published. The labours of the Apple Congressmen have not seen the light, and it seems never will. [We hope our correspondent is mistaken as to this. Ed.]. Efforts were made to induce the Council to publish the Congress reports, prepared at a great expenditure of labour and research, but the Council sat upon it, at once. There is a wet blanket element in the Council that would kill any suggestion, if it had its way, and it does seem as if it does get its way pretty often. Now, if a second Conference be summoned at Chiswick, what conditions will be agreed upon by the promoters with the Royal Horticultural Society? Will the latter have full and entire control over its proceedings and finances, and, not least, will it be permitted to make its literary proceedings public in any way it may think fit? It is true that the most entire freedom was accorded to the gardening Press in gathering what-

soever information it could respecting the Apples at the Congress of last year, but beyond that nothing more has been made known. Will the promoters or committee be permitted to appoint their own reporters, or give the fullest freedom to the Press to report all its proceedings, whether literary or technical, or what other course will be followed? These are matters that need thinking out and satisfactorily arranging ere the proposed Congress becomes a reality. Of course it is apparent enough to all outside the Royal Horticultural Society's Council—possibly it may be to some in that body—that the very *raison d'être* of the Society's existence is that it should be the active promoter and centre of all such proposals as this is—that, in fact, it should be the rallying point of all onward horticultural movements. The Council is a kid-glove body, a bevy of amiable gentlemen and general horticulturists, each one perchance devoted to his little garden hobby, but as a body it is entirely devoid of public spirit and of that energy which is found in bold, active workers. Even now that the Thames is so dry there is the very least probability that the Council collectively will ever set it on fire; in fact it may be pertinently asked whether its existence is useful to horticulture in any shape or form. As to the chief topic for discussion at a Congress, Grape culture may prove interesting, but, as compared with Apples, Grapes of sorts are relatively so few that little can be learned from an exhibition of them in the way of nomenclature. Probably few fruits are better known by growers, and with respect to general features there is of Grapes little to learn. Something new might be put forth with respect to culture, but of all the topics that have been threshed out *ad nauseam* in the gardening papers from time to time none can approach Grape culture, and yet it remains a fact that, in spite of yards upon yards of contention for years past over seemingly trivial points, hardly half-a-dozen growers are unanimous about them now. After all the columns of the gardening papers prove to be the best horticultural congress, but they lack one element—that of sociality—such as results from the bringing into actual contact of a large body of persons. If topics of genuine usefulness were needed few could be found of more interest than such as "Hardy fruit culture in relation to public requirements," for the successful production of crops of some kinds of fruit is with us just now one of the problems of the day. A few years ago a discussion on the best means of combating the Phylloxera would have been an exciting topic, but the Phylloxera seems to have become *non est*, Almost as much might be said of our once greatest fungoid pest—the Potato disease, but with such a dry season as the present and Potatos ruinously abundant as they were last year, any discussion on those topics seems needless. The profitable production of fruit for public consumption seems just now to be the most interesting and practical subject for the consideration of a congress of gardeners. *Horticulturist.*

The Queen's Park, Glasgow.—A couple of hours in the Queen's Park at Glasgow was, I think, well spent time. The grounds around the fountain are especially attractive, some of the beds containing not only a beautiful but very choice collection of plants. Here may be seen at a glance such plants, shrubs, and trees as thrive in the smoky atmosphere of a town garden or park. Amongst these I noted particularly fine specimens, and certainly an unusually large collection of Thorns, all in the most robust health, and which, I was told, are, during "May days," quite a treat. Hollies do well, as also Maples of sorts, notably the variegated forms, the Service Tree, and a host of others. With a bed of Heaths near the University I was rather astonished, forgetting, as I then did, that although a native of the wild mountain sides, and where the purest of airs at all times abound, this plant condescends to grow and even flourish in the smoky atmosphere of a Glasgow garden. *W.*

Melons and Grapes at Longford Castle.—These at the present time are worth going a journey to see. In a small span-roofed house in three divisions, two of which are devoted to Melon culture and one to Cucumbers, the first division contains the finest crop of Melons it has been my fortune to look upon, the little house, 18 feet long, containing forty-two full-sized fruit, perfect in shape, many beautifully netted, and most of them carrying that beautiful orange colour in the skin which generally denotes their having been grown under the influence of strong light, and that the details of culture have been properly carried out. It is indeed a remarkable thing to see so many fruit so near maturity at one time; but there is no disadvantage felt here, as there are others to quickly follow them. On opening the door the perfume which meets one is delicious. The varieties in this house are Hero of Lockinge, Eastnor Castle, Longford Hybrid, Hero of Bath, and a hybrid, the result of a cross between Hero of Bath and Longford Hybrid. In the later house the second crop from fresh plants looks equally promising, as they are now swelling a fine lot of fruit, among which are the following varieties:—Cox's Golden Gem, Dickson's Exquisite, High Cross Hybrid, Blenheim Orange, Captain Lock, and Longford Hybrid. In the long range of vineries the Grapes are looking well, and quite up to the usual standard of excellence; they are in four divisions, and are devoted to early, mid-season, and late Grapes. In the early house, which mainly consists of Black Hamburgh, which carry all the points of first-class Grapes, there may be seen a first-rate example of the Strawberry Grape, carrying a load of small bunches some four to a lateral, and these form a pretty contrast to their more lusty companions, when it is considered that the bunch of the Strawberry Grape does not weigh more in ounces than some of their companions weigh in pounds. The Muscats are also looking admirable—a very even lot of bunches, weighing from 2 to 4 lb.; and a more even set, or, in other words, more regular size of berry, could not be seen. Of the late kinds it is too soon to speak as to their finish, but their promise is all that could be desired. Mr. Ward is certainly to be congratulated on his success. *C. Warden.*

Reports of Societies.

Royal Horticultural: *July 22.*

Scientific Committee.—Sir J. D. Hooker, K.C.S.I., in the chair. Present: Messrs. Pascoe, MacLachlan, Wilson, Houston, Ridley, Murray, Bennett, Lynch, Grote, Drs. Lowe, Foster, Masters, and Rev. G. Henslow.

Dried Rhubarb.—The Secretary reported that this had been tried, but found insipid and valueless.

Abies Nordmanniana.—Specimens of this injured by a species of Lachnus were exhibited. Syringing with petroleum emulsion, applied with a fire-engine, was suggested as the only means likely to be successful in combating the insect.

Sarracenia flava, &c.—Mr. G. F. Wilson showed a fine pitcher of this species grown out-of-doors near Weybridge; also flowers of Begonia diversifolia and Meconopsis Wallichii.

Fusion of Roots.—Dr. Masters showed a photograph of an extraordinary fusion of roots of Pinus Pinaster observed in Portugal by Professor Henriquez.

Orchis pyramidalis.—Mr. Ridley reported that the flower submitted to him at the last meeting was Orchis pyramidalis var. cylindrica, a native of Greece.

Agapanthus.—Mr. Murray called attention to a number of these plants (some 200) growing in a garden near Calais, all of which had fasciated inflorescence.

Knots from Cedar.—Mr. Lynch showed a series of knots from the trunk of an old Cedar of Lebanon.

Antigonon leptopus.—Mr. Lynch showed a flowering spray of this plant, some of the pedicels of which were developed as tendrils, and attaching themselves to a branch.

Potato Disease.—Mr. Plowright sent the following communication:—"The manner in which the disease spreads from the foliage to the tubers has in this country until recently been considered to be by the mycelium extending itself downwards inside the stem and along its subterranean ramification to the tubers. De Bary has, however, long ago pointed out that this is not the case. It seemed to me desirable to demonstrate, if possible, that the extension downwards inside the stem of the Peronospora mycelium is a myth. It must not be imagined that botanists dispute De Bary's facts, but the view hitherto current in this country has arisen rather from a misapprehension of them. A healthy Potato plant was grown in a large flower-pot expressly for this experiment by Mr. S. Castle, of West Lynn. On July 5 I removed the lower leaves from each of the three stems, and carefully enveloped the lower part of each stem in cotton-wool. The wool was tied round each stem with raffia, so that about 5 inches was protected from the surface of the ground upwards. A quantity of spore-charged water was then poured upon the foliage and upon the surface of the earth in the pot. The plant was watched from time to time in the ordinary manner. In the course of four days (on July 9) the fungus developed itself on the foliage and stems above the protecting cotton-wool. It gradually extended itself until the leaves and stems were entirely destroyed. On July 19 the plant was taken up. Four tubers were found—one diseased and three healthy. The diseased tuber remained attached to the skin. The diseased parts of it were those farthest away from its attachment. So that, in this instance at any rate, the disease was not transmitted to it by the stem. The lower portions of the stems which were enveloped in cotton-wool were found to be free from disease. Here is an instance in which (1) the tops have been destroyed by the disease, (2) the tubers are diseased, (3) the intervening parts of the stem are healthy. The importance of this experiment rests not only in confirming De Bary's views, but more particularly in this—that if the mycelium travelled down the inside the stem to the tubers then no amount of high moulding could possibly protect the tubers from the disease."

Teratological specimens.—Mr. Henslow showed a large and interesting series of deviations from the ordinary condition of various flowers.

Floral Committee.—Present in *Section A.*: John Fraser, Esq., in the chair; Messrs. E. Hill, J. Dominy, J. Woodbridge, J. Hudson, H. Herbst, J. Laing, H. Williams, J. O'Brien, and the Rev. G. Henslow. *Section B.*: Shirley Hibberd, Esq., in the chair; Messrs. G. Duffield, C. Green, W. Bealby, G. F. Wilson, J. James, J. Child, W. B. Kellock, H. Cannell, and H. Turner. The greatest number of novelties exhibited at this meeting came from Messrs. James Veitch & Sons, their contribution including, amongst others, a good stand of unnamed varieties of Iris Kæmpferi, cut blooms of Ceanothus azureus; C. Arnoldi, a very fine variety with French-grey flowers, produced in large dense spikes; C. albidus, creamy-white; and the very fine pale lilac Gloire de Versailles; Styrax japonica, a beautiful hardy shrub, with white, broad, bell-shaped flowers; Prunus Pissardi, young grafted plants grown in the open air, and finely coloured; Andromeda japonica albo marginata, very dwarf, and variegated, as indicated by the name; Gladiolus hybridus Lafayette, a hybrid raised by M. Lemoine between G. purpureo-auratus and a hybrid of G. gandavensis, with a bold spike of flowers of a creamy-yellow ground flushed with rose, and the lower petals blotched with bright crimson; Clematis coccinea, of which there must be good and bad varieties about, that shown to-day being the finest we have seen, and a remarkably pretty thing; Rosa lucida var. Rose-button, bright rose, with a carmine centre—a very pretty double Balsam-flowered variety, that will be valuable for border cultivation; and the following choice hybrid Rhododendrons:—A rich salmon-red, with fine large bells; Princess Alexandra, white; Prince Leopold, salmon-red; Princess Frederica, creamy-yellow; Duchess of Edinburgh, crimson-scarlet; Taylori, bright rose; and Maiden's Blush, flesh, tinted white. From Mr. R. Dean, Ealing, came Lathyrus latifolius delicata, an exceedingly pretty Everlasting Pea, white, veined and pencilled with rose, which must be increased by cuttings, as it will not come true from seeds; and Primula Rusbyi, a very pretty plant, received from America, of the general appearance of P. rosea, but the leaves more resembling those of P. latifolia, while the flowers are of a rosy-purple shade. [This was referred to the Kew authorities for naming.] Mr. B. S. Williams showed a plant with one spike of the distinct, rare, and pretty Aërides Houllettianum, with its buff-yellow sepals and petals and spade-shaped white lip tipped with pink. Messrs. F. Sander & Co. and Mr. De B. Crawshay both exhibited flowering plants of the fine new Cattleya Gaskelliana, and Messrs. Sander & Co. also had a flowering plant of Dendrobium Griffithianum, a yellow-flowered species, which bore the name of D. Guibertianum. From Mr. Z. Stevens, Trentham, came a singularly distinct form of Odontoglossum vexillarium, named superbum, a very rich violet-rose coloured variety, with a rich dark crimson velvety centre. Messrs. Jacob-Makoy & Co., of Liège, sent a variegated form of Anthericum latifolium and Croton Inimitable, a handsomely coloured variety. Messrs. Paul & Son, Cheshunt, showed the new Tea Rose, Madame Eugenie Verdier, a pure rich yellow of the Gloire de Dijon type, very sweet, and a welcome addition to the yellow-flowered section; Spiræa bullata, a very dwarf shrubby species, with dense terminal spikes of crimson flowers—a pretty plant for the rockery; Campanula turbinata pelviformis, a pretty variety, with fine pale blue saucer-shaped flowers; a small group of herbaceous Phloxes, and another of Carnations and Picotees in pots. Messrs. Cannell & Sons exhibited an exceedingly fine double Begonia named Ruhm von Erfurt, a very prettily shaped flower of a glowing orange-scarlet colour; and from Mr. W. Bealby came a new Ivy-leaved Pelargonium, Madame Thibaut, a very fine double, bright rose. Messrs. James Carter & Co. sent Rhodanthe Manglesii alba, a very dwarf strain; and a dwarf bedding Nasturtium, Beauty of the Border, a yellow ground flower, with bold crimson blotches. Mr. T. S. Ware again had a large and effective display of hardy flowers, which did duty also on the following day.

The awards made were:—

First-Class Certificates.

Section A.

To Messrs. James Veitch & Sons, for Rosa lucida var. Rose-button.

To Messrs. James Veitch & Sons, for Clematis coccinea.

To Messrs. James Veitch & Sons, for Prunus Pissardi.

To Mr. B. S. Williams, for Aërides Houllettianum.

To Mr. B. S. Williams, for Odontoglossum vexillarium superbum.

To Messrs. F. Sander & Co., and Mr. De B. Crawshay, for Cattleya Gaskelliana.

To Messrs. F. Sander & Co., for Dendrobium Griffithianum.

Section B.

To Messrs. Paul & Son, for Tea Rose Madame Eugenie Verdier.

To Messrs. Paul & Son, for Spiræa bullata.

To Messrs. Paul & Son, for Campanula turbinata pelviformis.

To Messrs. Veitch & Sons, for Rhododendron Empress.

To Messrs. Veitch & Sons, for Gladiolus hybridus Lafayette.

To Mr. R. Dean, for Lathyrus latifolius delicata.

To Mr. R. Dean, for Primula Rusbyi?.

To Messrs. Cannell & Sons, for Begonia Ruhm von Erfurt.

To Mr. W. Bealby, for Ivy-leaved Pelargonium Madame Thibaut.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair; Messrs. John Lee, G. Bunyard, W. Denning, G. Goldsmith, C. Ross, W. Paul, S. Ford, J. Roberts, — Howcroft, J. Smith, H. Webb, and R. D. Blackmore. But few subjects of any interest came under the notice of this body, and these included samples of House's Perfect Marrow Pea, and of a small podded variety from New Zealand, exhibited by Mr. Walker, of Thame. Mr. Laxton sent some plants of his new Strawberry, The Captain, which the committee requested should be sent to Chiswick for trial.

FRUIT AND VEGETABLE SHOW.—Of the fruit competitions which have so far been held at South Kensington in connection with the National Health Exhibition, the one held on Tuesday last was by far the largest and best, and in extent will probably not be excelled during the season. In most classes the competitions were large, and quality of the very best, so that the thousands of visitors who passed through the conservatory looked over the tables with something more than admiring eyes. The schedule started with collections of fruit of an unlimited number, four lots being staged. As two varieties of any one kind of fruit were admissible, the collections were not unusually varied. The 1st prize fell to Mr. A. Miller, gr. to W. A. Long, Esq., Rood Ashton, Trowbridge, who had sixteen dishes, including good Scarlet Premier and Eastnor Castle Melons, Barrington and Violette Hâtive Peaches, Pine-apple and Downton Nectarines, Early Purple and Blue Gage Plums, Monstreuse de Lipari Figs, black and red Currants, white and red Gooseberries, two Strawberries, and one of Raspberries. Mr. G. Goldsmith, The Gardens, Hollanden, Tonbridge, was 2d with twenty dishes, all unnamed, including two kinds of Cherries, Lord Suffield Apples, and other fruits, similar to the previous collection. Mr. W. Robins, gr. to E. D. Lee, Esq., Hartwell House, Aylesbury, took 3d place with seventeen dishes, having good Barrington Peaches and Lord Napier and Humboldt Nectarines in his lot. Pines were in great force, the champion exhibitor, however, being found in Mr. R. Nicholas, The Gardens, Castle Hill, South Molton, who had in the class for four fruits each, grand specimens of the Smooth Cayenne, two weighing 8½ lb. each, and two others 8 lb. each. These were handsome and finely finished. Mr. J. Harris, gr. to Mrs. Vivian, Singleton, Swansea, had the 2d best four in some beautiful Queens, of fair size, and finely coloured; Mr. G. T. Miles, gr. to Lord Carrington, Wycombe Abbey Gardens, was 3d, with a fine Charlotte Rothschild, two good Queens, and a Smooth Cayenne. Mr. Nicholas had the best two fruits with the same kind, both weighing 8½ lb.; Mr. Edmunds, The Gardens, Bestwood Park, Notts, coming 2d, with very good Queens; and Mr. Moss, gr. to C. Eyre, Esq., Welford Park, Newbury, was 3d, with Cayennes. In addition to those already noted, Mr. Nicholas staged, not for competition, twelve splendid fruits, all Smooth Cayennes, of the aggregate weight of just over 100 lb. An extra prize was awarded to this collection.

Grapes were well shown, some bunches, in fact, being, of their kind, first-rate. Thus, Mr. Taverner, gr. to Sir A. K. Macdonald, Woolmer Forest, had grandly coloured Black Hamburghs, his three bunches being, perhaps, as good as could be found; 2d to him came Mr. J. Edmunds, with well coloured but somewhat loose bunches; and Mr. Church, gr. to C. S. A. Thellusen, Esq., Brodsworth Hall, Doncaster, was 3d, with fairly good samples. There were seven entries in that class, but only three in the one for three bunches of the Duke of Buccleuch; Mr. Baird, gr. to C. A. Daw, Esq., Holmfield, Ealing—one of the most successful growers of this very uncertain Grape—coming 1st, with medium-sized bunches, but having fine well coloured berries; Mr. Roberts, The Gardens, Gunnersbury Park, had the next best bunches, but though as fine as Mr. Baird's, they were a little wanting in colour; Mr. Chuck took third place. Muscat of Alexandria did not come out first-rate, the bunches generally being rather lumpy, and the berries greenish. Mr. Edmunds had the best; Mr. Cakebread, gr. to Sir T. F. Rose, Rayners Park, Bucks, coming 2d; Mr. Edwards, gr. to Mrs. Tristram, Liphook, Hants, coming 3d with tapering bunches rather hard thinned. Mr. Roberts had three splendid bunches of Madresfield Court, the berries of great size and finely coloured—R. Crey, Esq., Northfield House, Henley-on-Thames (Mr. T. Heath, gr.), coming next with larger bunches but lacking finish. The class for any other kind brought better competition, Mr. W. Tidy, Stanmore Hall Gardens, having some grand Black Alicantes that easily placed him 1st, though the Foster's Seedling shown by Mr. C. Herrin, gr. to J. A. Hibbert, Esq., Chalfont Park, Slough, were remarkably good, indeed perfectly coloured and finished. Mr. Roberts had three grand bunches of this latter Grape also, that had they been coloured as Mr. Herrin's were, might have placed him higher up.

There were seventeen pairs of Melons in competition, and as on this occasion the judges tasted all the fruits, their efforts to select the best flavoured were onerous and meritorious. A brace of very handsome fruit of a new kind, Sutton's Scarlet Invincible, oval in form, large and finely netted, sent by Mr. W. Wildsmith, gr. to Viscount Eversley, Heckfield Place, Winchfield, were well placed 1st, the flesh proving soft, luscious, and richly flavoured. Mr. S. Hare, gr. to R. H. Neville, Esq., Grantham, came 2d, with a handsome green-flesh kind unnamed; and Mr. Ward, gr. to the Earl of Radnor, Longford Castle, Wilts, was 3d with Blenheim Orange. Figs were not largely shown, the prizes going to Messrs. J. Wallis, Keele Hall, Stafford; Roberts, and Ward. Mr. J. Coleman, Eastnor Castle Gardens, had the best two dishes of Peaches, with finely coloured Bellegarde and paler Royal Kensington, both fine samples. Mr. Robins had Stirling Castle and Barrington in the 2d prize lot, and Mr. J. Read, The Gardens, Moat Mount, Mill Hill, was 3d; many finely coloured fruits were in the other dishes much bruised. There were seventeen dishes of Nectarines, Mr. Roberts coming 1st with grandly coloured Lord Napier, Mr. Wallis and Mr. Robins following in order with the same variety. Mr. Edmunds had the best two dishes of Strawberries in Sir Joseph Paxton and Sir Charles Napier. Mr. Church followed with rich coloured Duke of Edinburgh and Oxonian; and Mr. R. Maher, gr. to A. Waterhouse, Esq., Newbury, had Jas. Veitch and Sir J. Paxton. Only two dishes of the old Hautbois were shown, both samples being of a sickly hue and unwholesome look, so that no wonder this once famous kind finds little encouragement now. In the class for a single dish of any kind Mr. Goldsmith had very fine Sir J. Paxton; Mr. Church came 2d with pale British Queen, and Mr. Edmunds 3d with deep coloured Duke of Edinburgh. Mr. J. Walker, of Thame, had the two best dishes of Raspberries in Carter's Prolific and Fastolf—Mr. Chadwick, gr. to A. M. Nelson, Esq., Hanger Hill, Ealing, having the same sorts, and Mr. Ward was 3d with red and white Antwerp. Gooseberries made a brave show, Mr. Chadwick having twenty-four dishes of really beautiful samples, large and well coloured, and all distinct; Mr. Walker was 2d with thirty dishes, and Mr. Goldsmith came 3d. In the class for six dishes there were very fine samples staged, Mr. Waterman, gr. to H. A. Brassey, Esq., Aylesford Hall, Maidstone, coming 1st with Golden Lion, Tally-ho, Howard's Lancer, Chorister, Lady Leicester (white), and Leveller (red); Messrs. Chadwick and Ford came 2d and 3d. Currants in collections of three dishes, red, white, and black, made a pretty show, and the samples were wondrously good—Mr. Robins, Mr. C. Ross, and Mr. Ford taking the prizes, the best sorts being Black Naples, White Dutch, and Red Grape. Finally, in the fruit section, Mr. Coleman had the best dish of Cherries in Bigarreau Napoleon, Mr. Miles coming next with the same kind.

VEGETABLES.—Very considerable were the competitions in this section of the show, and the quality throughout was excellent. In the class for collections of eight kinds there were ten entries, Mr. S. Haines, Coleshill Gardens, taking 1st place with capital Globe Artichokes, fine White Naples Onions, Giant Cauliflowers, very fair Telegraph Peas, clean handsome Nantes Carrots, Trophy Tomatos, Moore's Vegetable Cream Marrows, and Ashleaf Potatos. Mr. Miles was 2d, including in his lot Culverwell's Giant Marrow Peas, good Intermediate Carrots, Italian Tripoli Onions, and Asparagus. Mr. Ward came 3d, with a capital collection. Mr. H. Marriott, Boston, was invincible with Peas, and with six dishes took the 1st place in that class, having Telegraph, Wordsley Wonder, Commander-in-Chief, Johnson's Full Bloom, Laxton's Evolution, and one unnamed. Mr. Muir, gr. to C. R. M. Talbot, Esq., Margam Park, South Wales, was 2d, with Telephone, Paragon, Duke of Albany, Telegraph, &c. Mr. J. May, gr. to Captain Le Blanc, Barnet, was 3d. There was a large competition in the class for three dishes of Potatos, and, unfortunately, the judging was singularly bad. Mr. W. Meads, gr. to Viscount Barrington, Beckett Park, was placed 1st, with Henderson's Prolific and Porter's Excelsior, very fine and handsome, but getting greenish; Woodstock Kidney, and a pretty dish of Welford Park Seedling. Mr. Haines was placed 2d, with Woodstock Kidney and Rivers' and Veitch's Ashleafs, the two so-called latter kinds notoriously the same; and Mr. Herrin came 3d, with the best lot staged, in International, Sunrise, and Midsummer Kidney, all clean and handsome. Messrs. Hudson, Gunnersbury House; Herrin, and Haines took the awards for Mushrooms. Mr. Miller had the best dish of dwarf Beans, Messrs. Ward and Waterman following in order, all showing Canadian Wonder. Mr. Edwards had in Criterion the handsomest dish of Tomatos, richly coloured for that kind; Mr. Cakebread coming 2d, with beautiful Excelsior; and Mr. R. Farrance, Chadwell Heath, Essex, 3d, with fine Trophy. The best brace of smooth Cucumbers, very handsome Tender and True, came from Mr. G. Gilmour, gr. to the Right Hon. G. J. Goschen, M.P., Hawkhurst; and the best couple of prickly Cucumbers from Mr. J. Woodham, Dulwich—these were Pearson's Long Gun: Daniel's Duke of Edinburgh was also shown in the 2d and 3d prize lots.

SPECIAL PRIZES.—There was large competition for dishes of Messrs. James Carter & Co.'s valuable prizes for their fine Peas, Telegraph, Telephone, Stratagem, and Pride of the Market. Mr. Marriott had fine samples, as also had Mr. Wiles, Edgecote Gardens, Banbury; Mr. Ward, and others who took prizes. Mr. Marriott easily took the only prize offered by Mr. House, of Peterborough, for his Perfect Marrow, a British Queen shaped kind. Mr. Marriott was again 1st with a dish of Messrs. Webb & Sons' Wordsley Wonder, a green sword-shaped Pea; Messrs. Cook, of Boston, Muir, and Gilbert of Burghley, taking other prizes. Mr. Marriott had the finest sample of Laxton's Evolution, a well podded kind; and Mr. Miles the best dish of Laxton's John Harrison, Long-pod Bean, which is much like the Aquadulce.

Sheffield Botanical and Horticultural: *July 24 and 25.* (*By Telegraph.*)—This is not an exhibition of anything like the extent of the Manchester, Leeds or York shows, seeing that large specimens of plants of imposing appearance are wanting to give that grandeur of effect which is characteristic of the great Northern exhibitions; still, there are many objects of interest, chief among these being the cut Roses, which are very fresh and bright. The show is an effort to establish in Sheffield an exhibition worthy of this great industrial centre, and should it prove financially successful, it will be of annual recurrence. At 1 P.M. a large and fashionable company assembled, awaiting the opening of the tents. The arrangements are a little in arrear, and wanting in finish—a defect that will, no doubt, be remedied another year. There are two long tents on the grassy slope on the right hand of the broad walk leading from the front of the fine range of glass-houses. Groups of plants of large extent and varied character are furnished by Mr. B. S. Williams, Victoria Nursery, Holloway, London, and Messrs. Fisher, Son & Sibray, Handsworth Nurseries, Sheffield—indeed, the latter are such large contributors to the show, exhibiting in many classes, that it would be thin without their plants. Mr. Williams has Orchids, new and choice plants; the Handsworth firm have these also, a group of Roses in pots, Carnations, and other things. Some classes for foliage plants are in this tent, also the Orchids, table plants, and the limited quantity of fruit that is present.

In the second tent is a large display of cut Roses, the scarlet and crimson varieties being numerous and very fine. Messrs. Paul & Son, Cheshunt, take the leading prizes, in conjunction with Mr. R. W. Proctor, of Sheffield. The Roses fill more than one side of the tent. Messrs. Paul & Son's thirty-six blooms contain fine examples of Merveille de Lyon, Duc de Rohan, Leopold I., Sénateur Vaisse, Nardy Frères, Baroness Rothschild, H. Schultheis, Edouard André, Comte Rambaud, Ulrich Brunner, Madame G. Luizet, Prince Arthur, Pierre Notting, Souvenir du Coulommiers, Marquise de Castellane, Camille Bernardin, and Comtesse de Sereneye. Mr. R. W. Proctor takes the 2d prize. In the class for twenty-four varieties Mr. Proctor is 1st, having fine blooms of Sir G. Wolseley, A. K. Williams, François Levet, Duchess of Bedford, Louis van Houtte, C. Darwin, Star of Waltham, and Catherine Soupert; 2d, Messrs. Paul & Son, with good examples of Paul Néron, Marquis of Salisbury, Madame E. Verdier, Pride of Waltham, E. André, Madame Nachury, Ulrich Brunner, Prince Arthur, and Nardy Frères. Messrs. Paul & Son are 1st with eighteen varieties, and also with six Teas. They have also the best six new Roses, having good blooms of Ulrich Brunner, Merveille de Lyon, Pride of Waltham, Comtesse de Paris, Duchess of Connaught, and Queen of Queens. They also show six blooms of Pride of Reigate, and a pretty white striped Comtesse d'Oxford.

In the amateurs' class for thirty-six Roses the Rev. J. H. Pemberton, Romford, Essex, wins the Silver Cup given by the Mayor of Sheffield, staging fine blooms, the crimson varieties being particularly fine, such as Madame C. Wood, Charles Crapelet, H. Weir, Dr. Andry, Duchess of Bedford, Pierre Notting, Star of Waltham, J. S. Mill, Prince Arthur, and Horace Vernet. Mr. T. B. Hall, Rock Ferry, shows a good lot also. Mr. Hall's twelve Teas competing for a special prize given by Mr. Prince, of Oxford, are very good, viz., Maréchal Niel, Innocente Pirola, Etoile de Lyon, Marcelin Rhoda, Madame Margottin, Olivier, Comtesse Nadaillac, and Alba rosea. There are other classes for Roses; and the premier Rose in the nurserymen's division is Duke of Edinburgh, shown by Mr. Frank Hurton—that in the amateurs' class, A. K. Williams, shown by Mr. T. B. Hall. Other cut flowers include Carnations and Picotees. Hardy perenials are finely shown by Messrs. Fisher, Son & Sibray. Bouquets, &c., groups of plants arranged for effect, and collections of fine-foliaged plants fill up the centre of the Rose tent; the groups are arranged in squares, which imparts a formal appearance. In the nurserymen's division, Mr. Hiram Shaw, Richmond Nursery, is 1st, with a group showing excellent taste; Messrs. Fisher, Son & Sibray being 2d. In the amateurs' division, Mr. Hannah, gr to T. Wilson, Esq., Broomhill, is 1st, and Mr. Winter, gr. to T. Task, Esq., 2d: but they are far too closely packed. Close by Messrs. Cannell, Swanley, have a lot of wonderful bunches of single and double Pelargoniums and Begonias of great beauty. Messrs. Fisher, Son & Sibray have the best six Orchids, staging Vanda tricolor, Cattleya guttata Leopoldi, Dendrobium thyrsiflorum, with nine spikes, and Phalænopsis grandiflora. Mr. Sheridan, gr. to Mrs. Harmar, Ramsor, was 2d with good specimens of Dendrobium Bensoniæ and Cypripedium barbatum nigrum, &c. The best three Orchids are Disa grandiflora, Vanda tricolor, and Odontoglossum Alexandræ, with no exhibitor's name attached. The best single Orchid is Cattleya gigas. Mr. Hannah has the best six Crotons, staging Weismanni, majesticus, angustifolius, variegatus, Queen Victoria, and Mortii. He has also the best six ornamental foliaged plants, staging fine examples of Croton majesticus, C. variegatus, Dracæna Youngi, Anthurium Warocqueanum, &c.

In the nurserymen's division Messrs. Fisher, Son & Sibray have the best six ornamental foliaged plants; they are also 1st with six greenhouse Rhododendrons, staging fine, bushy, well grown and flowered plants; they also had the best six Dracænas, and six exotic Ferns, the specimens being small in each case, but well grown. The best six exotic Ferns in the amateurs' division come from Mr. Hannah, who has medium sized but very good specimens of Adiantum Farleyense, A. Veitchianum, A. gracillimum, Mrs. Harmar also has a nice collection in this class. The best three Orchids shown by amateurs come from R. P. Broomhead, Esq., and consist of small but nicely grown specimens of Dendrobium Dearei, Miltonia spectabilis, and D. Bensoniæ. Messrs. Fisher, Son & Sibray are the only exhibitors of six tuberous rooted Begonias, staging finely grown and flowered seedling plants of high quality. Quite a crowd gathers about Messrs. Cannell's dozen bunches of double Begonias, and judging from the exclamations made, not a few are looking upon flowers of this class for the first time. Coleus, Caladiums, Pelargoniums, and Gloxinias are here, but not worthy of special mention. Pansies and Violas in pots are very pretty. Mr. Simpson, florist, Crookes, shows a capital collection of fancy Pansies in pots, not for competition. Hardy perennials in pots are quite attractive. A large group of the white Clove, W. P. Milner, shown by Messrs. Fisher, Son & Sibray, is much admired for the snowy whiteness of the flowers.

Bouquets are decidedly smaller than those usually seen at competitions. Mr. R. W. Proctor, Chesterfield, has the best six hand bouquets of Roses, Messrs. Fisher, Son & Sibray being 2d. Mr. Hiram Shaw has the best bridal and best hand bouquets, Mr. R. Crossland being 2d in both classes.

Some very good blooms of Carnations and Picotees are shown. At 3 o'clock no exhibitors' names were placed on them, but Mr. Ben. Simonite appeared to be to the fore. He had good blooms of the following Carnations: — Sarah Payne, James Merryweather, a sport; Henry Cannell, H. Weir, Dr. Foster, Admiral Curzon, Dreadnought, John Keet, Mayor of Notts, and Dan Godfrey. Of Picotees—Brunette, Dr. Hogg, Muriel, Miss Horner, Lady Holmesdale, Mrs. Allcroft, Miss Woods, and Violet Douglas.

There are several classes for local Rose growers, and they appear remarkably good for the locality.

In the way of fruit Mr. Creakparts is the only exhibitor of three bunches of Grapes, one of each, having Muscat of Alexandria, Madresfield Court, and Barbarossa. Some good bunches of Black Hamburgh Grapes are shown. G. Fisher, Esq., Endcliffe, is 1st, and Mr. G. H. Shaw 2d. Mr. C. F. Shorter has the best bunch of White Grapes, staging Foster's Seedling, Mrs. Harmer being 2d, with Trebbiano. Mr. G. H. Shaw and Mr. G. Fisher competed in the class for Muscats, both having Muscat of Alexandria. There are Vines in pots, Peaches, Nectarines, and Tomatos, the latter very good.

A portion of the Botanical Garden is devoted to exhibitions of garden implements, and Messrs. C. Merryweather & Co., Sheffield, have garden tents and seats and mowing-machines, &c. Mr. Turner, Wireworks, Sheffield, has plant-stands, arches, &c., in wirework. Messrs. R. Jackson & Co., Rotherham, have their conical Victor boiler. Messrs. Primrose & Co., horticultural builders, Sheffield, have houses showing their system of indestructible glazing; Mr. J. Daniels, Sheffield, plant-houses and mowing-machines; and Messrs. C. Linley & Son, Starlight Works, a new conical boiler.

At 5 P.M. the weather is greatly improved and the company numerous.

National Carnation and Picotee Society (Southern Section): *July* 22.—The most ardent lover of the Carnation had no reason to find fault with the display made by his favourite flower on this occasion. It was essentially and entirely a show made by Southern growers, and what a barrier Nature has placed in the way of the Southern and Northern growers meeting in friendly rivalry is shown from the fact that the northern show in Manchester is on August 12, and Mr. Samuel Barlow is actually pushing on his flowers into bloom under glass, so as to have some of them ready by that date. On this occasion there was a good competition in all the classes, while the flowers were of a high order of merit—large, full, pure in the ground, and finely marked. And it was emphatically Mr. Turner's year, for this veteran grower was very strong at all points, staging superb blooms, and taking off something like fifty-seven prizes, many of them being 1sts. Mr. Douglas and Mr. E. S. Dodwell were also in good form, the former being the only exhibitor for the Veitch Memorial Medal and a prize of £5, no trade grower being permitted to enter the lists. It was in all respects a satisfactory exhibition, and it served to illustrate in a remarkable degree the activity of the growers of the Carnation and Picotee in the South; and were there not this among the somewhat divided "special" societies, no such exhibition of the old July flower could have been presented to a London public. The exhibits of the Carnation and Picotee Society, the competitions with fruit and vegetables, and the contributions to the committees filled every available space that could be devoted to stages in the spacious conservatory.

VEITCH MEMORIAL PRIZES.—In the class for the Veitch Memorial prizes, as before stated, won by Mr. Douglas, gr. to F. Whitbourne, Esq., Great Gearies; the flowers staged were — Bizarres: T. S. Ware, a fine P.P.B.; William Skirving, P.P.B., large, full, and finely marked; Admiral Curzon, Mrs. Gorton, 913 (Dodwell), C.B.; and Joseph Crossland: flakes—James Douglas, Jessica, a fine R.F.; Rob Roy, R.F., very fine; Squire Whitburn, a valuable P.F.; Henry Cannell, probably one of the finest of S.F.'s; and Florence Nightingale. And Picotees Brunette, H. Red E.; Constance Heron, H. Rose E.; Zerlina, Her Majesty, Mrs. Gorton, a pretty L. Rose E.; and Mrs. Payne. In this class eighteen blooms were required —twelve Carnations and six Picotees.

CARNATIONS.—In the class for twenty-four blooms of Carnations, not less than twelve varieties, Mr. C. Turner, Royal Nursery, Slough, was 1st, with a superb lot of blooms, staging—Bizarres: Master Fred, a very fine C.B.; Arthur Medhurst, C.B.; Wm. Skirving, P.P.B.; Robert Lord, S.B.; Mr. Barlow, and Squire Penson, P.P.B.: Flakes—Florence Nightingale, Sir Garnet Wolseley, Mayor of Nottingham, James Douglas, a fine P.F.; Rob Roy, Matador, a brilliant S.F.; Sybil, Tim Bobbin, a fine R.F.; Mrs. Bridgewater, S.F., very bright; John Keet, and Jessica. 2d, Mr. James Douglas, Great Gearies, Ilford, with—Bizarres: George, S.B.; Thomas Moore, C.B.; Sarah Payne, Wm. Skirving, Dreadnought, S.B.; Stanley Hudson, C.B; Seedling 1018 (Dodwell), Admiral Curzon, Seedling 851 (Dodwell), Seedling (Douglas), T. S. Ware; and Flakes—Squire Whitburn, H. Cannell, James Douglas, Rob Roy, Florence Nightingale, Seedling 1175 (Dodwell), and Jessica. 3d, E. S. Dodwell, Esq., Oxford, with—Bizarres: Ranger John, S.B.; Fred, Sarah Payne, Master Fred, W. Skirving, and James McIntosh, with several seedlings: Flakes—Florence Nightingale, James Douglas, Mrs. Hewitt, R.F.; John Keet, and seedlings. 4th, Messrs. Hooper & Co., Widcombe Hill, Bath; 5th, Mr. John Hines, Ipswich.

In class B, for twelve blooms of Carnations, Mr. Douglas was 1st, with well finished flowers of—Bizarres: George, Sarah Payne, Wm. Skirving, Arthur Medhurst, Miss Henderson, P.P.B.; W. M. Hewitt, C.B.; and seedlings: Flakes—Miss Helen Lodge, R.F.; Rob Roy, John Bayley, Florence Nightingale, and James Douglas. 2d, Mr. E. S. Dodwell, with—Bizarres: S. Barlow, C.B.; Master Fred, Fred, H. K. Mayor, C.B.; Thomas Moore, C.B., very fine; and Wm. Skirving: Flakes—Florence Nightingale, Sarah Payne, and seedlings. 3d, Mr. Joseph Lakin, Temple Cowley, Oxford, with—Bizarres: Thomas Bower, Thomas Moore, Lord Milton, A. Medhurst, Admiral Curzon, Fred, and Sarah Payne: Flakes—H. Cannell, Tim Bobbin, Florence Nightingale, and Sarah Payne. 4th, Messrs. Hooper & Co., Bath; 5th, Mr. W. J. Buxton, Clapham; 6th, Mr. S. Brown, Handsworth, Birmingham.

In the class for six blooms of Carnations, W. Rowan, Esq., Manor Street, Clapham, was 1st with—Bizarres: Mars, Falconbridge, Master Fred, and George, Miss Erskine Wemyss, S.F.; and Florence Nightingale, P.F. 2d, Mr. Arther Brown, with—Bizarres: Master Fred, Edward Adams, S.B.; and Florence Nightingale: Flakes—Dr. Foster, P.F.; Miss E. Wemyss, and Squire Dodwell, S.F. 3d, Mr. Thomas Anstiss, Brill; 4th, Mr. W. Slack Chesterfield; 5th, Mr. H. Catley, Bath. In the classes for single blooms a large number of capital flowers were staged, and it was here that Mr. Turner displayed his preeminence in a remarkable degree with S. Biz. Mr. C. Turner was 1st, with Robert Lord; 2d, with Master Stanley; 3d, with Robert Lord; and 4th, with James McIntosh; Mr. Dodwell being 5th, with Seedling 1001. In the class for C.B.'s, Mr. Dodwell was 1st, with Seedling 1005; Mr. Turner 2d, with A. D. Southgate; 3d, with Thomas Moore; 4th, Mr. Dodwell, with Seedling 842; 5th, Mr. C. Turner with Mr. E. S. Dodwell. All the prizes in the class for P.P.B.'s went to Mr. Turner; he was 1st with W. Skirving, 2d with Squire Llewelyn, 3d with W. Skirving, 4th with the same, and 5th with Squire Llewelyn. In the class for P.F.'s, Mr. Douglas was 1st with Florence Nightingale; Mr. Turner 2d and 3d, with the same; Mr, Douglas 4th, with Squire Whitburne; and Mr. Turner, 5th, with Florence Nightingale. In the class for S.F.'s, Mr. E. S. Dodwell was 1st, with Tom Lord, a variety of high-class merit; 2d and 3d, Mrs. C. Turner, with Matador; 4th, Mr. Dodwell, with Seedling 979; and 5th, Mr. C. Turner, with Matador. In the class for P.F.'s, Mr. C. Turner was 1st and 3d, with Jessica, 2d with Mr. Bridgewater, 4th with Rob Roy; Mr. Douglas being 5th, with Jessica.

PICOTEES.—In class E., for twenty-four blooms of Picotees, no less than twelve dissimilar varieties, Mr. Turner was 1st, with J. B. Bryant, Dr. Epps, Mrs. Gibbons, Mrs. Payne. Maude (Fellowes), a heavy P.E.; Duchess (Fellowes). Heavy Scarlet: Louisa, Mr. Rayner, Mrs. Webb (Fellowes); Heavy Scarlet—Mrs. Chancellor, Muriel, Orlando (Fellowes); Light Red—Ethel, Zerlina, Her Majesty, and Mr. Tutton. 2d, Mr. Douglas, with Brunette, John Smith, H. Red, very fine; Constance Heron, Miss Lee, Mrs. Aldcroft, Mrs. Rayner, Ethel, Jessie, Mrs. Gorton, Her Majesty, Baroness Burdett-Coutts, Zerlina, and Thomas Williams. 3d, Mr. E. S. Dodwell, with Royal Visit, Dr. Epps, Purple Prince, Constance Heron, Novelty, heavily flaked with pinkish-purple on the edge; and Clara Penson, light purple, very good. 4th, Mr. John Hines, Ipswich; 5th, Messrs. Hooper, Bath. In the class for twelve blooms, Mr. Douglas was 1st, with Constance Heron, Mrs. Payne, Princess of Wales, Mrs. Chancellor, Mrs. Bower, Ethel, Her Majesty, Jessie, Clara Penson, and Estelle, light scarlet. 2d, Mr. E. S. Dodwell, with Jessie, Brunette, Her Majesty, Medium, Edith D'Ombrain, Mrs. Chancellor, Mrs. Payne, Constance Heron, Novelty, Muriel, and Mrs. Rudd. 3d, Mr. J. Lakin; 4th, Mr. J. Buxton; 5th, Messrs. Hooper; 6th, Mr. J. Hines. In the class for six blooms there were as many as eight competitors; Mr. Thomas Anstiss, Brill, being 1st, with Liddington Favourite, L. Rose; Her Majesty, Mrs. Dodwell, Royal Visit, Mrs. Payne, and Mrs. Chancellor; 2d, Mr. H. Catley, with J. B. Bryant, Mrs. Tonge, Medium P.; Alliance, H.P.; Her Majesty, Mrs. Fordham, and Rev. F. D. Horner, Light Red; 3d, Mr. M. Rowan; 4th, Mr. A. Brown; 5th, Mr. H. Meddick, Bath.

Of single blooms there were a large number, and in the class for Heavy Reds Mr. Turner was 1st, 2d, and 3d, with J. B. Bryant; 4th, with Brunette; Mr. Douglas being 5th with Princess of Wales. Light Reds: Mr. Turner was 1st and 2d, with Mrs. Bower; 3d and 4th with Mrs. Gorton; Mr. Douglas being 5th with Violet Douglas. Light Purple: 1st and 2d, Mr. C. Turner, with Her Majesty; Mr. Douglas being 3d with Nymph; 4th with Clara Penson, and 5th with Her Majesty. Heavy Purple: In this class all the prizes went to Mr. Turner, with Muriel, it being in fine condition. Heavy Rose: 1st, Mr. Turner, with Mrs. Payne; 2d, with Royal Visit; 4th with Mrs. Payne; and 5th do.; Mr. Dodwell being 3d with Royal Visit. Light Rose: 1st, Mr. Anstiss, with Liddington Favourite; 2d, Mr. C. Turner, with Ethel; 3d, with Evelyn; 4th, Mr. Anstiss, with Liddington Favourite; 5th, Mr. Turner, with Empress Eugenie. In the class for single blooms of yellow ground Picotees, Mr. Douglas was 1st, 3d, and 4th, with Ne Plus Ultra; Mr. Turner 2d, with Janira; and 4th, with Mrs. Cavill.

CARNATIONS AND PICOTEES, FANCIES, &c.—With twenty-four blooms, not less than twelve varieties, Mr. C. Turner was 1st, with a very fine and varied lot of flowers. Some of them run blooms of well-known varieties, the most striking being Seedling 3341, deep crimson flaked with maroon; Matador, Thomas Jones, Reverse, Flirt, Florence Nightingale, Elegant, Mrs. Bridgewater, Jessica, Mabel Morris, Edith and Lady Cathcart, two yellow; the Governor and Virgo, two white varieties—the latter very fine indeed; 2d, Mr. J. Douglas, with Queen, Rosy Queen, Purple Gem, Fire Gem, Alice, Arthur Medhurst, Mary, W. P. Milner, &c.; 3d, Messrs. Hooper; 4th, Mr. H. Catley. With twelve blooms, Mr. E. S. Dodwell was 1st, with a very fine lot of seedlings and run flowers; 2d, Mr. J. Lakin; 3d, Mr. Thos. Austiss; 4th, Mr. Hyam, Hayes; 5th, Mr. H. Meddick.

Yellow Ground Picotees.—Mr. Turner had the best twelve blooms of these, staging fine examples of Prince of Orange, Janira, Dove, Starlight, Eleanor, Mrs. Cavill, Lady M. Lascelles, and Mazzini; 2d, Mr. J. Douglas, with Princess Beatrice, Mrs. Coleman, Flavius, Prince of Orange, Janira, and Ne Plus Ultra; 3d, Messrs. Hooper; 4th, Mr. H. Catley.

The Premier Carnation, selected from the entire collection, was C.B. Master Fred, shown by Mr. E. S. Dodwell; and the Premier Picotee, Muriel, heavy purple, shown by Mr. C. Turner. Both these fine varieties were raised by Mr. W. M. Hewitt, Chesterfield.

There was a class for nine specimens in pots, selected from all the classes, and Mr. C. Turner was 1st, with plants of excellent growth and well-bloomed. Of Carnations there were Matador, W. Skirving, A. Medhurst, and Rob Roy; of Picotees, Brunette, Rosy Queen, Mrs. Payne, and Yellow Clove Edith.

Some miscellaneous exhibits proved of a very helpful character. Messrs. Paul & Son, Cheshunt, had a large number of Carnations and Picotees in pots. Messrs. Veitch & Sons had eight boxes of cut flowers, containing forty blooms each—two of Carnations, two of Picotees, and four of Cloves, and a very fine lot they were; in addition they had ten bunches of self Pinks, set up neatly and effectively, about ten flowers in a bunch, and to one of these, named Rose Perfection, a First-class Certificate of Merit was awarded. Messrs. Cross & Steer, of Salisbury, had boxes of their new white Clove Carnations, The Governor and Lady Louisa Ashburton—the latter with fringed petals; and Mr. H. G. Smyth, Goldsmith Street, Drury Lane, had a number of fine blooms of his rose-coloured Carnation, Mary Morris.

National Rose Society: *Manchester, July* 19.—The third exhibition of this Society held at Manchester took place in the Royal Botanical Gardens, Old Trafford, on the above date, the tables being arranged lengthwise in the new exhibition house—two in the middle and one on either side. It was considered to be a very good exhibition—the second best held in Cottonopolis, though the quality was a little under that held at Salisbury on the 9th inst. Mr. Geo. Paul characterised it as a very good show, one of the best of the year; and individual blooms in the amateurs' classes were so good that it was necessary, in some instances, to give them four points. As a matter of course the new exhibition house is a large building to fill with Roses, but there were not many empty spaces, and the Manchester people, who came to Old Trafford in large numbers, appeared greatly delighted with the display. The day was very fine, and the grounds at the Botanical Gardens were seen at their best—Delphiniums, White Lilies, Violas, and many other things being very gay and effective. That the Rose is a very favourite flower in Lancashire cannot be doubted. Time was when the old florists placed the Pink first, the Ranunculus second, and the Rose third; now the Rose would be assigned the first place. In the nurserymen's division the leading class was for seventy-two varieties, single blooms, and here Messrs. Paul & Son, of the Old Nurseries, Cheshunt—who it must be admitted are having a very successful season—were well ahead with clean fresh blooms of high quality, foremost being a superb bloom of old Sénateur Vaisse, still, when at its best, one of the finest of scarlet Roses; and attractive examples of Pierre Notting, Etienne Levet, Comte de Raimbaud, Oliver Delhomme, Annie Wood, Horace Vernet, Hippolyte Jamain, Merveille de Lyon, in fine condition; Louis van Houtte, Duchesse de Morny, Dr. Andry, Camille Bernardin, Tea Innocente Pirola, Duchess of Albany, Xavier Olibo, J. S. Mill, Souvenir de Coulommiers, Duc de Rohan, Madame Victor Verdier, Madame Gabrielle Luizet, Queen of Queens, Mons. Alfred Dumesnil, Marie Baumann, Ulrich Brunner, Star of Waltham, Earl of Pembroke, Black Prince, Dr. Hogg, Madame Alphonse Lavallée, Harrison Weir, Madame George Schwartz, Mons. E. Y. Teas, Edward André, Marie Rady, A. Colomb, A. K. Williams, Mrs. Jowitt, Pride of Waltham, Madame Nachary, Mdlle. Marie Finger, Nardy Frères, Devienne Lamy, and Prince Arthur. 2d, Mr. B. R. Cant, St. John's Nursery, Colchester, whose leading flowers, and some of them were very fine, consisted of Madame Eugène Verdier, Sénateur Vaisse, Prince Arthur, Madame Gabrielle Luizet, Madame George Paul, Général Jacqueminot, Duke of Wellington, Gloire de Vitry, Star of Waltham, Mrs. Jowitt, Tea Comtesse de Nadaillac, Duchess of Albany, Alfred Colomb, Fisher Holmes, Pride of Waltham, Duke of Wellington, Le Havre, Tea Catherine Mermet, A. K. Williams, Souvenir de Coulommiers, Black Prince, Marie Baumann, Madame C. Crapelet, Mons. E. Y. Teas, Etienne Levet, Prince Camille de Rohan, Noisette Maréchal Niel, Souvenir de Madame Boll, Charles Lefebvre, Maurice Bernardin, Dr. Sewell, Mons. Caillat, Auguste Neumann, and Auguste Rigotard; 3d, Mr. Frankland, nurseryman, Colchester, who staged good blooms of the following:—Noisette Maréchal Niel, Duke of Edinburgh, Général Jacqueminot, Fisher Holmes, Duchess of Connaught, Madame Crapelet, Gustave Lévêque, Comtesse de Paris, Ulrich Brunner, A. K. Williams, Duke of Wellington, and Reynolds Hole; 4th, The Cranston Seed and Nursery Company, Hereford; these four firms comprising the whole of the competitors. In the class for thirty-six varieties, three trusses of each, Messrs. Paul & Son were again 1st with a very fine lot, the most prominent varieties being A. K. Williams, Etienne Levet, Sénateur Vaisse, Baroness Rothschild, Madame Hippolyte Jamain, Comte Raimbaud, Marie Fraz r, Merveille de Lyon, shown very finely by this firm; Mdlle. Prosper Langier, Alfred Colomb, Lady Sheffield, La France, Xavier Olibo, Star of Waltham, Ulrich Brunner, Marie Baumann, Prince Arthur, very bright indeed; and Pride of Waltham. 2d, Mr. B. R. Cant, with fine fresh blooms of Marie Verdier, Duke of Edinburgh, Mdlle. Eugène Verdier, Madame Gabrielle Luizet, Baroness Rothschild, A. K. Williams, Marie Rady, Alfred Colomb, Souvenir de Coulommiers, La France, St. George, Comtesse de Nadaillac (Tea), Catherine Mermet (Tea), Merveille de Lyon, Lady Shepherd, Charles Lefebvre, and Louis Peyronny; 3d, The Cranston Nursery Company. Messrs. Mack & Son, Catterick Bridge, were not placed in this class.

Class 3 was for eighteen Tea and Noisette Roses, and their scarcity, owing to the lateness of the season, was evidenced by the fact that two competitors only competed—Mr. B. R. Cant being 1st, with good blooms of Comtesse de Nadaillac, Maréchal Niel, Souvenir de Mons. Pernet, Belle Lyonnaise, Madame Auguste Jacquin, Catherine Mermet, Jean Ducher, Innocente Pirola, Moire, Souvenir d'Elise, Souvenir d'un Ami, Etoile de Lyon, Souvenir de Paul Néron, Marie van Houtte, Niphetos, La Boule d'Or, and Madame Hippolyte Jamain; 2d, Messrs. Paul & Son, whose leading varieties were Souvenir d'Elise Vardon, Catherine Mermet, Souvenir d'un Ami, Niphetos, Marie van Houtte, Rubens, Madame Willermoz, Perle des Jardins, Comtesse de Nadaillac, Madame Cusin, Alba rosa, Innocente Pirola, and Madame Eugène Verdier.

In division B., for nurserymen, exhibitors in the previous classes being excluded, there was a good competition, excepting in the class for Teas and Noisettes; the 1st prize for thirty-six varieties, single trusses, was taken by Mr. John House, nurseryman, Peterborough, who had good blooms of Mr. J. S. Mill, Xavier Olibo, Baron Hausmann, Madame C. Crapelet, Horace Vernet, Mons. E. Y. Teas, Comtesse d'Oxford, Harrison Weir, Beauty of Waltham, A. K. Williams, Charles Lefebvre, Reynolds Hole, Merveille de Lyon, Alfred Colomb, Madame Eugène Verdier, Marie van Houtte, Marie Rady, and Duchesse de Morny. 2d, Messrs. J. Burrell & Co., Huntingdon Road Nursery, Cambridge, whose best flowers were Devienne Lamy, Sénateur Vaisse, Duke of Teck, Oliver Delhomme, Louis van Houtte, Annie Wood, Comtesse de Serenye, Bouquet d'Or, Mons. E. Y. Teas, A. K. Williams, Lælia, Alfred Colomb, Dr. Andry, Marie Finger, Princess Beatrice, Prince Camille de Rohan, and Louis van Houtte; 3d, Mr. Frettingham, nurseryman, Beeston, Notts; 4th, Mr. George Prince, nurseryman, Oxford. There were twelve stands in this class, and with such a competition it is a pity two or three extra prizes could not have been awarded. There was a similar number of competitors in the class for eighteen varieties, three trusses of each, and here again Mr. John House, who was showing in good form, was 1st with good examples of Madame Eugène Verdier, Marie Baumann, Ulrich Brunner, Merveille de Lyon, Alfred Colomb, Madame Eugène Verdier, Harrison Weir, Mons. Alfred Dumesnil, Reynolds Hole, Charles Lefebvre, Marie Verdier, A. K. Williams, Baroness Rothschild, and Exposition de Brie. 2d, Mr. George Prince, his leading flowers being Alfred Colomb, Annie Wood, Comtesse de Nadaillac, Prince Arthur, La France, Louis van Houtte, Marie Verdier, Mrs. Jowitt, Anna Olivier, Marie Baumann, Fisher Holmes, A. K. Williams, and Ulrich Brunner; 3d, Messrs. J. Burrell & Co.

There were three exhibitors of twelve Teas or Noisettes, and here Mr. G. Prince was 1st with a pretty lot, consisting of Niphetos, Comtesse de Nadaillac, Maréchal Niel, Catherine Mermet, Souvenir de Madame Pernet, Amazone, Madame A. Jacquin, Francesca Kruger, Anna Olivier, Princess of Wales, Innocente Pirola, and Madame Lambard; 2d, Mr. John Mattock, nurseryman, Oxford, with Marie van Houtte, Madame Welche, Comtesse de Nadaillac, Comtesse Riza du Parc, Perle des Jardins, Innocente Pirola, and Devoniensis; 3d, Messrs. George Cooling & Son, nurserymen, Bath.

In division C., for amateurs, the class on which most interest was concentrated was that for thirty-six varieties, single trusses, as in addition to the 1st prize of £4 the winner was entitled to a Silver Cup, value 10 guineas, given by the Council of the Royal Botanical Society, Manchester. There were four competitors. The best stand came from the Rev. J. H. Pemberton, Romford, who staged a very fine lot of full-sized, fresh flowers, including Marie Baumann, Madame E. Levet, Prince Arthur, Madame Charles Crapelet, Madame Victor Verdier, Ulrich Brunner, Camille Bernardin, Harrison Weir, Marquise de Castellane, A. K. Williams, Louis van Houtte, Star of Waltham, Annie Wood, Belle Lyonnaise, Exposition de Brie, Horace Vernet, a splendid flower; May Quennell, Madame C. Wood, Dr. Andry, Catherine Mermet, a truly marvellous bloom; Comte Raimbaud, Duchess of Bedford, Marie Verdier, Alfred Colomb, Auguste Rigotard, and Duchess of Edinburgh. 2d, E. R. Whitwell, Esq., Darlington, with a very good lot indeed, consisting of Beauty of Waltham, very fine; Baroness Rothschild, Dupuy Jamain, Louis van Houtte, Etienne Levet, Général Jacqueminot, Charles Darwin, Madame Gabrielle Luizet, Mr. Laxton, Duke of Edinburgh, Duke of Wellington, J. S. Mill, Duchess of Connaught, Abel Carrière, Le Havre, La France, Lord Macaulay, Thomas Mills, and Alfred Colomb. 3d, T. B. Hall, Esq., Rock Ferry. Class 8 was for twelve varieties, three trusses of each, and here Mr. E. R. Whitwell was 1st, out of three competitors, staging good blooms of Marie Baumann, Fisher Holmes, Madame Hippolyte Jamain, Thomas Mills, Duc de Morny, Violette Bruyère, Abel Carrière, Baroness Rothschild, Alfred Colomb, J. S. Mill, Comte Raimbaud, and Duke of Edinburgh; 2d, the Rev. J. H. Pemberton, with good examples of Horace Vernet, Alfred Colomb, Duke of Wellington, Comtesse d'Oxford, Beauty of Waltham, A. K. Williams, Duchess of Bedford, Countess of Rosebery, and Baroness Rothschild; 3d, T. B. Hall, Esq., Rock Ferry. There were three competitors in the class for twelve Teas or Noisettes, Mr. T. B. Hall coming in 1st, with Niphetos, Marie van Houtte, Perle des Jardins, Souvenir d'un Ami, Madame Margottin, Madame Lambard, Innocente Pirola, Madame H. Jamain, Madame Willermoz, Catherine Mermet, Belle Lyonnaise, and Madame Charles; 2d, the Rev. J. H. Pemberton, whose leading flowers were Belle Lyonnaise, Catherine Mermet, Jean Ducher, Comtesse de Nadaillac, Madame Bravy, Marie van Houtte, Madame Lambard, and Jean Pernet; 3d, Mr. C. Jennings, Ronton, Cheshire.

In division D., for amateurs, those exhibiting in the previous classes were excluded; and with twenty-four varieties, single trusses, the Rev. J. Garnett, Chester, was 1st, with Madame Eugène Verdier, Ferdinand de Lesseps, Annie Wood, Marie Baumann, Captain Christy, Marie Rady, Horace Vernet, Marie Verdier, Jean Soupert, Abel Carrière, François Michelon, Madame H. Jamain, Alfred Colomb, Duke of Edinburgh, Baroness Rothschild, Thomas Mills (very bright), Louis van Houtte, and Comtesse de Serenye; 2d, Mr. W. Boyes, Mitford, Derby, whose best flowers were Sénateur Vaisse, Baroness Rothschild, Marie Baumann, Charles Lefebvre, Sir Garnet Wolseley, Duchesse de Caylus, Beauty of Waltham, Pierre Notting, Lord Macaulay, A. K. Williams, Souvenir de Spa, Devienne Lamy, Duchess of Connaught, and Madame Lacharme; 3d, Miss Watson Taylor, Headington, Oxford. In the class for eighteen varieties, single blooms, Mr. Alfred Tate, Woolton, was 1st, with Etienne Levet, La France, Marie Verdier, Charles Lefebvre, Victor Verdier, Dr. Andry, Marie Rady, Charles Darwin, J. S. Mill, John Hopper, Madame Lacharme, Sophie Fropot, Emile Hausberg, Pierre Notting, and Mr. Laxton; 2d, Mr. S. P. Budd, Bath, with Pride of Waltham, Duchess of Bedford (very bright), La France, Comtesse d'Oxford, Fisher Holmes, Alfred Colomb, Sénateur Vaisse, Duchesse de Morny, Duke of Edinburgh, Charles Darwin, Heinrich Schultheis (a delicate purplish-rose flower, of good form), and Madame Victor Verdier; 3d, Mr. W. Boyes. In that for nine Teas or Noisettes, Miss Watson Taylor was 1st, with Belle Lyonnaise, Innocente Pirola, Catherine Mermet, Madame Willermoz, Madame Wilcke, Souvenir d'un Ami, Souvenir d'Elise Vardon, Niphetos, and Comtesse de Nadaillac; 2d, Mr. A. Evan, Marston, Oxford, with Anna Olivier, Madame Welche, Devoniensis, Souvenir de Madame Pernet, Catherine Mermet, Souvenir de Paul Néron, and Marie van Houtte; 3d, Mr. A. Tate, Woolton.

Next came Division E., also for amateurs, those who had competed in the two previous ones being disqualified. In the class for twelve varieties, Mr. W. Harroway, Oxford, was the only exhibitor, having Marie Verdier, Alfred Colomb, A. K. Williams, Madame Gabrielle Luizet, Maurice Bernardin, Mrs. Jowitt, and Lady Mary Keith, as his best flowers. In the class for six varieties there were two competitors, and here the Rev. A. Cheales, Surrey, was 1st, with Comtesse de Serenye, Marquise de Castellane, Pierre Notting, Beauty of Waltham, Duke of Connaught, and Madame Thérèse Levet; 2d, W. E. Hall, Esq., Higher Bedington, his best flowers being Emile Hausberg, Charles Darwin, Baroness Rothschild, and Louis van Houtte. There were three exhibitors of six Tea and Noisette varieties, Mr. E. Clayton being 1st, with pretty blooms of Alba rosea, Madame Cusin, Bouquet d'Or, Souvenir d'un Ami, Madame H. Jamain and Madame A. Jacquin; 2d, Mr. W. Harroway, Oxford; 3d, the Rev. A. Cheales.

Special prizes were offered by Mr. George Prince, of Oxford, for Tea or Noisette Roses, single trusses, with blossom-buds and foliage as cut from the tree, to be shown in an epergne with one centre and three side cups. This brought three competitors, and made an interesting exhibit, Mr. Alfred Evans was 1st, Mr. T. B. Hall 2d, and Miss Watson-Taylor 3d. A good deal of taste was shown in the arrangements, and what is wanted is Tea Roses on long stiff stems, so that they can be shown off to advantage. Mr. Prince himself set up a charming stand, not for competition, thereby giving a useful lead to competitors.

In the class for six new Roses, not having been in commerce previous to 1881, Mr. T. B. Hall was 1st, Ulrich Brunner fils, Masterpiece, Comtesse de Camando, Pride of Waltham, Mrs. Jowitt, and Etoile de Lyon; 2d, The Rev. J. H. Pemberton, with White Baroness Comtesse de Ludre, Mary Paul, Rosieriste Jacobs, Archduchess Elizabeth, and Helen Paul.

In the class for twelve new Roses, put into commerce since 1881, Messrs. Paul & Son were 1st, with François Levet, Merveille de Lyon, Ulrich Brunner fils, H. Schultheis, Grandeur of Cheshunt, Queen of Queens, Duke of Albany, Lady Sheffield, Comtesse de Paris, Pride of Waltham, Duchess of Connaught, and Souvenir de Ann Lee. 2d, Messrs. Geo. Cooling & Son, Bath, with Merveille de Lyon, Lady Sheffield, Helen Paul, Queen of Queens, Pride of Waltham, Alfred Dumesnil, Duchess of Connaught, Madame Mould, Guillaume Guillemot, and Comte de Flandres. 3d, Messrs. T. & A. Dickson & Sons, Upton Nurseries, Chester.

In the class for the best twelve blooms of any yellow Rose, Mr. B. R. Cant was 1st, with Maréchal Niel; and Messrs. Paul & Son 2d, with the same. In that for any white Rose, Merveille de Lyon was superbly shown, 1st by Mr. B. R. Cant, and 2d by Messrs. Paul & Son; Mr. Geo. Prince being 3d, with Innocente Pirola: Helen Paul was also shown. In that for any crimson Rose, Mr. H. Frettingham was 1st, with Alfred Colomb; Mr. Geo. Prince 2d, with the same; and Mr. J. House 3d, with A. K. Williams: Prince Arthur, Marie Baumann, and Horace Vernet were also shown. In that for any Rose, Mr. B. R. Cant was 1st, with Alfred Colomb; Messrs. R. Mack & Son 2d, with the same; 3d, The Cranston Company, with Baroness Rothschild.

The tempting prize of the Gold Medal of the National Rose Society was offered for the best new seedling Rose or sport, not yet in commerce: and two were forthcoming, one as a pale sport from Madame Eugenie Verdier, from Mr. Geo. Swailes, of Beverley, which was Highly Commended; and a seedling H.P., a bright Beauty of Waltham, from Messrs. Paul & Son, but neither were thought good enough to receive the medal.

Boxes of cut blooms of William Allan Richardson were shown by Messrs. G. Prince and Paul & Son.

Cut specimens of hardy flowers of a very interesting character were shown by Messrs. Dickson, Brown, & Tait, and Dickson & Robinson, both Manchester firms.

Caterham Horticultural: *July* 23.—This was the sixth annual show of a society that is annually growing in importance. It is mainly managed by local gardeners, and though there appears to be a little difficulty in making both ends meet, still a small balance accrues every year. The exhibition for this year was held as usual in a field attached to the Vicarage, and the exhibits generally were characterised by a decidedly higher quality than last year. Messrs. Paul & Son sent from Cheshunt a charming contribution of cut Roses; Messrs. J. Laing & Co., Begonias and other plants arranged in pretty groups; Messrs. Jeffkins & Co., of the Westerham Nurseries, cut Roses, plants, and an interesting collection of cut specimens of hardy flowers; and Messrs. G. R. Woollett & Co., The Nurseries, Caterham, a good collection of cut Roses.

One of the leading features of the show were the tuberous-rooted Begonias. Messrs. J. Laing & Co. offered special prizes for six plants, and four good collections were staged, the best winning from Mr. Clinging, gr. to P. R. Buchanan, Esq., Marden Park; Mr. Cawley being 2d, and two equal 3d prizes were awarded. In the class for three plants Mr. Clinging was again 1st, and Mr. Cawley 2d; all the plants were well grown and flowered. Mr. Clinging, who is the leading exhibitor at this show, had the best three greenhouse plants; Mr. Brand, gr. to H. Gardener, Esq., being 2d. They were generally of a common character, but well grown and flowered. There were some Gloxinias of good quality, and Balsams were fairly well grown.

Ferns made a good display; medium sized plants of excellent growth. Mr. Pearman, gr. to H. Horne, Esq., had the three best, having Davallia Mooreana, and two excellent Adiantums; Mr. Brand, came in a good 2d, with Davallia bullata, D. Mooreana, and Adiantum Farleyense. The best specimen foliaged plant was a capital Seaforthia elegans from Mr. Clinging, Mr. Brand coming 2d with a very good piece of Latania borbonica. A special prize was offered for four Coleus, which was won by Mr. Wyatt, with four of the best specimens we have seen this season. The groups of plants arranged for effect were a good feature, and Mr. Brand came in a good 1st, Mr. Pearman being 2d, and Mr. Hicks 3d. Mr. Clinging had the best three Fuchsias, and the best specimen also.

In the cut flower classes the best twelve Roses were shown by Mr. Wyatt, Mr. Knight being 2d. They were nice bright fresh flowers. Mr. Johnson had the best twelve bunches of cut flowers, Mr. Pearman being 2d. Mr. Wyatt had the best six bunches, and Mr. Brand 2d. There was a special class for twelve cut Dahlias, and here some good flowers were shown.

Of fruit there was a good display for the locality. Mr. Clinging was 1st with Black Hamburgh and Buckland Sweetwater Grapes, Royal George Peaches, and Elruge Nectarines, making up four dishes. Mr. Pearman was 2d. Mr. Clinging had the best two bunches of Black Hamburgh Grapes, and also of Foster's Seedling; Mr. Coffin was 2d, with Black Hamburgh; and Mr. Pearman with white, staging Foster's Seedling.

There were prizes for table decorations shown by ladies, and bouquets of wild flowers and grasses from children. There were plenty of vegetables, Potatos being very good, and the display made by cottagers was very satisfactory.

Harpenden—A Wild Flower Show.—As the very names of Rothamsted and Harpenden have been so long associated with the science of vegetable life and experimental research, and the Rothamsted Laboratory so closely allied with botanical work, it is not surprising that the study of economic botany is receiving more than usual attention in the excellent British School in the village under the able and spirited master, Mr. J. Henshaw, whose name is not unknown among the usual amateur competitors at the Crystal Palace Dahlia Show. On Friday and Saturday of last week the fifth annual exhibition of wild flowers and grassses was held in the British Boys' School, and within the shadow of the famous laboratory of Sir J. B. Lawes and Dr. J. H. Gilbert, whose patient researches during the past forty years, have conferred such immense benefits on all cultivators of the soil. The competitors were selected from the boys in the upper classes of the school, and were divided into three divisions, the first showing fifty species each, the second thirty, and the third twenty. The exhibits were arranged, as in former years, in rows of bottles of various sizes, and labelled with the scientific and common names, the whole being banked up with excellent exotic Ferns, foliage plants, and Orange trees in full fruit, kindly lent for the occasion by Mrs. Warde, Mr. C. R. Fenwick, and Mr. H. T. Hodson, the *tout ensemble* being extremely effective, particularly as the walls of the room were ornamented with admirably mounted botanical specimens of dried British plants, the work of Mr. William Deller, a pupil teacher of the school.

The 1st prize, a book, entitled *British Birds and their Haunts*, by the Rev. C. A. John, offered by Mrs. Warde, was won by Henry Rudd, whose collection included Sedum album (Stonecrop), Cotyledon umbilicus (Pennywort), Hypericum pulchrum (Slender St. John's Wort), Lychnis diurna (Red Campion), Atropa belladonna (Deadly Nightshade), Ophioglossum vulgatum (Adder's-tongue Fern), Lysimachia nummularia (Moneywort), Campanula glomerata (Clustered Bellflower), C. latifolia (Giant Bellflower), and Chrysanthemum segetum The 2d prize, *Flowers of the Field*, also by the Rev. C. A. John, was taken by John D. Aldridge, whose specimens included the following plants of interest:—Spiræa Filipendula (Dropwort), Echium vulgare (Viper's Bugloss), Epipactis palustris, Campanula Trachelium (Nettle-leaved Bellflower), Linaria repens (Pale Toad-flax), and Cichorium intybus (Wild Chicory).

The 1st prize in division B., for thirty specimens, a book, entitled *Wild Flowers Worth Noticing*, by Mrs. Lankester, offered by the Rev. G. Henslow, of Drayton House, Ealing, was secured by Frederick Deller; the 2d prize, Dr. M. T. Masters' *Botany for Beginners*, was awarded to Frederick A. Willis; and a 3d prize, *British Ferns*, was taken by William Prentice. In these collections we noticed Hypericum Androsæmum (Tutsan), Reseda lutea (cut-leaved Mignonette), Melilotus alba (white Melilot), Butomus umbellatus (flowering Rush), Anthyllis Vulneraria (kidney Vetch, or Lady's Fingers), Meconopsis cambrica (Welsh Yellow Poppy), Geranium pratense (Meadow Crane's-bill), Digitalis purpurea var. alba (white Foxglove), Anthemis tinctoria (yellow Camomile), and Hypericum humifusum (trailing St. John's Wort).

In the next division, for twenty species, there were four prizes, the 1st being offered by Miss Fenwick, of High Firs, Harpenden; and were severally entitled *Flowers of the Field*, *Botany for Beginners*, *Rambles in Woodland*, and *Lane and Field*. The winners of these prizes were George Underwood, Edwin H. Guess, Fred. Crockford; Herbert Dawson and Fred. Crawley equal 4ths.

A very great acquisition was made to the show, as in former years, by some interesting collections of hardy herbaceous cut flowers, to which was appropriated the class-room of the school. These were exhibited by Mr. G. W. Sheppard, Garden House, Wheathamsted; Mr. J. Henshaw, Harpenden; Rev. Dr. Griffith, Vicar of Sandridge; and Messrs. Paul & Son, the "Old" Nurseries, Cheshunt, from their new herbaceous plant nursery at Broxbourne. Mr. Henshaw's collection was certainly excellent, and showed good cultural skill; among them we noticed Spiræa venusta, a lovely deep rosy-carmine flower, produced on stems about 3 feet high, an extremely useful plant for cutting, and one that all lovers of these flowers should grow; Gaillardia grandiflora, a singularly beautiful species; Aquilegia Skinneri, a red flower, with tips of the petals golden-yellow; Spiræa Filipendula flore-pleno, composed of numerous corymbs of double white flowers with a slight creamy tinge—the pretty Fern-like foliage of this variety is exceedingly attractive; Gladiolus Colvilli The Bride, one of the most charming of these beautiful plants; and Dianthus barbatus plenus, which is a bouquet in itself. Messrs. Paul's collection comprised many rare alpine species, which, quite apart from the æsthetic interest of these plants just now, possessed qualities well entitling them to notice, and we need scarcely say that a large number of persons availed themselves of the opportunity of enjoying such a floral treat, and in some measure tracing the gradation from the "wild" to the "cultivated" varieties.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, JULY 23, 1884

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		WIND		RAINFALL.
	Mean Reading Reduced to 32° Fahr	Departure from Average of 18 years.	Highest.	Lowest.	Range	Mean for Day.	Departure of Mean from Average of 39 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
July	In.	In.	°	°	°	°	°	°	°			In.
17	29.67	−0.13	72.0	53.5	18.5	63.5	+ 0.8	48.1	57	W.; S.W.		0.08
18	29.87	+0.07	69.0	52.0	17.0	59.7	− 2.9	49.3	68	W.; W.NW.		0.00
19	29.97	+0.17	67.0	49.5	17.5	57.8	− 4.7	47.4	69	N.W.		0.00
20	29.93	+0.14	69.5	49.5	20.0	60.8	− 1.6	46.0	59	W.; N.NW.		0.00
21	29.74	−0.04	69.0	56.5	12.5	61.4	− 0.9	58.3	90	S.		0.30
22	29.83	+0.05	73.0	54.5	18.5	63.0	+ 0.7	58.4	85	W.; N.W		0.03
23	29.65	−0.13	70.0	58.0	12.0	62.1	− 0.1	55.2	78	W.; N.W.		0.00
Mean	29.81	+0.02	69.9	53.4	16.5	61.2	− 1.2	51.8	72	W.NW.		0.38

July 17.—Fine and bright generally, few slight showers of rain during the day. Fine clear night.
— 18.—Fine day, overcast at times. Fine clear night.
— 19.—Fine bright day and night.
— 20.—Fine clear day and night.
— 21.—Dull morning, rain falling. Fine day, heavy rain between 6 P.M. and 6.30 P.M.
— 22.—Dull day mostly, faint gleams of sunshine. Fine night.
— 23.—Dull day, slight showers of rain in morning. Fine night, clear and cloudy alternately.

LONDON: *Atmospheric Pressure.*—During the week ending July 19, the reading of the barometer at the level of the sea decreased from 29.94 inches at the beginning of the week to 29.85 inches by 3 P.M. on the 13th, increased to 29.99 inches by 9 A.M. on the 14th, decreased to 29.97 inches by 3 P.M., increased to 29.99 inches by midnight on the same day, decreased to 29.70 inches by 9 A.M. on the 16th, increased to 29.83 inches by 9 A.M. on the 17th, decreased to 29.79 inches by 3 P.M. on the same day, increased to 30.06 inches by 9 A.M., and decreased to 30.04 inches by 3 P.M. on the 18th, and was 30.18 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.94 inches, being 0.08 inch higher than last week, and 0.05 inch below the average of the week.

Temperature. — The highest temperature in the shade in the week was 82°, on the 13th; the highest on the 19th was 67°. The mean of the seven high day temperatures was 72°.

The lowest temperature was 49° 5, on the 19th; on the 13th the lowest temperature was 58°. The mean of the seven low night temperatures was 54°.4.

The greatest range of temperature in one day was 24°, on the 13th; the smallest was 14°, on the 15th and 16th. The mean of the seven daily ranges was 17°.6.

The mean temperatures were—on the 13th, 68°.9; on the 14th, 62 7; on the 15th, 63 .1; on the 16th, 61 9; on the 17th, 63°.5; on the 18th, 59°.7; on the 19th, 57 8; of these the 13th, 14th, 15th, and 17th were above their averages by 6°.4, 0°.1, 0°.4, and 0°.8; and the rest were below by 0°.8, 2°.9, and 4° 7, respectively.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 138°, on the 13th. The mean of the seven readings was 123°.2.

The lowest reading of a minimum thermometer with its bulb placed on grass was 41° 5, on the 19th. The mean of the seven readings was 47°.5.

Rain.—Rain fell on three days during the week, to the amount of 0.21 inch.

ENGLAND: *Temperature.*—During the week ending July 19 the highest temperatures were 83° at Cambridge, 82° at Blackheath, 79° at Brighton and Sheffield; the highest at Truro and Plymouth was 70°, and at Sunderland 71°. The general mean was 75°.5.

The lowest temperatures in the week were 43°.7 at Wolverhampton, 45°.3 at Bolton, 46° at Sunderland; the lowest at Plymouth was 53°.8, at Truro and Brighton 52°. The general mean was 48°.7.

The greatest ranges were 36°.5 at Cambridge, 32°.5 at Blackheath, 31° at Sheffield; the smallest ranges were 16°.2 at Plymouth, 18° at Truro, 21°.5 at Preston. The general mean was 26°.8.

The mean of the seven high day temperatures was highest at Cambridge, 74°, at Brighton 73°, at Leeds 72°.7; and was lowest at Bolton, 61°.5, at Liverpool 66°.4, and at Sunderland 66° 6. The general mean was 69°.5.

The mean of the seven low night temperatures was highest at Plymouth, 57°.5, at Brighton 57°.3, at Truro 56°.4; and was lowest at Wolverhampton, 50°.3, at Bolton 51°.9, at Cambridge 52°.9. The general mean was 54°.3.

The mean daily range was greatest at Cambridge, 21°.1, at Wolverhampton 19°.1, at Nottingham 18°; and was least at Plymouth, 10°.1, at Truro 11°.3, at Liverpool 12°.8. The general mean was 15°.2.

The mean temperature was highest at Brighton, 63°.3, at Blackheath 62°.5, at Leeds 62°; and was lowest at Wolverhampton, 57°.9, at Sunderland 58°, at Liverpool 58°.2. The general mean was 60°.1.

Rain.—The largest fall was 1.59 inch, at Bristol, 1.13 inch at Truro, 1.12 inch at Plymouth; the smallest fall was 0.21 inch at Blackheath, 0.24 inch at Cambridge, 0.27 inch at Leeds. The general mean fall was 0.60 inch.

SCOTLAND: *Temperature.*—During the week ending July 19, the highest temperature was 73°.5, at Aberdeen; at Greenock the highest was 69°. The general mean was 71°.4.

The lowest temperature in the week was 42°.8, at Edinburgh; at Dundee the lowest temperature was 50°.5 The general mean was 45°.6.

The mean temperature was highest at Leith, 60°.1, and lowest at Greenock was 58°.2. The general mean was 59°.1.

Rain.—The largest fall was 2.65 inches, at Dundee; and the smallest fall was 0.70 inch, at Glasgow. The general mean was 1.35 inch.

JAMES GLAISHER, F.R.S.

THE WILD CHICORY. — Were Cichorium intybus a rare plant, difficult to grow and to propagate, it would no doubt more frequently find a place in gardens than is the case at present; nevertheless, there are few more beautiful plants in the whole series of exotic perennials. When moved from the roadsides or chalky banks on which it occurs in a wild state and transplanted to a garden, where it no longer has to do battle with the surrounding vegetation, it assumes a larger size and forms a handsome object in the herbaceous border. We have seen specimens 7 or 8 feet high, even in very poor sandy soil, literally covered with beautiful torquoise-blue flower-heads. In the herbaceous collection at Kew one of the most attractive plants now in flower is a specimen as high as a man. We advise lovers of herbaceous plants who have not yet tried this native weed to do so.

Variorum.

THE NARDOO. — With reference to the Nardoo (Marsilea), so common in all our swamps, I have been informed by a gentleman who was at Cooper's Creek at the time of the death of Burk and Wills, that (speaking of the aborigines) after the swamps have dried up they collect the Nardoo in large quantities by kneeling on the ground and scraping it together. It is then put into a "cogie," or piece of the sap-wood of a tree, with a hollow knot or protuberance which forms a cup-shaped cavity, where it is freed from earth or other dirt, and then ground in a quern, which is simply a flat stone slightly hollowed out in an oblong form. The process of grinding is performed with a round, smooth boulder, and is facilitated by the addition of a little water, or if that is scarce, by a squirt from the mouth, and when it is reduced to a sticky pulp it is fit for use. Contrary to the general belief, the Nardoo is never converted into bread by these blacks. In the wet season, when the Nardoo is not procurable, the blacks derive a good deal of their support from the seed of a Myrtaceous tree, which he believes to be a species of Eucalyptus, and known there by the name of Yellow Box. When the fruit is nearly ripe a small patch is cleared round the tree and confined by branches, to prevent the fruit from escaping when thrown on the ground. When a sufficient quantity has been cut down they are allowed to remain on the ground till the capsule bursts and discharges the small seed, which is then collected into the "cogie," and afterwards manufactured like Nardoo. Also from the seeds of a tall grass (evidently a Panicum), known by the aborigines as "Pawpa," which is treated in a similar manner to the Yellow Box seeds. Hats are made from the stems of this grass simply by sewing them together. *P. A. O'Shanesy on the Flora of Queensland.*

PANCRATIUM MARITIMUM.—The Sea Pancratium, or Daffodil, as it is called in old books, is the only European member of a genus which contains a number of highly ornamental and rather popular garden plants. It was introducee to this country more than a couple of centuries ago, but like a few other Amaryllids which affect similar situations it is difficult to flower under cultivation. A figure appeared in the *Botanical Register*, vol. ii., t. 161, and it is there stated that the plant drawn was the only one which the author had either seen or heard of in this country. In a state of Nature it is found deeply buried in the sand amongst the rocks on the sea-shore, and the species occurs all along the coast of Southern Europe. A plant was in flower lately at Kew, and its umbel of large, exquisitely fragrant, handsome white flowers, made one wish they were more frequently produced.

Answers to Correspondents.

BEES AND PEACHES : *Lithuania.* All we can suggest is the covering of the trees in the daytime with fine hexagon netting.

CARNATIONS AND PICOTEES : *C. M.* The Picotees are distinguished from Carnations by the colour being distributed solely on the margins of the petals, in "light" or narrow, or "heavy," that is, broad, edges, and the rest of the flower pure white. In the Carnation the colour may be "self," flaked, or bizarre, as the case may be.

GRAPES : *H. E.* We cannot make out the cause of your Muscats being in such a sad condition. At first sight it seemed like a case of scalding, but a closer examination did not confirm this view.

INSECTS : *Diss.* The little red-necked beetles which infest your Rhubarb in great numbers, and strip the common Dock in the hedges, not attacking any other plant, are the common Chrysomela (Phaedon) polygoni. It is very common on Polygonum avicularia. *J. O. W.*

KAINIT : *X.* This is a mixture of chloride and sulphate of potash, and is valuable where the soil is deficient in potash, and where, as in the case of Vines, that element is essential. Latterly, however, Mr. Jamieson has arrived at the conclusion that unless neutralised in some way the sulphuric acid of such manures as kainit is injurious to vegetation, as we know chlorine to be. But agricultural chemists differ, like the doctors, and while Mr. Jamieson's opinion as above cited tends to disparage sulphur, Mr. Lloyd considers it of high value, at any rate in the case of Hops. The safest plan is for the gardener or farmer to set apart a small portion of his ground for experimental purposes, and determine for himself what is most likely to suit his purpose.

NAMES OF PLANTS : *D. D.* 1, Carduus arvensis ; 2, Mentha arvensis ; 3, Polygonum Persicaria ; 4, Artemisia vulgaris ; 5, Stachys Betonica ; 6, Galeopsis Tetrahit.—*E. P. Dixon.* Trifolium alexandrinum.—*Clark Brothers & Co.* Hypericum pulchrum. — *J. S. & Co.* Spiræa sorbifolia.—*J. J. W.* 1, next week ; 2, Myriophyllum spicatum ; 3, Anacharis Alsinastrum ; 4, Potamogeton prolongus. — *C. J. J.* 1, Sonchus oleraceus ; 2, Hieracium, not recognised ; 3, Carduus lanceolatus ; 4, Polygonum aviculare ; 5, Clinopodium vulgare ; 6, Crepis virens. — *J. Earl.* Acer Negundo, Prunus Padus, Tradescantia virginica, and Stanhopea oculata. Please put numbers in future.—*H. Mason.* Euphorbia Lathyris (the Caper Spurge).—*D. M.* Lonicera Ledebourii.—*K. T.* 1, Rhus Cotinus ; 2, Selaginella Martensii ; 3, Adiantum decorum ; 4, Lastrea patens ; 5, Nephrolepis tuberosa ; 6, Adiantum formosum.—*G. T. D. P.* 1, Nephrodium molle ; 2, Microlepia Speluncæ, probably, but not fertile ; 3, Blechnum occidentale ; 4, Asplenium sp. ; 5, Doryopteris palmata ; 6, Nephrolepis davallioides furcans.

PALM ROOTS : *J. B. M.* They have a fleshy tap-root at first, which becomes of a more fibry character with age.

PEACHES : *J. C.* The utter insufficiency of the water supplied to the plants since March last is quite sufficient to account for their turning yellow, as yours have done. They are starving. Fork the borders over, mulch with horse-droppings, and give them a good soaking of clear water, following this up in a week with liquid manure and soot-water.

STRAWBERRIES : *J. Crombie.* They arrived in a condition which precluded all possibility of discovering their merits.

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*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CATALOGUES RECEIVED.

L. SPATH, Köpnickerstrasse, 154, Berlin — Hyacinths and other Bulbous and Tuberous-rooted Plants.

R. B. LAIRD & SONS, 17, Frederick Street, Edinburgh —Dutch Flowering Bulbs.

THOMAS METHVEN & SONS, 15, Princes Street, Edinburgh—Dutch Flower Roots.

COMMUNICATIONS RECEIVED :—J. T. B.—C. B. P.—J. C. & Co.—E. D.—E. J.—Messrs. Webb.—W. E. G.—Mr. Nolan. —Prof. Henriquez.—W. G. S.—M. J. B.—Mr. Rothschild. —W. F., Isle of Man (best thanks).—H. E.—D. & Co.— Messrs. Krelage.—G. N.—H. F. H., Hong Kong.—F. W. B.—P. L. S.—A. D. W.—G. A. B.—F. S. & Co.—W. H. L.

Markets.

COVENT GARDEN, July 24.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

THE bulk of the soft fruit is now reaching us, and with heavy supplies prices are lower. Crops generally in Kent have been good. Peaches in demand at slight advance. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	7 0	12 0	Lemons, per case	10 0	14 0
Currants, black, per ½-sieve	3 0	..	Melons, each	2 6	4 0
— red, ½-sieve	3 6	4 0	Pine-apples, Eng., lb.	2 0	3 0
Figs, per dozen	2 0	3 0	— St. Michael's, each	2 0	5 0
Grapes, per lb.	1 6	3 0	Strawberries, per lb.	0 4	1 0
			Peaches, per doz.	2 0	12 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	3 0	5 0	Horse Radish, bund.	3 0	4 0
Asparagus, English, per 100	4 0	8 0	Lettuces, Cabbage, per dozen	1 6	..
Aubergines, each	0 4	..	— Cos, each	0 2	..
Beans, French, p. 100	1 6	..	Marrows, each	0 6	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 6	..
Cabbages, per doz	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 8	..	Onions, per bunch	0 9	..
— New French, per bunch	1 3	..	— Spring, per bun.	0 6	..
Cauliflowers, English, dozen	2 0	3 0	Parsley, per bunch	0 9	..
Celery, per bundle	1 6	2 6	Peas, English, quart	1 6	..
Cucumbers, each	0 6	1 0	Radishes, per doz.	1 6	..
Endive, French, per dozen	2 0	..	Rhubarb, per bund.	0 4	0 6
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per strike	3 0	..
			Tomatos, per lb.	1 0	..
			Turnips, new, bun.	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming ; Kent kidneys, £6 to £8 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Fuchsias, per doz.	4 0	12 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Heliotrope, doz.	4 0	9 0
— (common), dozen	6 0	12 0	Hydrangea, per doz.	9 0	18 0
Begonias, per doz.	4 0	12 0	— paniculata, doz.	18 0	36 0
Calceolarias, per doz.	4 0	9 0	Lilium longiflorum, per dozen	24 0	36 0
Cockscombs, doz.	3 0	6 0	— lancifolium, doz.	9 0	18 0
Cyperus, per dozen	4 0	12 0	Marguerite Daisy, per dozen	8 0	18 0
Dracæna term. doz.	30 0	60 0	Mignonette, per doz	4 0	6 0
— viridis, per doz.	12 0	24 0	Myrtles, per doz.	6 0	12 0
Erica, various, doz.	12 0	48 0	Palms in var., each	2 6	21 0
Euonymus, various, per dozen	9 0	18 0	Pelargoniums (show) per dozen	6 0	18 0
Evergreens, in var., per doze	6 0	24 0	— scarlet, per doz	3 0	9 0
Ferns, in var., dozen	4 0	18 0	Petunias, per dozen	4 0	9 0
Ficus elastica, each	1 6	7 0	Rhodanthes, p. dozen	6 0	9 0
Foliage Plants, various, each	2 0	10 0	Spiræa, per dozen	8 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Mignonette, 12 bun.	1 6	6 0
Arum Lilies, 12 blms.	3 0	6 0	Pelargoniums, per 12 sprays	0 6	1 0
Bouvardias, per bun.	0 9	1 0	Pinks, various, 12 bunches	2 0	6 0
Calceolaria, 12 sprays	0 6	1 0	Primula, double, bun.	1 0	1 6
Carnations, 12 bun.	2 0	6 0	Pyrethurm, 12 bun.	2 0	6 0
Cornflower, 12 bun	2 0	4 0	Rhodanthes, 12 bun.	6 0	12 0
Eschscholtzia, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	4 0
Eucharis, per doz.	4 0	6 0	— (outdoor), 12 bun.	3 0	9 0
Forget-me-not, 12 bunches	2 0	6 0	— coloured, doz	2 0	0 0
Gardenias, 12 blms.	3 0	6 0	Stephanotis, 12 spr.	2 0	4 0
Gladiolus, various, 12 bunches	6 0	12 0	Stocks, 12 bunches	3 0	6 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Peas, 12 bun.	1 6	4 0
Lapageria, white, 12 blooms	3 0	6 0	Sweet Sultan, 12 bun.	2 0	6 0
— red, 12 blooms	1 0	3 0	Tropæolum, 12 bun.	1 6	3 0
Marguerites, 12 bun.	3 0	6 0	Tuberoses, per doz.	0 6	1 6
			White Jasmine, bun.	0 6	1 0

SEEDS.

LONDON : *July* 23.—There was very little doing on the seed market to-day. Rather more money is asked for new Trifolium. But little attention is devoted to Trefoil Cosh. The new Rape seed is in fair request, and shows good quality. White Mustard sells on former terms. The coming crop of red Clover seed is not well spoken of. The sale for Canary and Hemp seed is confined to narrow limits. Feeding Linseed is firmer. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday there was but little inquiry for any kind of grain. English Wheat was in small supply, and the best samples supported the rates of Monday week : these only engaged attention. For foreign Wheats the tendencies were hardly as good as on the Friday previous, though on the week prices showed in some instances 6*d.* advance for white Wheats. Flour was dull at late value. Barley was the turn in favour of the buyer, and a very slow sale. Smyrna Beans were 1*s.* lower, Peas unaltered, Maize firmly held, and 3*d.* dearer ; Oats opened with a moderate demand, but on the day's business the commoner qualities were rather easier.—On Wednesday the small supply of English Wheat was held for Monday's rates ; foreign met a very limited sale without quotable alteration. Barley was dull of sale, Beans and Peas steady at late rates, and for Oats prices were in favour of buyers. Maize was firm but quiet.—Average prices of corn for the week ending July 19 :—Wheat, 37*s.* 1*d.* ; Barley, 28*s.* 9*d.* Oats, 22*s.* 11*d.* For the corresponding period last year : —Wheat, 42*s.* 2*d.* ; Barley, 27*s.* 10*d.* ; Oats, 23*s.* 2*d.*

CATTLE.

At Copenhagen Fields on Monday a good collection of cattle, as regards quality, met a very slack demand. Last Monday's prices were hardly obtainable, even for first quality. There was a good supply of sheep and lambs, and a slow sale of both. Sheep supported the previous Monday's value, but not without difficulty. Lambs in many cases sold for less money. The calf trade was dull. Quotations :—Beasts, 4*s.* to 5*s.* 2*d.*, and 5*s.* 4*d.* to 5*s.* 8*d.* ; calves, 4*s.* 8*d.* to 5*s.* 10*d.* ; sheep, 5*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.* 2*d.* ; lambs, 6*s.* 4*d.* to 7*s.* 4*d.* Thursday's trade was quiet. Beasts sold slowly and were rather weak. Sheep and lambs were dull, with a lower tendency ; calves and pigs being quiet.

HAY.

Tuesday's Whitechapel Market report states that trade was very dull, supplies large, and the quotations as follows :—Prime Clover, 95*s.* to 115*s.* ; inferior, 60*s.* to 75*s.* ; prime second cut, 90*s.* to 114*s.* ; best meadow hay, 80*s.* to 96*s.* ; inferior, 40*s.* to 65*s.* ; and straw, 28*s.* to 40*s.* per load. On Thursday there was a moderate supply, and trade was quiet at the above rates.—The Cumberland Market report states that trade was the same as last reported, at the following quotations :— Clover, prime old, 100*s.* to 110*s.* ; second quality, 80*s.* to 95*s.* ; inferior, 60*s.* to 70*s.* ; best meadow hay, old, 80*s.* to 95*s.* ; inferior, 60*s.* to 75*s.* ; new, 50*s.* to 84*s.* ; and straw, 30*s.* to 38*s.* per load.

POTATOS.

The following are the average prices recorded during the week :—Kidneys, 120*s.* to 140*s.* ; rounds, 100*s.* to 120*s.* ; Early Rose, 100*s.* to 140*s.* ; Cherbourg, 130*s.* per ton.—The imports into London last week were 10 baskets 57 casks from Boulogne, 1350 cases 820 boxes from Cherbourg, 2175 packages from Jersey, and 21 packages from Lisbon.

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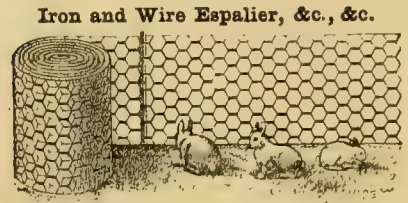
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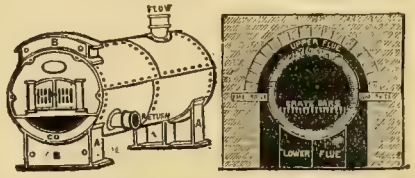


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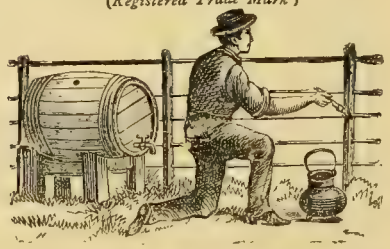


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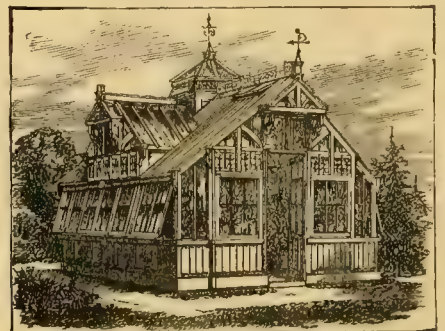
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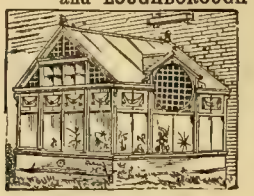
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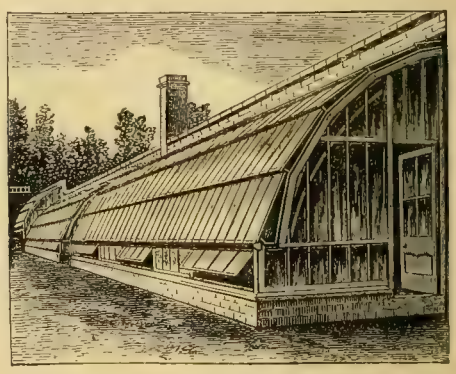
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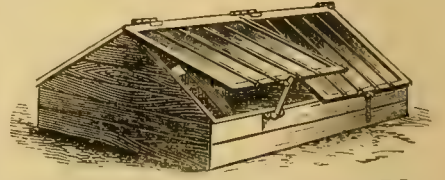


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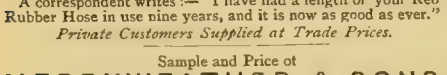
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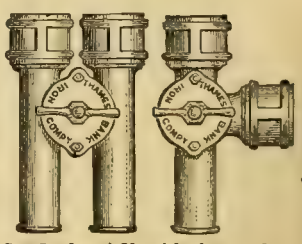
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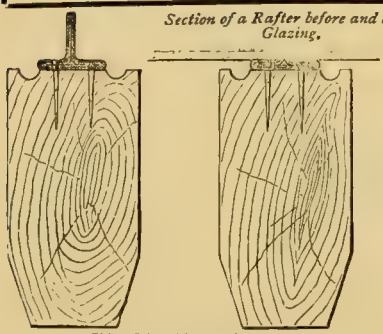
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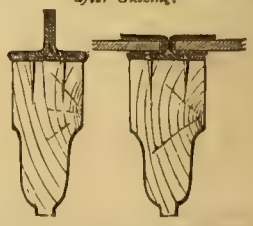
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, July 26, 1884.
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 553.—Vol. XXII. {New Series.} SATURDAY, AUGUST 2, 1884. {Registered at the General Post-office as a Newspaper.} Price 6d. {Post-free, 6½d.}

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NOTICE.

THE

GARDENERS' CHRONICLE

for NEXT SATURDAY, August 9,

will contain a Special Report of the Great Show of the Liverpool Horticultural Association, to be held in Sefton Park, August 2 and 4, and of the Exhibition of the Royal Horticultural Society of Southampton, to be held in Westwood Park, August 2 and 4.

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ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.
NATIONAL CARNATION and PICOTEE SOCIETY'S EXHIBITION, in the Town Hall, Manchester, on TUESDAY, the 12th inst. Exhibitors of other Plants and Flowers can obtain information from the undersigned.
Royal Botanic Gardens, Manchester. BRUCE FINDLAY.

MAIDENHEAD HORTICULTURAL SOCIETY.
The ANNUAL SHOW of FLOWERS, FRUITS, and VEGETABLES will be held in Kidwells Park on THURSDAY, August 14. By kind permission of Col. F. Burnaby, the Band of the Royal Horse Guards, under the direction of Mr. C. Godfrey, will perform until 7 P.M. About 200 Prizes, from 60s. downwards, will be offered; and 100 Prizes for Cottagers' Produce (no Entrance Fees in this Class) Entries close August 7, except for Cottagers, who can enter up to August 9. Admission, Non-subscribers, 2s. 6d. from 1 until half-past 3 o'Clock; and 1s. from half-past 3 until 6 o'Clock; after 6 o'Clock, 6d. Tickets may be had of Mr. DURRANT, Treasurer; and Mr. BURNHAM, the Library. Schedules and Rules may be had of
Ray Park Cottage, Maidenhead. Mr. O. KING, Sec.

WARWICKSHIRE AGRICULTURAL SOCIETY.
A GRAND HORTICULTURAL EXHIBITION will be held on the Show Ground at Stratford-on-Avon, on TUESDAY and WEDNESDAY, September 2 and 3. Open to all England. Entries close Monday, August 18. Schedule of Premiums, Forms of Entry, and all information can be had from
Mr. A. M. COX, Local Secretary,
Stratford-on-Avon.

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.
The FIRST EXHIBITION will be held in the Town Hall, Huddersfield, on FRIDAY and SATURDAY, November 14 and 15. Schedules and Entry Forms are now ready, and may be had on application to
Marsh, Huddersfield. Mr. JOHN BELL, Hon. Sec.

1885. GRAND FLORAL FÊTE, YORK, JUNE 17, 18, and 19. Schedules ready early in January next.
JOHN WILSON, Secretary.

For Present Sowing.
SUTTON'S FLORISTS' FLOWER SEEDS, post-free.

SUTTON'S CALCEOLARIA. THE BEST.
"Some plants from your Calceolaria seed took first prize here last week. I never saw anything to equal them."—Sir A. RAMSAY, *May 22*, 1884.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S CINERARIA. THE BEST.
"We have a most splendid display of Cinerarias from your strain; as many as 345 blooms on one plant, some 2¼ inches across, and all perfect in shape."—Mr. J. WATTON, *March 20*, 1884. Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S PRIMULA. THE BEST.
"The strain of Primula you sent me is the best I have ever seen."—Mr. S. PEARCE, *December 13*, 1883.
Price, 2s. 6d., 3s. 6d., and 5s. per Packet, post-free.

SUTTON'S BEGONIA. THE BEST.
"Your prize Begonia was superb."—Mr. G. COOPER.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON'S GLOXINIA. THE BEST.
"The Gloxinia seed germinated finely, and I never had such magnificent flowers."—Mr. JNO. MARSHALL.
Price, 2s. 6d. and 5s. per Packet, post-free.

SUTTON AND SONS,
THE QUEEN'S SEEDSMEN,
READING, BERKS.

NEW AUTUMN TRADE LIST of BULBS, including Narcissus, Lilies, Snowdrops, Chionodoxa Luciliæ, Freesias, Lily of the Valley, and a large Collection of Miscellaneous Bulbs and Tubers, is now ready, free on application to
THOS. S. WARE, Hale Farm Nursery, Tottenham, London.

PRIMULAS. — PRIMULAS. — CINERARIAS.—Nice Plants, ready for potting, of the finest Covent Garden strains, 1s 6d. per dozen, 10s. per 100. Twelfth year of distribution.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

ROSES in Pots.—All the best New (1884) and Old English and Foreign sorts, from 18s. to 36s. per dozen. These world-famed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.
RICHARD SMITH AND CO., Worcester.

TEA ROSES.—Fine plants, in 48's, price 45s. per 100. BOUVARDIAS, bushy, in 48's, including A. Neuner and President Garfield, &c., 40s. per 100.
W. JACKSON, Blakedown, near Kidderminster.

Strawberry Plants (Runners)
H. ORMSBY can now supply the above in strong plants. All the best Market, Kent, varieties in any quantity. Price on application.
Swanley, Kent.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy, and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Strong Roots, 4s. per 100. Plants, in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Strawberries.
OUR DESCRIPTIVE CATALOGUE of the most approved varieties is now ready, and will be sent post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

To Nurserymen, Private Growers, &c.
A. CATTANEO, COMMISSION SALESMAN, 44, Hart Street, and New Flower Market, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantities. Terms on application.

WISE AND RIDES, FRUIT and FLOWER SALESMEN, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.
BASKETS, BOXES, LABELS, and Directions for Packing forwarded upon application.

LAPAGERIA ALBA for SALE.—An extra large Specimen Plant, in robust health, making strong vigorous growths, 6 to 7 feet long—in a tub. Has 50 strong growths from the root. If planted out would cover a very large roof. Price on application to
T. C. ANDERSON, The Gardens, Milner Field, Bingley, Yorks.

OUR TRADE LISTS, Nos 68 and 69, just issued, contain all the North American Lilies, Rare Bulbs and Plants, Calochorti, Fritillarias, Heuchera micrantha, &c., Ferns and Cypripedia, to be delivered next autumn, to order, at unprecedentedly low prices; also Lilium auratum, Japanese Bulbs, Maples, Iris, Narcissi, to be delivered in same way. To ensure certain delivery, please order at once.
NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

FOR SALE, 22 large bushy GARDENIA PLANTS, also some EUCHARIS. No mealy-bug on the place.—W. G. HAZELL, The Vineries, Nightingale Road, Wood Green, Middlesex, N.

PRIMULA CASHMIRIANA.
For Young Plants, write to
F. H. DAMMANN, Görlitz, Germany.

F. HEINEMANN, Gardener to the Trade, Ballenstadt, Germany.
SEED GROWING A SPECIALITY.
PHLOX DRUMMONDII NANA COMPACTA, in 15 varieties, including two novelties, choice, of 1883
VERBENA, HYBRIDA GRANDIFLORA, assorted.

NARCISSUS POETICUS (Pheasant-eyed), 8s per bushel, 5s. per half bushel, 3s. per peck. Free on rail for cash.—R. FAKRANCE, Chadwell Heath, Essex.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant.
CATALOGUES gratis and post-free of
KELWAY AND SON, Langport.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., BULB GROWERS, Hillegom, near Haarlem, Holland.
Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

AUSTRALIAN FERN TREES (BALANTIUM ANTARCTICUM)
Orders for next spring will be promptly attended to.
Price, 10s. per foot under 5 feet high, 12s. 6d. per foot over 5 feet high, free to London.
They are the same as at the Crystal Palace Shows.
WM. T. SCHOENING, G.P.O., Melbourne, Australia.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free, on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Daffodil, Daffodilly, Daffodowndillies.
A DESCRIPTIVE CATALOGUE of more than 200 sorts of DAFFODILS free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

STEPHANOTIS, for Sale, in Tub, covering over 100 square feet of roof—free flowering variety.
W. NICOLL, Lower Merton, Surrey.

FOR SALE, 24 fine Specimen AZALEAS, 2 to 5 feet high, in fine health and well set. For particulars apply to
IRELAND AND THOMSON, 20, Waterloo Place, Edinburgh.

To Gardeners and Others.
CHOICE FRUIT TREES in Pots, for Sale, comprising 20 PEACH, 6 NECTARINE, and 7 FIG. Healthy and in full bearing. Must be sold; no reasonable offer refused. Apply to
Mr. JOHN LEES, Auctioneer, Reigate.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

EUGÈNE VERVAET DE VOS, Indian Azalea Nursery, Swynærde, near Ghent, Belgium, is now issuing his English Autumn CATALOGUE, which will be forwarded free on application—
Offering 120,000 INDIAN AZALEAS, 80,000 AZALEA MOLLIS, many thousand STOVE and other GREENHOUSE PLANTS—all of the Growers' Culture and at the Growers' Prices.
An inspection is respectfully solicited.

INDIAN LILIES.—Flowering Bulbs of L. neilgherrense, 1s. 6d. each; L. Wallichianum, 2s. 6d. and 3s. 6d. each; L. polyphyllum, 2s. 6d. and 3s. 6d. each.
The usual allowance to the Trade. All Orders for 25s. carriage paid to London. Remittance through post office to accompany orders. Bulbs ready to lift in November and December.
FRANK GRIFFITH, Kotagiri, Nilgiris, India.

SALES BY AUCTION.

Wednesday Next—(Sale No. 6698.)
CATTLEYA SKINNERI, gigantic plant.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 6, an enormous specimen of CATTLEYA SKINNERI, being one of the largest ever brought to this country, measuring no less than 20 feet in circumference, and about 7 feet across. It was seen in flower by Collector, who describes it as a fine dark variety, and dried flowers will be on view at time of Sale; also two plants of LYCASTE SKINNERI ALBA, found by Collector in flower, and brought over under his especial charge in a semi-established condition; 100 plants of CATTLEYA DOWIANA, and a quantity of LÆLIA PURPURATA, and other BRAZILIAN ORCHIDS.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6698.)
BURMESE ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 6, at half-past 12 o'Clock precisely, a quantity of Inported Plants of DENDROBIUM TORTILE, D. FORMOSUM GIGANTEUM (true), D. EBURNEUM. D. DALHOUSIANUM, D. VEITCHIANUM, D. ALBO SANGUINEUM; PLEIONE REICHENBACHIANA, CŒLOGYNE SCHILLERIANA, SACCOLABIUM GUTTATUM, S. CURVIFOLIUM. S. AMPULLACEUM MOULMEINENSE; AERIDES LOBBII, A. AFFINE ROSEUM, &c.

On view morning of Sale, and Catalogues had.

Lælliopsis Domingensis.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 6, at half-past 12 o'Clock precisely, twelve good plants of the handsome LÆLIOPSIS DOMINGENSIS. This Orchid is extremely rare, only a few plants are known to exist.

On view the morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6699.)
IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Shuttleworth, Carder & Co., on THURSDAY NEXT, August 7, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA MENDELI, C. GIGAS, C. CITRINA; CHYSIS AUREA, LÆLIA ANCEPS, EPIDENDRUM VITELLINUM MAJUS, PINGUICULA CAUDATA, ODONTOGLOSSUM CRISPUM (Alexandræ), all in the finest condition, and unusually fine masses; MASDEVALLIA RACEMOSA (Crossii), Established Plants, &c.

On view morning of Sale, and Catalogues had.

Dutch Bulbs—Trade Sale.

MR. J. C. STEVENS begs to announce that his FIRST SALE of DUTCH BULBS for this season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 13, at half-past 12 o'Clock precisely, and will comprise 800 lots of valuable Bulbs from well-known Farms in Holland, lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, August 13. Gentlemen desirous of entering plants for this Sale will please send particulars of same not later than Thursday next, August 7.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Cypripedium niveum, grand spotted variety.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY, August 14, at half-past 12 o'Clock precisely, a splendid importation of a beautiful spotted form of CYPRIPEDIUM NIVEUM. This variety has been sent home as Sadfroyanum, but cannot be warranted; every plant, however, was seen by Collector in flower, and is like drawing, sepals, petals, and lip being densely covered with spots. Also a lot of a beautiful white variety of NIVEUM, flowers very large and bold.

On view morning of Sale, and Catalogues had.

Peterborough House, Fulham, S.W.

MR. J. C. STEVENS has received instructions from the Executor of the late W. Terry, Esq., to offer for SALE by AUCTION, on the Premises as above, on FRIDAY, August 15, at half-past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS, comprising a fine plant of Cattleya gigas, with 4 leads; Angulos Ruckeri, Angræcum sesquipedale, with 5 leads; Aerides larpentæ, Dendrobium Hillii, Vanda teres, Lælia superbiens, Miltonia spectabilis, Odontoglossum bictonense, &c.; also a small COLLECTION of STOVE and GREENHOUSE PLANTS, including a nice specimen of Tabernæmontana camassa, large plant of Stephanotis floribunda, Crotons of sorts, Pancratiums, &c.

May be viewed day prior and morning of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Horticultural Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Stamford Hill, N.—Thursday Next.

HIGHLY IMPORTANT SALE of PLANTS, GREENHOUSES, 12 valuable HORSES, COWS, IRON FENCING, &c., by order of J. S. Bockett, Esq., who is removing in consequence of the Estate being at once required for Building Purposes.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, on the Premises, The Hall, Stamford Hill, N. (between Stoke Newington and Stamford Hill Stations), on THURSDAY NEXT, August 7, at 12 o'Clock precisely, in consequence of the large number of lots, the whole of the well grown STOVE and GREENHOUSE PLANTS, specimen Azaleas and Camellias, Orchids in variety, the erections of 5 GREENHOUSES, Slate STAGING, BRICKWORK, 2000 feet of 4-inch Hot-water PIPING, FRAMES, POTS, 3 Milch COWS, 12 valuable HORSES (the whole of which are the property of Mr. Bockett, and are well known in the neighbourhood), 60 Head POULTRY, 20 Store PIGS, 2000 feet of Iron FENCING, and numerous effects.

On view morning of Sale. Catalogues may be had of Mr. H. EBBAGE, the Gardener on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.
AERIDES SANDERIANUM, Rchb.f.
Grand Novelty.

Professor REICHENBACH writes:—"This is, no doubt, a grand Aerides, just imported by Mr. F. Sander, who knew it half a year since, from sketches in water-colours, sent, I believe, from Eastern Tropical Asia, where it lurks in an obscure valley, not much trodden, as it would appear, by Europeans. The plant at hand is very vigorous, and its features are short and broad leaves, with two retuse lobes at end. The inflorescences are very numerous and long, and very florid in the plant before me, and the flowers match any flowers of the odoratum section in extent. A sketch shows sepals and petals white with purple ends. The great lip is represented yellow, with green end of spur, and a remarkably fine purple mid-lacinia. By this, as well as the long spur and the equal, not pandurate mid-lacinia, it is distinct from the much similar grand Aerides Lawrenceæ. It is named after Mr. Sander, who has been very lucky in importing curious and rich Aerides."

AERIDES SANDERIANUM produces flowers fully as large as Lawrenceæ, from which it varies by the lip being yellow and longer. It is one of the very finest novelties we have had the pleasure to introduce. The importation is in superb order, it is very rare, and every plant is offered.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL the above extra fine lot on FRIDAY NEXT, August 8, at half-past 12 o'Clock precisely, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. Also superb importations of ODONTOGLOSSUMS, CATTLEYAS, &c.

On view morning of Sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Dutch Bulbs.—Special Trade Sales.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have now fixed their SALES of DUTCH FLOWER ROOTS for the coming season. The FIRST AUCTION will take place on MONDAY, August 18. This and the three following Sales will consist of lots specially to suit the Trade and other extensive Buyers, and arrangements have been made for the supply of Roots of the best quality.

Catalogues will be sent regularly on application.

Valuable Freehold Residences, Nursery, and Building Land in Maghull, Lancashire.

MR. W. G. IDLE will SELL by AUCTION, at the "GREAT MOGUL INN," MAGHULL, on TUESDAY, August 19, at half-past 6 o'Clock in the Evening prompt, subject to conditions of sale, all that FREEHOLD ESTATE, situate in Maghull, in the County of Lancaster, nearly opposite Mr. Cookson's, and fronting the Liverpool and Preston turnpike-road, consisting of two large SEMI-DETACHED MESSUAGES or DWELLING-HOUSES, with Shrubberies and Gardens to the front thereof, approached from the road by convenient carriage drives, and with the usual outbuildings thereto. Also a large PLOT of LAND appertaining and adjoining to the left-hand side house, and nearest to Maghull Station, laid out as a NURSERY, with the Greenhouse, Cucumber-house, Frames, and other Buildings thereon erected, and having a south wall 465 feet 6 inches in extent, together with an extensive Vegetable and Fruit Garden behind, and appertaining to the other residence, and together also with a CROFT or PARCEL of LAND adjoining the last mentioned residence. The whole property has a frontage to the said turnpike-road of 828 feet, and contains in the whole 4a. 2r. 5p. 17¾ yds., statute measure, or thereabouts.

The MESSUAGE on the right-hand or Liverpool side, with the Vegetable and Fruit Garden behind the same, and the said Croft or Parcel of Land, are in the tenancy of Mr. Charles Parr, the other Messuage first described in that of Mr. Goodman, and the said Nursery, Hothouses, &c., are in the occupation of Mr. J. D. Ellison.

The HOTHOUSES consist of a span-roofed Vinery and Plant-house, 240 feet long by 20 feet wide, in eight sections, separately heated; a span-roofed Cucumber-house, 240 feet long by 10 feet wide, in two sections, separately heated; also Frames 100 feet long, also heated; with a Water Tank, Storehouse, and Potting Sheds. The heating is performed by two large Trentham Boilers.

If not sold as an entirety, the property will be offered for sale in the following lots:—

LOT 1.—The MESSUAGE or DWELLING-HOUSE on the left-hand side and nearest to Maghull Station, with the Nursery, Hothouses, and other Appurtenances as above mentioned. This lot has a frontage of 334 feet, and contains 2a. 2r. 4p. 6yds. in the whole.

LOT 2.—The MESSUAGE or DWELLING-HOUSE on the right-hand or Liverpool side, with the large Vegetable and Fruit Garden, and a portion of the Croft added as marked out. Frontage 104 feet. Total contents, 3r. 9p. 24yds.

LOT 3.—The remainder or greater portion of the CROFT as marked out, containing 1a. 0r. 31p. 18yds. in the whole, and having a frontage of 390 feet. This lot is exceedingly adapted for building purposes.

This estate is a quarter of an hour's walk from Maghull Station, on the Lancashire and Yorkshire Railway, and half a mile distant from the new station on the Southport and Cheshire Lines Extension Railway, which opens up a direct communication with Southport, and a thorough communication with Manchester. A plan may be inspected at the Solicitors' Offices.

For further particulars apply to the Auctioneer, at his Offices, Derby Street, Ormskirk; or to BRIGHOUSE, BRIGHOUSE AND JONES, Solicitors, Ormskirk and Southport.

Somerset.

To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD, by Private Contract, with early possession, the Old-established BUSINESS (of over 150 years and only changed hands three times) of a NURSERYMAN, SEEDSMAN, and FLORIST, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Princes Street, Yeovil.

The Merriott Nurseries comprise 27 acres of excellent Land, completely stocked with splendid young, valuable, and saleable Fruit; Coniferous, Forest, and Ornamental Trees and Shrubs; and well stocked Greenhouses, &c.

The Residence, Offices, Stabling, Manager's Villa, and Cottages, and a portion of the Nursery Grounds, are the proprietor's Freehold, and may be Purchased or taken on Lease.

The small Hendford Nursery is well stocked, and is provided with newly erected and conveniently-fitted Greenhouses, and other Erections adapted for the business. These Premises may also be Purchased or taken on Lease.

The age and state of health of the Proprietor alone induce him to retire, and he will be prepared to Sell on advantageous terms.

The Yeovil Branch Business could be taken separately if so desired, or the whole affair in its entirety, which would in the latter case afford an excellent opportunity for Partnership.

For further particulars and cards to view, apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or, to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.—June, 1884.

Sunbury, Middlesex.

IMPORTANT and DESIRABLE PROPERTY. A rare opportunity. Must be sold to Close the Estate.

FOR SALE, the valuable FREEHOLD ESTATE known as Osborn's Nursery, comprising 17 Acres of Land, which for the Growth of Fruit Trees, Roses, and General Nursery Stock is unsurpassed. There are also several recently built Glass Erections, with Packing and Potting-sheds, &c., which cost about £3000 to put up.

The whole of the commanding and extensive frontage to the road could be easily utilised for building without detriment to the other portion for Nursery purposes.

Full particulars of the above may be obtained, and offers made, through Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.

TO BE DISPOSED OF, a NURSERY, SEED, and CUT FLOWER BUSINESS, doing a first-class trade in one of the best manufacturing districts in the North of England, consisting of Pinery, 3 large Vineries, 2 Peach-houses, and the following houses, all separate:—Camellia and Lapageria, Eucharis, Melon, Rose, and Show; with Seedshop, Pits and Frames, Stable, Packing Sheds, and a good Dwelling-house, all well fitted up, in good repair, and first-class working order, well stocked with Plants. All freehold property, standing on an acre of ground. Satisfactory reason given for owners' selling. For particulars apply to

HURST AND SON, 152, Houndsditch, London, E.

NURSERY (Old-Established), about 6 miles from Covent Garden, comprising well-built 10-roomed House, 4 Acres of Land, 6 Span-roof Greenhouses, well heated with hot water, for growing Cucumbers and choice Cut Flowers. The whole held for 73 years at the low Ground Rent of £35 per annum. Good water supply indoors and out. The Trade is wholesale, but there is an excellent opportunity of adding the Retail and Jobbing Trade.

Apply to S. MUGGERIDGE, Land Agent, 8, Duke Street Adelphi, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

SCOTTISH SEED AND NURSERY TRADE ASSOCIATION.

PRIZE ESSAYS.—This Association offers a First Prize of Seven Guineas, and a Second Prize of Three Guineas, for an Essay on "The best and most economical system for the afforestation of waste and otherwise unprofitable lands in the United Kingdom."

Further particulars may be had from the Secretary, Mr. DAVID HUNTER, S.S.C., 29, Dundas Street, Edinburgh, with whom the Essays must be lodged on or before Dec. 1 next.

ADIANTUM CUNEATUM, BOUVARDIAS DAZZLER, QUEEN of ROSES, and LONGIFLORA FLAMMEA, all very strong, in thumbs, 20s. per 100 for cash. Also MAR CHAL NIEL ROSES, strong well furnished plants, in 6-inch pots, 3s. 6d. each, 36s. per dozen.

ROBERTS BROS. AND ARNOLD, East Grinstead.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE (No. 374A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1884 and 1885, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out for this speciality. The collections of every description of the establishment are in the most desirable excellent condition.

The Earliest and Best Strawberries in the World!

LAXTON'S "KING of the EARLIES"—the earliest; and THE CAPTAIN, a true large Perpetual.

Growers who desire to secure Early Runners or even Plants at all, should apply at once for particulars, as the stocks are being taken up for Market purposes. Coloured Plate 6d.

T. LAXTON, Seed Grower, Bedford.

NARCISSUS INCOMPARABILIS GIGANTEUS, "SIR WATKIN."

A splendid new variety, eclipsing all others. Received First-class Certificate from the Royal Horticultural Society, under name of "James Dickson." Price 3s. 6d. each, 36s. per dozen, 250s. per 100. Coloured Plate free to intending purchasers. For full particulars see large Advertisement in *Gardeners' Chronicle* of July 5.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester.

THE EXECUTORS of the late B. MALLER beg to offer to the Trade a very extensive and extra well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMENS, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GREVILLEAS, VINES (in pots), &c. An inspection is invited. Trade CATALOGUE forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 16.

Burnt Ash Lane Nurseries, Lee.

OFFERED FOR EARLY ORDERS:—HELLEBORUS NIGER, fine strong Plants, 52s. per 1000. Strong Tubers of CYCLAMEN EUROPÆUM, 48s. per 1000; Smaller Tubers, 28s. per 1000. NARCISSUS POETICUS, 28s. per 1000. LILIUM MARTAGON, 60s. per 1000. CYPRIPEDIUM CALCEOLUS, 160s. per 1000. VERATRUM ALBUM, 90s. per 1000. Seed of HELLEBORUS NIGER, 24s. per kilogramme. A sample of the most popular and beautiful Alpine Plants, together with packing, and properly addressed, from

CHRISTOF STEINPOCK, Altlengbach, Lower Austria.

EAST LOTHIAN STOCKS.

THOMAS METHVEN AND SONS offer their choice strain of the above Intermediate Stocks in five colours, Scarlet, Purple, White, Crimson, and Snow-white, wall-leaved, in packets, 1s., 2s. 6d., and 5s. each colour. Price to the Trade on application.
15, Princes Street, Edinburgh.

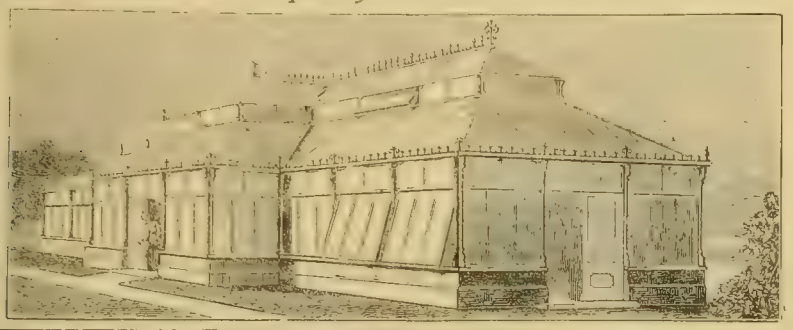
ALEXIS DALLIERE'S Nursery, Ghent, Belgium.
Great Culture of AZALEA INDICA, AZALEA MOLLIS, CAMELLIAS and RHODENDRONS in Bud. Nurserymen requiring these Plants by hundreds or in larger quantities, are requested to send their orders as early as possible. A. D. will not be able to guarantee the execution of late orders.
Immense numbers of the following Palms, &c., are also cultivated in this establishment, viz., Areca lutescens, Latania borbonica, Phœnix reclinata, Phœnix tenuis, Seaforthia elegans, Ptychosperma Alexandræ, Aspidistra fol. var., Dracæna terminalis, Dracæna indivisa, Spiræa japonica, Crotons, Ficus, Bromeliads, Ferns, Orchids, &c.
Prices and dimensions sent on application, as also the General CATALOGUE of the Establishment.

MESSRS. GREGORY AND EVANS beg to call the attention of the Trade to their first of Annual Sales of ERICAS, of all the leading varieties for winter and spring blooming; also large quantities of SOLANUM and CYTISSUS, which will be offered early in September, of which due notice will be given. Inspection invited.
Longlands Nursery, Sidcup, Kent.

MR. CHARLES AYRES,
Cape Seedsman and Florist,
CAPE TOWN, CAPE OF GOOD HOPE,
has now issued a
REVISED AND COMPREHENSIVE PRICE LIST OF CAPE BULBS AND EVERLASTING FLOWERS,
which may be had post-free on application to his London Agent,
Mr. J. CRANMER, 27, Clements Lane, London, E.C.,
to whom all Orders for the New Crop should be sent as early as possible.

BOULTON & PAUL, NORWICH.

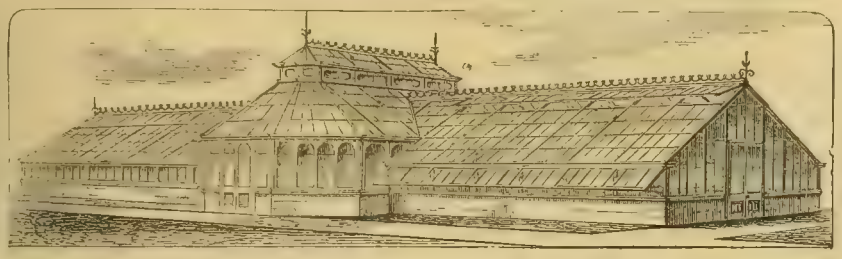
Our GREENHOUSES are erected in every part of the Kingdom.
BEST DESIGNS. First-quality Materials. CHEAPEST PRICES.



CHEAPEST BUILDERS of GREENHOUSES in the Kingdom. Send for Estimates.

CATALOGUES and LISTS post-free on application.

Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

R. HALLIDAY & CO.,

HOTHOUSE BUILDERS AND HOT-WATER ENGINEERS,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. **Hot-water Heating Apparatus,** with really reliable Boilers, erected, and success guaranteed in all cases. **Melon Frames, Sashes, Hotbed Boxes, &c.,** always in stock.
Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—
MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

HORTICULTURAL STRUCTURES of EVERY DESCRIPTION, in EITHER WOOD or IRON, or BOTH COMBINED.
WOODEN CHAPELS, SHOOTING LODGES, COTTAGES, TENNIS COURTS, VERANDAHS, &c.

Orders for shipment carefully fitted and packed, and delivered f.o.b. Glasgow.
Illustrated Circulars post-free. Complete Catalogue, 3s.



CONTRACTORS to HER MAJESTY'S BOARD of WORKS, LONDON and DUBLIN.

HOT-WATER APPARATUS for WARMING CHURCHES, SCHOOLS, PUBLIC BUILDINGS, MANSIONS, HARNESS ROOMS, DRYING ROOMS, HOTHOUSES and BUILDINGS of EVERY DESCRIPTION.

BULBS FOR EARLY FORCING.

SUTTON & SONS

having just received, in fine condition, their first consignment of

Roman Hyacinths and Early Narcissus,

are prepared to execute Orders at the following prices :—

	Per doz.	Per 100.
Single White Roman Hyacinths	3s.	21s.
Paper White Narcissus	1s. 9d.	12s. 6d.

THE QUEEN'S SEEDSMEN, READING.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH,** 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, best quality, as supplied to the principal Nurserymen and Nobility, 1s. per Bag; 15 Bags, 14s.; 30 bags, 25s., sent to all parts; Truckload, 25s., free to rail. Best LOAM and PEAT. A. FOULON, 32, St. Mary Axe, London, E.C.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag. SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons. WALKER AND CO., Farnborough Station, Hants.

THE HORTICULTURAL SUPPLY ASSOCIATION is the cheapest and best House in the Trade for really good LIGHT FIBROUS PEAT. Having purchased 2000 tons of the very best quality, the Association is prepared to make special offers to the Trade, for quantities by the Yard or Ton in truckloads. Terms on application. In sample bags, 4s. 6d. per bag. Very best, selected for Orchids, 6s. per bag; twenty bags for 5s. per bag. BLACK FIBROUS PEAT, 4s. per bag; five bags for 17s. 6d.
Also the best and cheapest house for LOAM, SAND (coarse and fine), LEAF MOULD, COCOA FIBRE, MATS, RAFFIA, CORK, GUANO (Real Peruvian), STICKS, LABELS, BOUQUET WIRE, and every GARDEN REQUISITE.
FIBRE, 3d. per bushel; per truck of 2 tons, 35s. The best coarse SILVER SAND, 1s. 6d. per bushel; 12s. 6d. per ½ ton; 22s. per ton.
BEST YELLOW BETCHWORTH LOAM, 1s. per bushel.
LEAF MOULD, 1s. 6d. per bushel.
PEAT MOULD, 1s. per bushel.
COMPOST for Potting or for Garden, 1s. per bushel.
SPHAGNUM MOSS, 7s. 6d. per bag.
Our speciality TOBACCO CLOTH and PAPER.
Universal MANURE. The best yet offered—a very powerful Fertiliser, 13s. per cwt.
PERUVIAN GUANO, as imported, 18s. per cwt.; 56 lb., 11s.; 7 lb., 2s. 6d. All bags 4d. each.
Terms, Cash with Order, or Trade reference.
The HORTICULTURAL SUPPLY ASSOCIATION, Station Road, Elephant and Castle, S.E.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1s. 3d. per sack; 10 for 12s., 15 for 17s., 30 for 30s.; all sacks included. Trucks (loose), 33s. Selected Brown Fibrous Peat, 5s. per sack; 5 for 22s. 6d. Black Fibrous Peat, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. Coarse Silver Sand, 1s. 6d. per bushel, 25s. per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1s. per bushel. Chemical MANURES. Fresh Sphagnum, 6s. per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8d. per lb.; Specialité Paper, imported solely by us, 10d. per lb., 28 lb. 21s. Shading materials of all kinds. Write for Price LIST. — W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.

BEESON'S MANURE.

This is the Manure now used by the leading Nurserymen and Rose Growers. **Price, 12s. per cwt.,** carriage paid for Cash. In Sealed Bags, thoroughly air-tight. Also in 1s. Tins; per Parcels Post, 1s. 6d. It will keep for any length of time, and is the best Manure for all purposes in the Flower, Fruit, or Kitchen Garden. References, Directions for Use, &c., on application to

W. H. Beeson, Carbrook Bone Mills, Sheffield.

THE BEST WINTER LETTUCE,



COOLING'S LEVIATHAN COS.

The hardiest, largest, and broadest leaved variety in cultivation, a decided improvement on the Bath Cos.

Per Packet 1s., post-free.

From Mr. H. W. WARD, *Head Gardener to* The Right Hon. the Earl of Radnor :—"I have no hesitation in pronouncing it to be the finest Winter and Spring Lettuce that I am acquainted with."

From Mr. J. HORSEFIELD, *Head Gardener to* The Right Hon. Lord Heytesbury :—"Your New Lettuce in my opinion is a decided improvement on the original Bath Cos."

GEO. COOLING & SON, SEEDSMEN BATH.

Notice.

To Nurserymen, Seedsmen, and Florists.—Established 1836.

LEWIS ISAACS, IMPORTER OF DUTCH BULBS, 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., begs to inform his Customers and the Trade in general that he has again arrived from Haarlem, in Holland, with his annual well selected stock of Bulbs. As an advantage to the Trade only, he begs to offer his named HYACINTHS, good picked Bulbs, all true to name and colour, at an all-round price of 3*d*. per Bulb, in any quantity from half a dozen of a sort and upwards. The stock is on view to intending purchasers, at the above address, which is only 3 minutes' walk from Aldgate Station.

Orders punctually attended to on the same day.

Catalogues post-free on application.

FOR SALE.

SPECIAL OFFER.

FERNS, Seedling, in 60's, clean and good colour, ready for immediate shift.
PTERIS CRETICA ALBO LINEATA, TREMULA, SERRULATA EXALTATA, 20*s*. per 100.
NEPHRODIUM MOLLE, 20*s*. per 100.
LOMARIA GIBBA, good, 30*s*. per 100 ; extra, 40*s*. per 100.
FERNS, Mixed Seedling, in variety, 25*s*. per 100.
PEREKSIA STOCKS, 25*s*. per 100.

Terms cash with order, to
ENOCH WHITE, F.R.H.S., Nurseryman and Florist, Bournemouth.

Bush Hill Park Nursery, near Enfield.

HUGH LOW AND CO. have large quantities of FRUIT TREES, ROSES, and other Outdoor Nursery Stock, of fine quality, at their Nursery, near the Bush Hill Park Station of the Great Eastern Railway, and they cordially invite their friends to inspect the same ; also the Glass Erections, which consist of Long Ranges of Pits and Thirty-three Houses, averaging upwards of 100 feet in length, many of them 25 feet wide, containing Acacias, Azaleas, Adiantums, Camellias, Cyclamens, Dracænas, Ericas, Gardenias, Genistas, Grape Vines, Jasmines, Palms, Pelargoniums, Roses, Solanums, &c. Clapton Nursery, London, E.

Come and See.

THE HOME OF FLOWERS is now in splendid condition. All the new SOFTWOOD PLANTS and the trial of the best older varieties is most interesting to all lovers of flowers ; the PELARGONIUMS, BEGONIAS, &c., are far beyond anything before seen. Send for a Catalogue.

CINERARIAS.

March Past and Victory Strain.

We wish to announce that we have now large quantities of SEEDLINGS of the above, 1*s*. 6*d*. per dozen, 10*s*. per 100. All are from the finest named collection that ever existed, and are as near perfect as can well be desired ; very different to those usually offered.

CUTTINGS.

We have now large quantities of SOFT-WOODED PLANTS, Zonal Pelargoniums in particular, and should be pleased to quote price for any numbers. Send for a Catalogue.

We have large quantities of specially prepared ZONAL PELARGONIUMS, just ready for potting on for winter flowering, from 6*s*. to 12*s*. per dozen. See Catalogue.

H. CANNELL & SONS,
THE HOME OF FLOWERS,
SWANLEY, KENT.

SELECTED FARM, FLOWER, AND VEGETABLE SEEDS,

OF ALL SORTS, FOR PRESENT SOWING.

Early CABBAGE, LETTUCE, ONION, TURNIP, CALCEOLARIA, CINERARIA, PRIMULA, PANSY, BEGONIA, TRIFOLIUM, ITALIAN RYE-GRASS, Champion Ox CABBAGE, Mixed GRASSES and CLOVERS, &c.

Priced CATALOGUES Post-free.

Early White Single Roman HYACINTHS, Paper White and Double Roman NARCISSUS, also all other BULBS for Early Forcing purposes, of best quality.

JAMES DICKSON & SONS,

108, EASTGATE STREET, CHESTER.

SPECIAL CULTURE OF FRUIT AND ROSES.

THOMAS RIVERS & SON

INVITE AN INSPECTION OF THEIR

ORCHARD HOUSES,

which are now ripening Large Crops of Fruit.

A FINE COLLECTION OF ROSES IN BLOOM.

Convenient Trains leave Liverpool Street Station (G.E.R.) at 10.32 and 2.50 for the Sawbridgeworth Station, one mile from The Nurseries,

SAWBRIDGEWORTH, HERTS.

WEDNESDAY NEXT.—(Sale No. 6698.)

CATTLEYA SKINNERI:

GIGANTIC PLANT.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 6, an enormous Specimen of CATTLEYA SKINNERI, being one of the largest ever brought to this country, measuring no less than 20 feet in circumference, and about 7 feet across. It was seen in flower by Collector, who describes it as a fine dark variety ; and dried flowers will be on view at time of Sale. Also Two Plants of LYCASTE SKINNERI ALBA, found by Collector in flower, and brought over under his especial charge in a semi-established condition ; 100 Plants of CATTLEYA DOWIANA, and a quantity of LÆLIA PURPURATA, and other BRAZILIAN ORCHIDS.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

FRIDAY NEXT.

AËRIDES SANDERIANUM, RCHB. F.

GRAND NOVELTY.

Professor REICHENBACH writes :—"This is, no doubt, a grand Aerides, just imported by Mr. F. Sander, who knew it half a year since, from sketches in water-colours sent, I believe, from Eastern Tropical Asia, where it lurky in an obscure valley, not much trodden, as it would appear, by Europeans. The plant at hand is very vigorous, and its features are short and broad leaves, with two retuse lobes at end. The inflorescences are verd numerous and long, and very florid in the plant before me, and the flowers match any flowers of the Odoratum section in extent. A sketch shows sepals and petals white with purple ends. The great lip is represented yellow, with green end of spur, and a remarkably fine purple mid-lacinia. By this, as well as the long spur and the equal, not pandurate mid-lacinia, it is distinct from the much similar grand Aërides Lawrenceæ. It is named after Mr. Sander, who has been very lucky in importing curious and rich Aërides."

AERIDES SANDERIANUM produces flowers fully as large as Lawrenceæ, from which it varies by the lip being yellow and longer. It is one of the very finest novelties we have had the pleasure to introduce. The importation is in superb order, it is very rare, and every plant is offered.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. Sander to SELL the above extra fine lot on FRIDAY NEXT, August 8, at half-past 12 o'Clock precisely, at their Central Sale Rooms, 67 and 68, Cheapside E.C. Also superb importations of ODONTOGLOSSUMS, CATTLEYAS, &c.

On view morning of Sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Laing's Begonia Tubers.

JOHN LAING & CO.

Special Offer of White Begonias.

Seedlings from three best whites, large tubers, per dozen 12s. Producing fine decorative plants. Most useful for cutting. Free by Parcels Post.

Begonia Growers, Forest Hill, S.E.

DANIELS' SEEDS for PRESENT SOWING.

Price List sent free to any address on receipt of post card.

DANIELS BROS., SEED GROWERS, NORWICH.

The 3 Best Cabbages for Early Spring Use.

Daniels' Defiance Giant Early Marrow, 1s. pkt., 2s. 6d. per oz.
Allan's Incomparable Early Marrow, 1s. 6d. pkt., 2s. 6d. per oz.
Daniels' Little Queen, superfine early dwarf, 1s 6d. pkt., 2s.6d. oz.

DANIELS BROS., Seed Growers, Norwich.

The 4 Best Onions for Autumn Sowing.

Daniels' Golden Rocca, fine straw-coloured skin, 1s. 6d. per packet, 3s. 6d. per oz
Daniels' Giant Rocca, weight 2 to 3 lb., 1s. per oz., 10s. per lb.
Daniels' White Elephant Tripoli, the largest and best Silver-skin Onion known, 1s. 6d. per packet, 3s. 6d. per oz.
Zittau Yellow Giant, splendid quality and long keeper, 8d. per oz., 6s. per lb.

DANIELS BROS., Seed Merchants, NORWICH.

CABBAGE

FOR PRESENT SOWING.



SUTTON'S IMPERIAL.

The best Cabbage for spring use. If sown the first or second week in July it will produce beautiful Cabbages for early spring use. Heads cone-shaped, very large, firm, and of mild flavour.

1s. per oz., post-free.

"Sutton's Imperial is the finest Cabbage I ever grew: it is not only the handsomest, but the best flavoured Cabbage I have ever eaten."—Mr. A. S. CAMPBELL, *Ware.*

Vegetable Seeds Post-free (except Peas and Beans); all goods value 20s. Carriage Free to any Railway Station in England or Wales.

SUTTON & SONS,

THE QUEEN'S SEEDSMEN, READING.

Laing's Roman Hyacinths.

JOHN LAING & CO.

Our Bulbs are unequalled.

Free by Parcels Post.

12 for 2s. 9d.; 6 for 1s. 6d., fine bulbs of Early White Roman Hyacinths. So chaste and useful for early winter blooming. Catalogue of Dutch Bulbs, Roses, Fruit Trees, &c., also free by post.

Bulb Merchants, Forest Hill, S.E.

GRAPE VINES.

THE

LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), LIMITED,

THE VINEYARD and NURSERIES, GARSTON,

have this Season a splendid Stock of Grape Vines suitable for Present Planting. Orders booked now for specially strong Vines for Fruiting in Pots.

Catalogues, with full particulars, on application.

FERNS A SPECIALITY.

Now Ready. **SPECIAL OFFER, No. 41,** of Choice, Rare, and Beautiful

FERNS AND SELAGINELLAS,

Carriage Paid, embracing many of the most lovely and desirable in cultivation.

ABRIDGED CATALOGUE

of over 1000 Species and Varieties free on application.

LARGE CATALOGUE (Price 1s.), containing 75 Illustrations of Ferns and Selaginellas, valuable "Hints on Fern Culture," and other useful and interesting information.

W. & J. BIRKENHEAD,

FERN NURSERY, SALE, MANCHESTER.

Laing's Begonia Tubers.

JOHN LAING & CO.

Collections of 1 dozen, named, our Selection:—
Singles, A 42/-, B 36/-, C 30/-, D 24/-, E 18/-, F 12/-
Doubles, P 90/-, R 63/-, S 48/-, T 42/-
Collections unnamed, our Selection:—
Singles, G 21/-, H 18/-, J 18/-, K 12/-, L 9/- per doz.
Doubles, W 30/-, X 24/-, Z 18/- per dozen.
Singles, for bedding, M 40/-, N 30/-, O 24/- per 100.

Begonia Growers, Forest Hill, S.E.

NOTICE.

THE

GARDENERS' CHRONICLE

for NEXT SATURDAY, August 9,

will contain a Special Report of the Great Show of the Liverpool Horticultural Association, to be held in Sefton Park, August 2 and 4, and of the Exhibition of the Royal Horticultural Society of Southampton, to be held in Westwood Park, August 2 and 4.

WEBBS'

EMPEROR

CABBAGE.



THE BEST CABBAGE in CULTIVATION

6d. and 1s. per packet, 1s. 6d. per ounce.

Mr. J. Muir, in the "Journal of Horticulture" of May 24, says:—
"Our largest piece of Spring Cabbage measures 70 feet by 50 feet, and here we have many sorts growing. The best of all these at the present time is WEBBS' EMPEROR."

	Per Ounce, Post-free.
EARLY NONPAREIL CABBAGE	6d.
ENFIELD MARKET do.	6d.
EARLY RAINHAM do.	6d.
EARLY DWARF YORK do.	6d.
LARGE RED DUTCH do. 6d. pkt.	9d.

ONION.

	Packet.	Ounce.
WEBBS' NEW RED GLOBE TRIPOLI	6d.	1s.
WEBBS' WHITE ITALIAN TRIPOLI	6d.	9d.
LARGE FLAT RED TRIPOLI	6d.	9d.
GIANT ROCCA	6d.	1s.
WHITE LISBON		6d.
WHITE SPANISH or READING		6d.

All Garden Seeds free by Post or Rail.

Five per Cent. Discount for Cash.

WEBB & SONS,

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE.

EARLY FORCING BULBS.

EARLY WHITE ROMAN HYACINTHS,
DOUBLE ROMAN and PAPER WHITE NARCISSUS.

B. S. WILLIAMS

Takes the opportunity of announcing that he has received his annual consignments of the above Bulbs, which are invaluable for early forcing, and solicits early Orders, which shall have prompt and immediate attention.

The Bulbs are unusually fine this year.

VICTORIA and PARADISE NURSERIES,

UPPER HOLLOWAY, LONDON, N.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 2, 1884.

HATFIELD HOUSE.

TWENTY miles from London is the town of Hatfield, and its church founded before the Conquest, and its inn, "The Salisbury Arms," formerly called "The George," named after "St. George, that swinged the dragon, and sits on his horseback e'er since at mine hostess' door." Of course you come to Hatfield—a town of no delight, in aspect or anything—to enjoy a day in the park, which the Marquis of Salisbury is liberal in throwing open to the public, remembering his great chief's remark, "I cannot think how people can be so foolish as to close their parks to the public," and perhaps having heard that when Lord Derby's gamekeeper said to a trespasser, "You have no business here—this is the Earl of Derby's land," the man replied, "I can't help it; I must be on somebody's land, for I have got none of my own."

Hatfield belonged to the Abbey of Ely, and when the Abbey was erected into a bishopric in 1108, Hatfield became one of the episcopal residences, and the monks of seven centuries ago strolled in the great park beneath the very Oaks—huge, umbrageous, gnarled trees—which now, in their old age, show so grandly in this fine old park. Under an Oak which was probably old many centuries ago, and which is now dead, its trunk propped, and the hollow part filled with cement, while all the bark is off the bole, and not one green branch remains, the Princess Elizabeth, who resided here during Mary's reign, received the news of the queen's death. This venerable ruin stands in the Lime avenue between the house and the vineyard. This, like other interesting stories, has been doubted. Some have doubted Shakespeare, and his plays have been attributed to Lord Bacon. It is so very easy to doubt. "What!—a young girl sit beneath an Oak in damp and drear November!" say the critics. Why not? She did it as an old girl, why not as a young one? The brave queen, the bravest of our queens save one, gave audience under a tree many times during her reign. She delighted in the open air and received Fytton, Vice-Treasurer of Ireland, in 1575, under the same Oak at Hatfield, in the same month of November and nearly on the same day. In her seventieth year she rode ten miles at a hunting party. She walked daily in the park within six months of her death, though ailing, and she nearly died outdoors in her garden when her last illness seized her late in the autumn of 1602.

Four of our sovereigns loved Hatfield so well that they made the palace their favourite residence—Henry VIII., Edward VI., Elizabeth, and James I. Bishop Morton, Henry VII.'s favourite minister, rebuilt and beautified the palace in that new style of architecture which his master's reign, that closed the Middle Ages, inaugurated. Embattled houses, with moats and outworks, of which Hurstmonceux Castle is a late specimen, were succeeded by the red brick houses, whose age, magnificence, and rich colour render them so

attractive to us at the present time. Henry VIII. having laid hands on Hatfield, it remained Crown property till 1607, when James I. exchanged Hatfield for Theobalds.

It will be remembered that the founder of the Cecil family was Queen Elizabeth's great Treasurer, the incorruptible Lord Burleigh, who, as Sir William Cecil, had been appointed at Hatfield principal Secretary of State, who used to look so sardonically at Essex or Leicester when he and they rode in the Queen's train. Lord Burleigh died, aged seventy-eight, in 1598, and Elizabeth wept for him the bitter tears of age and regret. The successor of his eldest son is the Marquis of Exeter. His youngest son, Sir Robert Cecil, who inherited the park and house of Theobalds, a still more magnificent place than Hatfield, was Elizabeth's Secretary, when she told him as she lay dying, "My seat has been the seat of kings; I will have no rascal to succeed me!" and she then named her cousin of Scotland, whom Cecil proclaimed immediately after her death. James came to Theobalds to visit the subtle and intriguing minister, who became in turn Secretary of State and Lord Treasurer like his father; and in 1604, the year after Elizabeth's death, was created Baron Cecil and Viscount Cranborne, and Earl of Salisbury in the following year.

The house at Hatfield stands on high ground, in the midst of gardens and abundant foliage, through which the distant country is sometimes seen. The town lies immediately outside the gates, while the park, with noble avenues of Limes in the foreground, and wilder scenes beyond, reaches close to the boundaries of the terraces and gardens on two other sides. During a recent visit I approached the grand pile through the shrubberies formed of beautiful Conifers and many kinds of deciduous trees. Fine specimens of the Cryptomeria japonica, Sequoia sempervirens, and Araucaria imbricata grow here in perfect health, protected by Chestnuts, Beeches, evergreen Oaks, and many shrubs. On this quiet western side the library overlooks the sober old-fashioned garden below, which has a close walk, a thick twining Lime arcade growing round it, a pond in the centre, and a Mulberry tree in each corner, planted by King James. Beyond the garden are some exceedingly aristocratic-looking precincts and outbuildings, affording an excellent view of palatial stables and parish church, with tennis-court and riding-school, old gateway and town: but the best of the buildings, from a picturesque point of view, is the brick pile, with the Ivied tower, containing the stables and laundry. This handsome building was, in fact, the banqueting-hall of the old palace, for Sir Robert Cecil was fond of building, and acted as his own architect in the erection of the present house. The length of the south front is 300 feet, and its west wing has been so well restored that none would suspect the terrible accident of 1835, when it was totally destroyed by fire, the Dowager Marchioness of Salisbury perishing in the flames. Above the drawing-room, on the east front, is a room which bears the name of King James, and owns perhaps the best view of any room in the house, overlooking the terraced gardens and some of the oldest timber of the park beyond. The room is graced by King James' portrait, and when his reigning successor and her consort came to Hatfield and were brought to look at it, they must have seen what an incomparable bit of English domestic scenery is spread before the windows. It includes a racecourse, where the Yeomanry races were held, amid a number of great Oaks with tremendous boles, not very tall, and vast spreading heads.

In the low ground this side the park a pond glistens, having Willows, Poplars, and Birch around, with many a quiet nook which you may find on rambling there, and a large fernery, and among the shrubs a variegated Oak and an Elm with leaves marked with white. You reach this low level from the terrace below the windows of King James' room by a series of steps—big steps, for each consists of a terraced garden, one having on its level surface a croquet lawn, another a maze of Yew, another a garden of flowers of sweet perfume. One cannot wonder that Lord Beaconsfield was fond of a house so grand in itself and its surroundings. He stayed here a long time just before his death. It must have pleased him to observe constant cricket in the park in summer, school treats, Odd Fellows, and Ancient Foresters, and thousands of other persons from far and near wandering at will, and a good many of them drifting through the house.

The rest of this account must be a mere catalogue of things that may be seen, including a kitchen garden, containing about 11 acres, with fruit trees about fifteen years old; so this is a new garden in place of an old one further from the house. The concrete walls are wired and planted with fruit trees on both sides. There are twenty-eight greenhouses and hothouses, including a vinery in seven divisions, an Azalea-house, Strawberry-house, Peach-house, stove with Ferns, Orchids, and Allamandas, a Melon-house, and others containing decorative plants and plants for supplying cut flowers, Palms, Gardenias, vast quantities of various kinds of Adiantums, and in one house 800 pots of Eucharis, and a great number contain Lilium auratum, Poinsettias, and Dracænas. One division of this part of the garden might be called "the hospital," where sick plants from London are now being nursed into health again, ready to lead, some other day, the fast life of plants exposed to the trying atmosphere of reception-rooms in London. Besides these houses there is a great conservatory in a shrubbery near the house, but not so near it as those whose garden is their pride and care and chief delight would wish it to be. In the management of all the departments of this grand garden Mr. Norman employs thirty men, and not too many either.

I have not described the vineyard, which everybody visits, on the two opposite banks of the Lee, where the old kitchen garden once was. The first earl, Secretary Cecil, was as fond of gardening as of politics, and here was his pleasaunce, designed by a Frenchman, and planted with Yews in radiating lines and with hedges of Juniper and Yew. The river bank on one side is steep, and the walks are delightful on a hot day, especially the broadest on the river side, with its velvet turf and the water on one hand, and sloping, close clipped, banks of Yew on the other. The shelter is complete here, and the hottest sun is shaded, for above the clipped part of the Yews the trees take their natural growth and spread high and wide. The Earl received 20,000 Vines from France, through the French ambassador, and two French gardeners to plant and manage them. They were planted on the other side of the river, beyond the screen of tall trees across the wide stream, and there also were planted various other varieties which were sent to the great man by his friends. Evelyn came here of course, half a century after the Secretary's death, for he died in 1612, before the house was quite finished. His two gardeners were Montague Jennings and John Tradescant, the elder, who was Charles I.'s horticulturist afterwards, and father of the founder of the Tradescant Museum, now known as the Ashmolean Museum at Oxford.

The lords of Hatfield have been fond of gardening. Evelyn wrote, "Went to see my Lord of Salisbury's palace at Hatfield, where the most considerable rarity, besides the house, inferior to few in England for its architecture, are the garden and vineyard, rarely well planted and watered." Nature had done much at Hatfield, but Art has mended Nature's work. *H. E.*

New Garden Plants.

AËRIDES SANDERIANUM, *n. sp.**

THIS is no doubt a grand Aërides, just imported by Mr. F. Sander, who knew of it half a year ago from sketches in water-colours, sent, I believe, from eastern tropical Asia, where it lurks in an obscure valley, not much trodden, as it would appear, by Europeans.

The plant at hand is very vigorous, and it has short and broad leaves, with two retuse lobes at the end. I would speak about texture if it were not for a correspondence with my excellent correspondent, Mr. Ross, of Lastra, who may teach us one day that texture, too, is an inconstant matter. The inflorescences are very numerous and very long, and very florid on the plant before me, and the flowers match any flower of the odoratum section in extent.

A sketch shows white sepals and petals, with purple ends. The great lip is represented yellow, with the end of the spur green, and a remarkably fine purple mid-lacinia. All the laciniæ of the lip are denticulate and wavy.

I am in great embarrassment, inasmuch as the spurs are too much pressed and with certain signs of mould. Thus I am not very clear about the inner keels. I believe, however, they stand in the middle on each side of the spur, being transverse and emarginate. By this, as well as by the long spur and the equal, not pandurate, mid-lacinia, it is distinct from the much similar grand Aërides Lawrenciæ.

It is named after Mr. F. Sander, who has been very busy in importing curious and rich Aërides. *H. G. Rchb. f.*

ORCHIDS AT ST. ALBANS.

ONE hundred and twenty thousand Odontoglossum Alexandræ, 10,000 Cattleyas, varying in size from the stout plant in 48-size pot to the giant with two or three hundred bulbs, and proportionate quantities of most of the other good and favourite Orchids, must produce a great show at any season. Even now, when the display of bloom in all Orchid collections is at its lowest, the number of rare things in bloom here is quite sufficient to render a visit pleasant, while the many improvements in the construction of the houses and the variety of devices planned for the better cultivation of difficult plants—the peculiarities of which Messrs. F. Sander & Co. are so apt in finding out—cannot fail to render it instructive. The wonderful block of houses at the new nursery is perfect in every respect; nothing seems to have been omitted in them which could be desirable, and while the houses are well and substantially built they are in all cases light and neat and in some instances ornamental, as for example, the specimen Cattleya-house, which has a fountain and large geometrical basin at each end; but even these ornaments are not to be lost to the Orchids, for on pedestals stood in the water are fine masses of Cypripedium Schlimii, placed just within reach of the spray of the fountain, and there they seem to be luxuriating in such a manner as to give good hope that the proper way of growing the plant has been discovered at last.

In this specimen Cattleya-house and its companion structure beside it, each of which is about 200 feet in length, are in bloom a good many varieties of that perpetual flowering and sweetly scented Cattleya Gaskelliana, This always produces large showy blooms, even if some of them are pale in colour. When the fine varieties of it get that improvement which good culture always gives, it will rank with the best. C. Gaskelliana alba is also in flower, and proves to be a very lovely thing, with massive white flowers, over which a faint and almost imperceptible blush is spread. Some recently imported C. Dowiana from a new district, many of them having nearly a hundred bulbs, are already producing a few of their lovely yellow and crimson blooms, and near them some fine C. aurea with a few stray flowers which

* *Aerides Sanderianum*, n. sp.—Aff. Aeridi Lawrenciæ. Folus latis brevibus apice bilobo retusis; racemis validissimis; calcari amplo incurvo acuto laminam prope æquante, callo emarginato utrinque in medio, lacinus laminæ lateralibus dolabriformibus denticulatis crispulis, lacinia mediana ligulata crispula denticulata longiori. *H. G. Rchb. f.*

seem to be lighter in the colour of the petals than those of C. Dowiana, but otherwise they are much alike. The growth of the plants, however, is very different. Also giving excellent opportunity for comparison are the white forms of C. Mossiæ, of each of which, as well as some new ones, Messrs. F. Sander & Co. have a few plants. C. Wagneriana has pure white flowers with an orange mark only in the throat. C. Reineckiana is similar, but with the addition of violet veins on the labellum; and C. Arnoldiana is like a form of C. Reineckiana, with pearly tinted petals—all are lovely, sweet, and rare. Also among the Cattleyas are the rare yellow and crimson C. velutina, the new hybrid C. calumniata (Bleui), a select lot of fine varieties of C. Eldorado, including the white variety, C. Wallisii; and a grand lot of C. Mendeli, C. Trianæ, C. Percivaliana, C. gigas Sanderiana (some in flower), &c., are all in the best possible condition, the giant C. Skinneri, recently illustrated by us, breaking well. In the Cattleya-houses the immense specimens of Lælia elegans, some of them with a couple of hundred pseudo-bulbs each, are still producing a few flowers, one of them with large white petals and glowing violet-crimson lip being a very grand thing. Every fresh lot of this plant (L. elegans) which arrives only goes still further to demonstrate the fact that it is the result of intercrossing between C. intermedia and L. purpurata and C. guttata and L. purpurata; the pollen masses in many cases do not differ in the least from those of Cattleya.

The several Odontoglossum-houses are filled with stout ruddy-looking specimens, a wonderful sight being presented by a view down the 250 feet length of the main structure devoted to them. It is the boast of the St. Albans firm that while their importations have produced a great percentage of marvellously fine and valuable hybrids not one bad variety has been obtained from them. The few they have in flower now are indeed superb; in fact, it does not seem possible to get bad varieties out of those imported from the best quarter, and none but these should be got over in spite of the extra cost both in collecting and in carriage. Odontoglossum vexillarium, too, in its many varieties is also still giving a show, and as the plants are in batches a marked difference can be seen between the varieties obtained from each locality, a curious test being furnished by which to distinguish between the ordinary large flowered form and the late flowering rose coloured variety—in the latter the small ascending wings to the labellum beside the column are pointed and in the former rounded off.

In the further cold houses are many thousands of O. Pescatorei, O. nebulosum, O. ramosissimum, &c., in bloom being Odontoglossum sp. like O. Williamsianum, some new or rare Epidendrums—one of them with growth of E. prismatocarpum and large upright spikes of flowers, something like those of Barkeria cyclotella, being very beautiful. Also in bloom are good specimens of Oncidium macranthum, and under probation some new Masdevallias, Restrepias, Oncidiums, and Odontoglossums, including the rare O. aspersum and O. Dormanianum.

The long intermediate-houses contain a good stock of all the best Dendrobes, such as D. Brymerianum, D. Wardianum, D. thyrsiflorum, D. crassinode, &c., and a fine lot of the beautiful Aërides Rohaneanum, and that princess among Aërides—A. Lawrenceæ, as well as some other phenomenal new ones which are being proved. Vanda Sanderiana, too, is well represented. With respect to this plant, the old story has to be told, which has to be related of every new and beautiful Orchid on its first arrival—it has been grown too hot. At St. Albans and in other places it has been found that the plant is a tolerably cool-house plant, for the summer at least; and that while in the winter it will not by any means stand what is called cold, it does not require the stewing and coddling to which it used to be subjected, and which went such a great way in putting to flight the vital spark which the fresh importation managed to keep in them during their long journey. One plant of it we know of, which is in the most robust condition, and has a great number of fresh roots which has never been in a higher temperature by artificial heat than 65° Fahr., and is now, and has been since the summer began, in an unheated house. These facts show that it is a plant for general cultivation as well as being one of the most wonderful and beautiful of Orchids.

In flower in the intermediate-house is a fine specimen of the best form of Calanthe Dominiana, with nearly blue flowers; together with the rare Dendrobium Griffithianum, with a grand spike of wax-like yellow and orange flowers, shaped like a bunch of Grapes, D. Farmerii, Vanda limbata, some improved forms of Dendrobium calceolus, some very strong D. Dearei, a very fine and clearly marked Aërides quinquevulnerum, Sarcanthus Parishii, and various Vandas, Aërides, Saccolabium, Lælia grandis, L. purpurata, &c. The new Vanda-house is a very fine structure, nearly completed; and the new Phalænopsis-house, which is quite finished, is most perfectly fitted, so that air and moisture may be alway secured, and yet the thermometer and hygrometer kept in accord. The hermetically sealed hot-water tank on the centre bed with its plan of water circulation, both open and through hot-water pipes; the system of heating and ventilating, and the labour-saving means of watering the paths, &c., are well worth inspecting. A few fine specimens of the rare Angræcum caudatum and Saccolabium Hendersonianum are in it already. On the whole, whatever Messrs. F. Sander & Co. have done at their new nursery has been done well, and at each of our visits we find an improved general stock, in addition to the great quantities of leading things which they are noted for.

The old establishment in the town, which with a fast trotting horse for transit and the telephone for speech, brings the new one in effect quite close to it, is still devoted to the new plants on trial, and any which by their previous good behaviour have shown a liking for the place. A very fine collection of Masdevallias are there to be found, including M. racemosa Crossii, M. rosea, and a surprisingly various collection of M. Harryana, imported direct and many of which are in flower—one variety (M. H. tricolor), with dark maroon stripes on magenta ground, being very distinct and a better thing than the beautiful M. H. versicolor; another very large blood-red kind is also very fine. Other noticeable batches at the old nursery are a fine one of Odontoglossum madrense, and a fresh importation of a Cypripedium with foliage as ornamental as a Phormium, and said to have large yellow flowers. Everything is clean and in order, that first of all Orchid growers' maxims, "To keep plants clean goes a great way towards keeping them healthy," being firmly believed in at St. Albans.

A GARDENING TOUR.

Having just completed a long round, from friend to friend and garden to garden, I have put together a few notes of what struck me most at the time. The following observations relate to two journeys—one in the spring, and the other just over—which may perhaps be taken together. Mr. Bull's Orchids attracted me first of all, and the accident of being in town on Whit-Monday gave me, as it turned out, the best chance in the year of seeing them. This aristocratic show was quite abandoned on such an occasion as that—at any rate, I had it all to myself—and Odontoglossums and Lælias, Cattleyas, and I know not what, in the greatest profusion both of form and of colour, found small admiration from the public that day. It was a feast to the eye which I should say will never be excelled, and on Whit-Monday it could be enjoyed to perfection. My next move was in the way of failure as much as this had been in that of success. Having a few hours at my disposal, and my opportunities of seeing Kew being scanty in the extreme, I was tempted to go there in the course of the afternoon. Suffice it to say that a greater mistake could hardly have been made. I learned the next morning from the *Times* that I had been a unit in a stream of 84,000 persons. I was pushed through one or two of the houses, and then, after a similar experience in the new rockery and a hasty glance at some of Mr. Joad's plants, I determined never again to try Kew on a public holiday, and I gave up the idea of taking notes altogether, and soon left the place.

In the evening I found myself where I have often been before, I mean in that paradise of gardens—Heatherbank—the residence of G. F. Wilson, Esq. It is always a red-letter day with me when I go to Weybridge, and there was not less to be learned there this spring than had been the case on other occasions. Mr. Wilson most kindly took me over to Wisley the next morning, and an Irish lady who seemed to know a good deal about plants went with us. The great thing which strikes one there is that improvement is studied to the last degree. There is sure to be something of great interest which was not apparent on the occasion of a former visit, and many rare and difficult plants crop up on every side which are not to be met with elsewhere. Moreover, old friends seem to put on a new habit in this garden, and they proclaim loudly enough that their wants are satisfied here in an exceptional degree. As an instance of what I mean in the last case I would mention a large plant of Meconopsis nepalensis, which was a great deal finer than anything which I had ever seen before Instead of growing up in a straight and lanky fashion, with only a bell here and there at one time to be admired, this Meconopsis of Mr. Wilson's was of a very sturdy growth, after the fashion of some large Candelabrum, with a circumference, I dare say, of 1½ foot, and covered all over with buds, which were just ready to burst out into a full vision of beauty, and which must soon have been entrancing to look at.

It was Mr. Wilson's method of cultivation and his rich deep soil which brought this about, but no one could form an idea of what Meconopsis nepalensis can be at its best who had not seen it. At the bottom of a sheltered bank, which was dotted all over with alpine rarities of different kinds, such as Omphalodes Luciliæ, Campanula pulla, and many others, Gentiana ornata seemed to be perfectly at home—there was that unmistakable look about it which said that it was content, and henceforward all difficulty about this favourite Himalayan must be considered to have been overcome. I never saw the ghost of Goodyera pubescens in any other place in the open air but here, and with Mr. Wilson it was increasing and strong. So also Epigæa repens was at its best. I have failed with it over and over again, and a nurseryman of great knowledge in the South of England told me, not long ago, that it absolutely declined to live with him. The odd thing about it was that he said this fit had only lately come upon it. Ten years ago he was able to manage it with ease, but now he could do nothing at all with it, and he could not account for the change. Mr. Wilson seems to let it grow under the shade of trees, and the autumn leaves blow over it and accumulate about it as much as they like. It is to this and to the damp situation in which it is placed that he seems to attribute the unusual luxuriance which it displays. I also became acquainted with Dianthus hispanicus here for the first time. But I must refrain from all attempt to give a list of what I saw doing well at Wisley. These experimental grounds are rich in point of variety both of plants and bulbs as well as in their excellence of growth. Such very different parts of the world are illustrated in them, one is quite taken by surprise—*e.g.*, South America has its representative in Eryngium pandanifolium with its fine head of small brown nut-like flowers. I had always understood that this plant was swept out of the country by the severity of some of our recent winters, but here it has attained to the height of at least 7 or 8 feet, and there is small fear regarding it. Lilies, not in tens or twenties, but I should say in hundreds and thousands, were responding with alacrity to the wise care which had been bestowed upon them. It was much too soon in the year when I was at Wisley for me to see them in blossom, but I could form some idea of what the blossom would be. Auratums, with stems nearly as thick as one's finger, presaged well for July. Lilium colchicum and L. speciosum were preparing a fine treat for their owner, and so also were many others. They are grown in large enclosures or pens, and if these are not in themselves very beautiful to look at, they at all events protect the Lilies from wind, and so enable them to come unharmed to perfection. Mr. Wilson showed me some places where spring frosts had pitched rather heavily on his favourites; but they were recuperating quickly, as an American would say, and it was odd to notice their manner of raising their heads after a difficult run for some distance along the ground. Alongside of the Lilies, and grown also in the greatest abundance, were the best of the Himalayan Primulas. They seed themselves all over the place, and as is always the case from some cause or another, self-sown seedlings do a great deal better than if they had been "copetted" instead.

I often wonder why the Kæmpferi Irises are so seldom met with in gardens. They generally have their due place in nurserymen's catalogues, but the attention ends with the catalogues; at any rate, they are known, comparatively speaking, by a very few persons, and they are grown by still fewer. But surely this is rather a pity. They make a splendid *finale* for the Iris season and their great flat, broad, open petals are simply astonishing. Mikado is a new one,

which has been lately sent out by Messrs. Fröbel, of Zurich, and may especially be recommended; and there are now no lack of good varieties, but they do not seem to make way as they ought to do. Their requirements are not at all difficult to comply with. They like to have a bright sun over their heads, and to have their roots in some damp, hollow situation, and then they increase wonderfully. Mr. Wilson is growing them in this sort of way on the edge of a pond, and it cannot be doubted that this is exactly the kind of place where they will do well. I prophesy that a great success will be scored by him in this department of Irises.

All kinds of things find their place in the wood or on the edge of it, *e.g.*, Epacrises, Camellias, Lapagerias are all under trial, and if only a small percentage of them survive the next hard winter, the result will be gratifying. Mr. Wilson is, as I have said, a pioneer in the way of improvement, and it will be well if he has many to imitate him; but his garden and trial-ground outrun the length of any ordinary letter, and I must be content with just scratching their surface.

The next thing was to pay a flying visit to Mr. McIntosh's Rhododendrons near Oatlands Park, which were kindly open to view. The effect in point of colour was grand in the extreme. Save only in Messrs. Waterer's nursery I never saw anything like it before. The ground falls so beautifully from the house that one stands over a sea of colour so to say, and the eye commands it at once. All shades of pink and purple and claret and red are to be met with here, besides white in abundance; and the measure of advance which skilful hybridisation has brought about may be tested by reference to a fine old specimen of Rhododendron ponticum which towers up close by some 30 feet towards the sky, but which will not stand comparison with its more gaily dressed rivals.

I could not help seeing one thing in Mr. McIntosh's garden which I rather regretted. His Lilies, though of splendid growth, seemed hardly as tall as I remember them on a former occasion. Some four or five years ago those wonderful auratums, which were of Brobdingnagian height and size to go with it outran anything that I had ever heard of or ever seen in that way before. They took away one's breath for the moment as they stared at you from the Rhododendron beds. It is clear, I think, that Rhododendrons and Lilies agree well enough together at first, but as time goes on the weaker has to succumb to the stronger. The Rhododendrons get well hold of the ground, and no Lily in the world can stand before them with continuous success. But change is the order of the day, and he may be felicitated as a happy man who can grow such Rhododendrons and such Lilies together like those which I saw at Duneevan the other day. *A Wanderer.*

FORESTRY EXHIBITION.

(*Continued from p. 74.*)

WOOD, AND HOW TO EXHIBIT IT.—Few things are more difficult, few of more practical importance, than the identification of different woods when worked up into squared logs, or otherwise deprived of bark, leaves, and flowers. Great must, therefore, be the educational value of a correctly named and practically exhibited series of specimens. It may seem too obvious to be worth writing, that such merely local, popular, or commercial names as Cedar, Dogwood, Iron-bark, Padouk, Poon, &c., are of no value for identification, but, unfortunately, the War-office sends collections in which Cedrela odorata, Rhamnus Frangula, Eucalyptus resinifera, and Pterocarpus indicus figure under such names as these. The commercial names ought not to have been omitted, the use of "Dogwood" in the gunpowder trade being, for example, a fertile source of confusion, but the scientific name is even more necessary. Unfortunately, past errors bear their fruit in some uncertainty as to the signification even of some scientific names, especially among Conifers, and it then becomes desirable to add the authority for the name adopted. This is systematically carried out in the specimens exhibited by Messrs. James Veitch. Locality is also a matter of considerable interest, and "America" can hardly be termed explicit for the Greenheart (Nectandra Rodiæi) of British Guiana. The microscopic examination of thin sections of woods affords a certain, though tedious means of identification, and slides prepared for this purpose are also useful as showing the rates of growth in the early stages of the life of a tree. It is important that we should have statistics of growth for various species, at different ages, altitudes and exposures and on different soils. The Exhibition is rich in microscopic slides, many of which show sections of the same stem cut in various directions, but it is a pity it does not include the admirable series of slightly thicker and much larger sections prepared by Herr Burkart, of Vienna. These sections of European trees, named in seven languages, illustrate the great difference in colour and general appearance often presented by the same wood according to the direction in which it is cut. Each frame (and there are forty) includes three sections of one species, each about 4 inches long and 2 broad, cut transversely (*querschnitt*, or *hirnschnitt*), radially (*spiegelschnitt*), and tangentially (*fladerschnitt*), respectively. They are thus large enough to give a fair idea of colour, grain, width of rings, &c., to the naked eye; and though when unvarnished, too thick to be treated as transparent microscopic objects, yet when viewed with a 2-inch objective and a large reflector reveal much of the internal structure of wood. Another useful way in which woods have long been exhibited is in the form of books, cut from the wood inside, labelled

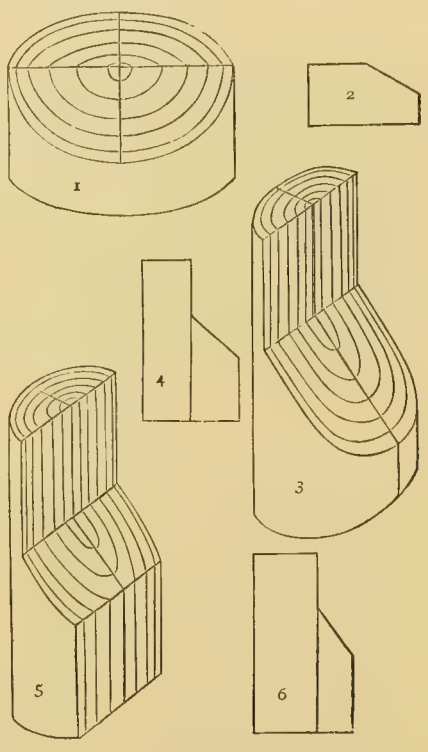


FIG. 28.—WOOD SECTIONS.

with its name, and hollowed into a "Solander" to contain preserved specimens of the leaves, flowers, and fruits of the same tree.

Leaving out of the question, of course, the endless possibilities of artificial staining, painting, and graining, woods appear very different when merely polished, and this has been generally recognised in the Exhibition.

The specimens from the War Department are small planks, some cut radially, others tangentially, the distinction not being indicated, and each divided diagonally by a line of black paint, on one side of which the wood is polished, and not on the other. Better methods are those adopted in the collection from British Guiana, where large specimens are used, showing either the entire transverse section, or a thick plank the whole thickness of a tree, in either case one side being polished, the other not. The sections "in the round" are mostly less than a foot high, have the bark on, and have one semicircle of the top horizontal, the other oblique (fig. 28). The best method of cutting such sections to be seen in the Exhibition, however, is undoubtedly that in the Indian collection. These logs in the round stand about 2 feet high; the top is semicircular and horizontal; for the upper third of the height of the specimen a vertical radial section is shown; for the middle third an oblique semi-elliptical section; and the lower third is uncut. Each section is half polished and half not (fig. 3).

This gives three sections instead of the two seen in the British Guiana rounds; but even here an improvement may be suggested. Of the planks cut from a log, only two can exhibit radial sections; and, as every practical man knows, a tangential section is to a considerable extent different from a radial one. A tangential section might be cut off the lower thirds of the specimens under Colonel Michael's care, giving a fourth kind of section, and not interfering with the indication of the diameter of the log (fig. 5).

One other point. Adhesive labels, or others nailed on, may serve their purpose; a painted or engraved number is easily affixed, but necessitates a reference to a catalogue; so undoubtedly the best method in the long run is that adopted in the collection from the Andaman Islands, viz., to have the names neatly cut in the wood itself.

PRACTICAL DIETETICS.

ON Friday evening, June 27, Professor de Chaumont delivered a lecture in the Conference-room at the Health Exhibition on "Practical Dietetics," especially in relation to preserved and condensed foods, Sir Lyon Playfair, C.B., F.R.S., occupying the chair.

The Professor pointed out the various constituents necessary in food, namely, nitrogenous or albuminoids, carbohydrates, or heat-producing foods, including fat, starch, sugar, and the like, and mineral salts, not only for assisting in digestion, but also for regulating the way in which the other constituents were assimilated. Besides these, there was another class, the vegetable acids, the absence of which affected the blood very prejudicially and produced scurvy or scorbutic complaints. Milk was long ago found to contain all these essential elements, and was, therefore, considered a perfect food for the young, but not for adults, as it would require nine or ten pints per day to support life.

It was a curious fact that almost all dietaries prepared officially, whether for prisons, workhouses, or armies, were defective, and the error generally lay in the same direction, namely, a deficiency of albuminoids and particularly of fat. Preserved and concentrated foods were very valuable in many cases, but it was necessary to distinguish between the two, and not suppose that "preserved" was "concentrated," or that a small quantity of it contained a large amount of nourishment. In fact, even in concentrated foods the statements sometimes made, such as that a lozenge or two would contain enough nutriment for twenty-four hours, were simply romances. A man could not remain in health with less than about 1 lb. of solid food per day, and that meant really water-free food, not what appeared to be dry, like ships' biscuits or flour, which, in fact, contained a large percentage of water. Beef essences, liquid meat, &c., were next referred to, and shown to be rather stimulants than real foods, although they were very valuable in their way. Recently several new methods of preserving food had been introduced by means of salicylic or boracic acids, but to these there seemed to be some objections. Lastly, the importance of a due proportion of fat being eaten was insisted upon, an eminent physician, some forty or fifty years ago, having said that one of the causes of the prevalence of consumptive diseases in England was the high price of butter.

The Chairman, in moving the vote of thanks to the lecturer, pointed out that the albuminoids were exactly of the same composition in the flesh and blood of all animals, and when dried were perfectly indistinguishable even by the chemist. These substances had to be built into the body, it being the work of plants to mould the elements into those forms out of the aërial and other food around them, whilst animals had only to give them a position in their organizations. It was a very common belief that the body was renewed in seven years, but as a matter of fact all the soft parts, such as the muscles, changed in about six weeks, and to supply this constant waste, at least four ounces of flesh-forming food must be taken. A man doing hard work required about an ounce more To put 1 lb. of flesh upon a man would cost in the shape of meat 1*s.* 8*d.* or 2*s.*, in Potatos 1*s.* 4*d.*, but in Peas it could be done for about 3*d.* In conclusion, he drew particular attention to a collection in the Central Hall, in which the various constituents of all articles of food were shown.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, AUGUST, 1884.]

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN	....	Under average; good	Average; good	Not grown outdoors	Much under average; good	Much under average	Over average, except black Currants	Over average; very good	....	John Forrest, The Gardens, Haddo House
	....	....	Average; good	....	Under; good	Under; bad	Average; good	Over average; very good	....	John Proctor, Slains Castle
	Under	Over	Average	Not grown outside	Under	Under	Average; good	Over	Under	R. Farquhar, Fyvie Castle Gardens
	....	Under	Average	None outside	Under	....	Very good	Very good	....	James F. Smith, The Gardens, Dunecht
ARGYLL	Under	Under	Average	None grown outside	Under	Much under	Average; good	Average	....	G. Taylor, The Castle Gardens, Inverary
BANFF	Over; very good	Rather under average; good	Average; good	Under average; very good	Under: bad	Under; most kinds bad	Average; good	Good	....	John Webster, Gordon Castle Gardens
BERWICK	Over; good	Under; good	Under	Under; bad	Under; good	Under	Over; very good	Over; very good	....	William Richardson, Ayton Castle Gardens
CAITHNESS	Under; bad	Under; good	Average; good	....	Much under; bad	Under; good	Average; good	Average; good	....	John Sutherland, Langwell, Berriedale
CLACKMANNAN	Under	Under	Average	Under	Under	Under	Very good	Over	Under	Thomas Ormiston, Alloa Park Gardens
	....	Under average	....	Under average	....	....	Abundant	Abundant	....	James Dewar, Beechwood Gardens
CROMARTY	Average; good	Under average	Average; good	Under; bad	Under	Under; good	Average; very good	Over; good	....	J. McKay, Tarbat Gardens, Park Hill
DUMBARTON	None grown outside	Under; very scarce	Average; very good	None grown outside	Under; scarce	Under; scarce	Over; very good	Average; very good	....	Jas. Mitchell, Camis Estean, Helensburgh
DUMFRIES	....	Average	Average; good	....	Under	Failure	Over; good	Over; good	....	James Smart, Raehills, Lockerbie
EAST LOTHIAN	Over average; good	Under average	Average; good	Over average; good	Under average	Under average	Over average; very good	Over average; very good	Under average	L. Dow, The Gardens, Newbyth
	Average; very good	Under; good	Very few	....	Under; very good	Under; good	Over; good	Average; good	....	Wm. McKelvie, Broxmouth Gardens, Dunbar
FIFE	....	Under average	Average	None outside	Under average	....	Over average	Average	....	W. Henderson, Balbirnie
	Over	Under	Under	....	Average	Under	Average; very good	Average; good	....	G. Ramsay, Fordell House Gardens
FORFAR	Under average	Under average	Average	Under average	Under average	Under average	Average	Average	Under	Geo. Johnstone, Glamis Castle
	....	Average; good	Average; good	....	Under; good	Under; bad	Average; good	Average; good	....	James Mitchell, Panmure, Carnoustie
INVERNESS	Under; bad	Average; good	Average; good	Under; bad	Under; bad	Under; bad	Average; very good	Over; very good	....	Angus Macdonald, Balmacaan Gardens.
KINROSS	....	Under	Under; good	....	Under	Under	Over	Over; good	....	John Fortune, Blair Adam
LINLITHGOW	Abundant	Scarce	Average	Average	Scarce	Standards a failure	Plentiful	Good crop, but small	Good crop	W. Muir, Hopetoun Gardens
LANARK	....	Failure along the Clyde	Below average	....	Under average	Under average	Above average; very good	Above average; very good	....	Andrew Turnbull, Bothwell Castle
MIDLOTHIAN	Average; good	Under average; good	Under average; good	Average; good	Rather under average; very good	Under average; very good	Abundant; very good	Average; good	Very few; good	Malcolm Dunn, Dalkeith Gardens
	Over average; good	....	Over average; good	None outside	Under; bad	Under	Average; good	Under average; good	....	Charles Johnston, Dalhousie Castle Gardens
MORAY	Over	Very good	Average	Average	Scarcely any	Very few	Average	Over average; good	....	D. Cunningham, Darnaway Castle Gardens
NAIRN	Average	Under	Good	Under	Bad	Under	Good	Very good	....	James Manson, Kilrannock Castle, Fort George
ORKNEY	....	....	Average; good	Under	Under; good	Average	Over average	Average; good	....	Thos. McDonald, Balfour Castle, Kirkwall
PEEBLES	....	Average	Over; very good	....	Average	....	Over; very good	Over; good	....	Malcolm McIntyre, The Glen, Innerleithen
PERTH	Thin, but large fruit	Extra on walls; half on standards	Splendid fruit on walls	Very good crop	Half crop	Bad	Very good	Good	....	P. W. Fairgrieve, Dunkeld
	....	Under average; except Victorias	Full average	None outside	Nearly a failure	Under average	Very plentiful	Very abundant	....	George Croucher, The Gardens, Ochtertyre
	Under average	Average on walls; nothing on standards	Under average	Average	Under average; very few	Under average	Above average; very good	Average; very good	Under average	David Doig, The Gardens, Rossie Priory
	Under; bad	Under; good	Over; very good	Under; bad	Under; good	Under; fair	Over; very good	Over; very good	Fair	John Robb, Drummond Castle, Gardens
RENFREW	....	Under; good	Average	Average	Under; bad	Under; bad	Over; very good	Over; very good	Under	Thomas Lunt, Ardgowan
ROSS	Under average	Average	Under	Under; bad	Under	Under	Average; very good	Average; very good	....	D. Harvey, Castle Gardens, Invergordon
	....	Under; good	Average; good	....	Under average	Bad	Good	Average; good	....	J. Munro, Duncraig Gardens
ROXBURGH	Under average; good	Under average; bad	Over average; good	Under average; good	Average; good	Under average; bad	Over average generally	Average	....	John Galloway, Minto Gardens, Hawick
	Average; good	Average; good	Under	Only grown under glass	Under	Under	Average; very good	Over; very good	....	A. McKellar, Floors Castle Gardens, Kelso
STIRLING	Under	Failure	Under	Under	Failure	Failure	Average; good	Over; good	....	W. Fitzgerald, Dunmore Gardens
SUTHERLAND	....	Under	Under	....	Under	Under	Average	Under	Average	D. Melville, Dunrobin Castle Gardens
WEST LOTHIAN	Average; very good	Under; bad	Average, very good	Average; very good	Under	Under	Average; very good	Average; very good	....	John Moyes, Dalmeny Park Gardens
WIGTONSHIRE	Not generally grown	Under	Under	Not much grown	Average	Under	Over	Average	....	Archibald Fowler, Castle Kennedy, Stranraer
ENGLAND—NORTHERN COUNTIES.										
NORTHUMBERLAND	Under average	Under	Average; good	Under	Under	Under	Over; good	Over; good	Under	Thomas Bowie, Chillingham Castle Gardens
CUMBERLAND	Not grown outside	Under	Under	Not grown outside	Under	Under	Over; good	Average; good	....	J. Hammond, Brayton, Carlisle
WESTMORELAND	....	Under	Morellos good	Under	Under; bad	Under; bad	Average good	Average; good	Under	Wm. A. Miller, Underley Gardens
	....	Very scarce	Under average	Under average	Very few	Very few	Good	Average	Scarce	Edward Evans, Storrs Gardens, Windermere
DURHAM	Under; bad	Under; bad	Average; good	Under; bad	Under; good but small	Under; good but small	Average; good	Average; good	Under; bad	J. Hunter, Lambton, Fence Houses
	Under; but good	Under; very good	Average; good	Under; good	Very scarce	Not half a crop	Average	Over average; very good	....	James Larkin, Castle Gardens, Bishop Auckland
YORKSHIRE	Under	Bad	Average	Average	Under	Under	Average	Over; good	....	James Fowler, Harewood Gardens
	Average	Very bad	Not an average	Not an average	Just a crop	Under average	Very good	Very good	Under average	Joseph Shaw, Nunappleton, Bolton Percy
	Average; good	Under	Average	Average; good	Average; good	Under	Average	Average; good	Average	Robt. C. Kingston, Brantingham Thorpe, East York

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
YORKSHIRE	Moderate	Bad	Average	Good	Bad	Moderate	Good	Good	Bad	William Culverwell, Thorpe Perrow, Bedale
LANCASHIRE	....	Under average	Under average ; good	....	Average ; good	Under	Over ; good	Average ; good	....	W. B. Upjohn, Worsley Hall Gardens, Manchester
	Very few	....	Average ; good	Under	Average ; good	Under ; bad	Average ; good	Average ; good	....	W. P. Roberts, Cuerden Hall, Preston
	Average	Under ; bad	Average ; good	Under	Under	Under ; bad	Over ; good	Over ; good	....	F. Harrison, Knowsley Gardens, Prescot
	....	Total failure	Under	None grown outside	Under	Very few	Over ; good	Over ; very good	....	Andrew Jamieson, Haigh Hall Gardens, Wigan
	Not grown outside	Under	Under	....	Under	Under	Over	Average	Under	H. Lindsay, Huntroyde Park Gardens
MIDLAND COUNTIES.										
CHESHIRE	Partial crop	Very few	Morellos good others under	Under ; bad	Under average	Very few and poor	Very abundant	Average ; good	But few grown	Alfred J. Grant, Withington Hall Gardens, Chelford
	....	....	Under	Under	Under	Very few	Average ; good	Over ; very good	....	Robert McKellar, Abney Hall Gardens, Cheadle
	Under average	Bad	Good	. ..	Under average	Bad	Very good	Very good	....	Robert Milne, Vale Royal, Northwich
	Under	Under	Average	....	Under	Under	Over	Over	Over	Thomas Selwood, Eaton Gardens, Chester
DERBYSHIRE	....	Under	Over	....	Over	Under	Average	Over	....	Owen Thomas, Chatsworth Gardens
	....	Under	Average ; good	....	Average	Under	Average ; good	Average ; good	....	Joseph Dawson, Stancliffe, near Matlock
	Under	Under	Under	....	Under	Under	Average ; very good	Average ; very good	Under	Thomas Keetley, The Gardens, Darley Abbey
NOTTS	Over ; good	Under ; bad	Average	Under	Average	Under	Average	Average ; good	....	H. Carr, Welbeck Gardens
	Average	Under	Average ; good	Under	Under	Under	Average	Average ; very good	Under	S. A. Woods, Osberton Hall Gardens, Worksop
	Average	Under ; bad	Under	Under	Average ; good	Under	Average ; good	Average , very good	....	J. Edmonds, Bestwood Lodge, Arnold
	Plenty, and good	....	Plenty	Not many out-of-doors	Average	Scarce	Average	Plentiful, and fine	Under	A. Henderson, Thoresby Park, Ollerton.
SALOP	Average ; bad	Under ; good	Over ; very good on walls	Average ; good	Over ; good	Under, and bad	Over ; good	Over ; good	Average	A. S. Kemp, Haughton Home Farm, Shifnal
	Over ; very good	Under ; very good	Average ; very good	Average ; very good	Over ; very good	Under ; very good	Over ; very good	Over ; very good	Over ; very good	James Louden, The Quinta Gardens, Chirk
	Over ; very good	Under	Over ; good	Over ; very good	Average ; good	Under	Over ; very good	Over ; very good	Over ; very good	Richard Milner, Sundorne Castle Gardens, Shrewsbury
	Average ; good	Under average	Average	Average	Average	Under average	Average	Average ; good	Average	Henry Purser, Berwick House, Shrewsbury
STAFFORD	Over	Much under	Under	Over	Average	Average	Average ; good	Average	....	Wm. Davidson, Sandon, Stone
	Average	Under	Average	Average	Average	Under	Average	Over	Average	E. Simpson, Wrottesley, Wolverhampton
	Average ; good	Under average ; bad	Average ; good	....	Over average ; very good	Under average	Average ; good	Average ; very good	Average	W. Bennett, Rangemore Gardens, Burton-on-Trent
	Under	Under	Under	....	Average	Under	Average	Very good	Average	W. Ward, Little Aston Gardens, Sutton Coldfield
	Under ; good	Much under average	Average ; Morellos extra good	Under ; only a few grown outside	A good average crop	Much under average and poor	Over average and very good	Average ; good	Very few grown	John Wallis, Keele Gardens, Newcastle
LEICESTER	Average at this place	Average on walls	Over average ; only Morellos	Under average	Under average	Failure	Average ; good	Average ; good	Average	James Maclean, Beaumanor Park
	Over average ; very good	Under average	Average of Morellos	Over average ; good	Under average	Under average ; bad	Under average	Average	Average	William Ingram, Belvoir Castle Gardens
	Average	Under average	Under average	Under average	Under average	Under average	Average ; good	Average	Walnuts average ; Filberts under	Edmund Wainwright, Nevill Holt, Market Harborough
	Average ; good	Under ; bad	Average ; good	Under ; good	Average ; good	Under ; bad	Over average ; very good	Over average ; very good	Average	G. Maynard, Cole Orton Gardens
RUTLAND	Average ; good	....	Average ; good	Under	Under	Very few	Average ; good	Abundant and good	Plentiful	John Grey, Normanton Park
	Average ; good	Very scarce	Average ; good	Over average	Average ; good	Under	Abundant and very good	Average ; good	....	Henry Mason, Bisbrook Hall Gardens, Uppingham
WARWICK	Thin	Failure	Thin	Thin	Under	Failure	Plentiful	Plentiful	Plentiful	Wm. Miller, Combe Abbey, near Coventry
	Average	Under	Average	Under	Over ; good	Under	Average	Over ; good	Average	R. Greenfield, The Priory Gardens
	....	Under average ; bad	Under average	....	Under average	....	Average ; good	Over average ; good	....	Edward Cooper, Highbury, Mosely, Birmingham
NORTHAMPTON	Average ; good	Under average	Failure	Average ; promising	Under average	Under average	Over average ; very good	Over average ; very good	Average	James Trigger, Milton Park, Peterborough
	A magnificent crop ; trees healthy	A perfect failure	Sweet Cherries, failure ; Morellos, full crop	A full crop of both	Half crop ; Ribstons good crop	None of any consequence	Full crops ; fruit small generally	Excellent crops ; quality fine	A failure	R. Gilbert, Burghley
	Over average ; good	Under average	Average ; good	Average ; good	Under average	Under average	Over average ; very good	Over average ; very good	Over average ; good	Edmund Cole, Althorp Park Gardens
HUNTINGDON	Under average	Under average	Average	Under average	Under average	Under average	Average	Average	Average	Wm. Kennedy, Kimbolton Castle
BEDS	Average ; good	Under average ; good	Under average except Morellos good	Average ; very good	Under average ; good	Much under average	Average ; except Raspberries	Average ; good	Average ; good, except Walnuts	Geo. Ford, Wrest Park, Amptill
	Under	Under ; bad	Average	Average	Under	Under	Average ; good	Average ; good	....	Charles Turner, Cranfield Court, Newport Pagnell
	....	Under average ; good	Under average ; good	....	Under average ; good	Under average ; good	Average ; good	Average ; good	....	Thomas Hedley, Putteridge Park, Luton
OXFORD	Under	Under	Under	Under	Under	Under	Over	Over	Under	Isaac Watson, Nuneham Park, Abingdon
	....	Almost a failure	....	....	Under average	Under average	Over average ; good	Over average ; good	Under average	John Greenshields, Sarsden House, Chipping Norton
	Over average	Average	Under	Average	Average	Under	Over average ; very good	Over average ; very good	....	T. Doherty, Wroxton Abbey, Banbury
	Average ; very good	Under average	Under average	Under	Average ; very good	Much under average	Abundant, and good	Over average ; fine quality	Under ; Walnuts average	B. Hope, Middleton Park Gardens, Bicester
BUCKS	Under average	Very bad ; under average	Under average	Average	Under average	Very bad ; under average	Average	Average	Average	Thomas Bailey, Shardeloes Garden, Amersham
	Under ; good	Very few ; bad	Average ; good	Under ; good	Under ; good	Very few	Over ; good	Over ; good	Under ; good	Geo. Thos. Miles, Wycombe Abbey
	Very poor	....	Under average	Very poor	Under average	....	Fine	Good	Moderate ; Walnuts good	J. Smith, Mentmore, Leighton Buzzard
	Under	Under	Average ; good	Under	Under	Average	Over ; very good	Average ; very good	Average	George Haskins, Stowe Gardens, Buckingham
HERTS	Under	Under	Dessert under ; Morellos over	Over	Under	Under	Over ; good	Average	Average	George Norman, The Gardens, Hatfield House
	Good in crop and quality	Under average	Under average ; Morellos average	Good in crop and quality	Under average	Under average	Average ; good	Average ; good	Over average	Richard Ruffett, Panshanger, Hertford
	Over average ; very good	Under ; bad	Under ; good ; Morellos abundant	Average ; good	Under	Under ; bad	Abundant ; very good	Average ; very good	Average ; good	J. C. Mundell, Moor Park Gardens

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
HERTS	Over; very good	Under; bad	Under; very filthy	Abundant under glass	Average; very good	Under; poor	Over; very good	Over; very good	Average; very good	Joseph Thompson, Gorhambury Gardens, St. Albans
	Under	Under	Under	Under	Under	Under	Average; good	Average; good	Over	Geo. Merritt, The Hoo Gardens, Welwyn
EASTERN COUNTIES.										
LINCOLN	The finest crop we have had for years	Poor crop; the worst for many years	Average on walls	Heavy crop; required much thinning	Much under average	Poor crop	Under average	Good crop and fine	Moderate	George B. Tillyard, Brocklesby Park, Ulceby
	Average; very good	Under; bad	Under; bad	Average; good	Average; good	Under; bad	Average; good	Average; very good	Walnuts average; Filberts under	David Lumsden, Bloxholm Hall, Sleaford
	Average	Under	Average	Average	Under	Under	Average	Over; good	Very few grown	Thomas Vinden, Harlaxton Manor, Grantham
	Under; good	Under; bad	Average; good	....	Average; good	Under; bad	Average; good	Above; very good	....	James Taylor, Lee Hall, Gainsborough
NORFOLK	Average; small	Under	Under	Average; good	Under	Under	Under	Average	Walnuts average; small nuts under	H. Bachelor, Catton Park, Norwich
	Under average	Under average	Few grown about here	Average, but small	Under average	Under average	Good crop	Average in places	Good crops	Thomas Wynne, Wroxham Hall Gardens
	Over average; very good	Average	Over average	Over average; very good	Under average	Under average	Average	Over average; good	Average	A. Lancaster, Holkham Gardens
	Average	Under	Average	Under	Under	Under	Average	Under	Average	W. Shingler, Melton Constable
	Average; good	Under; bad	Under; bad	Average; good	Average; good	Under; good	Average; very good	Average: bad	Average; good	James Forder, Hillington Hall, King's Lynn
SUFFOLK	Over; good	Bad	Under	Average; good	Under	Under	Under	Average	Average	James Sheppard, Woolverstone, Ipswich
	Average; good	Under; bad	Average; bad	Average; good	Average; good	Under	Average; good	Average; good	Under	John Wallis, Orwell Park, Ipswich
	Under; bad	Under; bad	Average; Morellos good	Under; bad	Under; bad	Under; bad	Under; good	Average; good	Under; good	Robert Squibbs, Ickworth Park, Bury St. Edmunds
	Under average; good	Under average; bad	Morellos average, other kinds under	Average; good	Under average; good	Under average; good	Average; good	Average; good	Filberts average, Walnuts under; good	J. Mill, The Gardens, Rendlesham Hall
	Under	Under	Under	Under	Under	Under	Over	Average	Under	D. T. Fish, Hardwicke, Bury St. Edmunds
ESSEX	Under	Under	Average	Average	Under	Under	Average	Average	....	D. Donald, Knott's Green, Leyton
	Average	Under	Under	Average	Under	Under	Very good	Good	Under	W. Bones, Havering Park Gardens, Romford
	Under: bad	Under; bad	Average; good	Average: bad	Average; good	Under; good	Over; good	Average; good	....	William Smith, Birch Hall Gardens, Colchester
	Over average; good	Bloom killed by spring frosts	Average; good	Average; good	Under average	Bloom killed by spring frosts	Average; good	Average; very good	....	W. Bowman, Hylands, Chelmsford
	Under	Under	Average	Under	Average	Under	Average	Average	....	Henry Lister, Easton Lodge, Dunmow
	Under; good	None outside	Under; good, Morellos over	Under; very good	Under; good	Under; good	Average; very good	Over; good	Average; very good	James Vert, Audley End Gardens, Saffron Walden
SOUTHERN COUNTIES.										
BERKS	Average; good	Bad	Under average	Average; very good	Under average	Bad; almost a failure	Good	Very good	Under average	Thomas Jones, Royal Gardens, Windsor
	Under average	Under average	Under	Average	Under	Under	Average	Average	Average	James Tegg, Bearwood, Wokingham
	Under; bad	Under; bad	Under; except Morellos	Average; very good	Average; good	Under	Average; good	Over; very good	Under	S. Mortimer, Purley Park Gardens, Reading
	Bad	Bad	Under	Under	Bad	Bad	Average	Good	Good	Robert Fenn, Sulhamstead Abbotts
MIDDLESEX	Under	Under	Under	Under	Under	Under	Average; good	Average; good	....	Alex. Dean, Bedfont
	Over	Under	Under; good	Over	Much under	Very much under	Average; moderate	Average; good	Average	T. Baines, Fern Cottage, Palmer's Green, N.
	None grown out-of-doors	Much under average	Much under average	None grown out-of-doors	Under average	Bad	Abundant	Three-fourths of a crop	Average	T. P., Stanmore
	Average	Under	Under	Average	Under	Under	Under	Average	Under	Robert Henderson, Fulham Palace, S.W.
	Under	Under	Average; much blighted	Average	Under	Under	Average; much blighted	Average	....	John Woodbridge, Syon House Gardens, Brentford
	....	Under average; bad	Over average; very good	Over average; good	Under average; good	Under average; bad	Over average; good	Over average; very good	....	J. Willard, Holly Lodge Garden, Highgate, N.
SURREY	Over; very good	Under; bad	Over; good	Under; good	Over; very good	Under; good	Average; good	Under; good	Under	John Burnett, The Deepdene Gardens, Dorking
	Good	....	....	Good	....	....	Under average	Light crop	Light crop	W. Denning, Coombe Lane, Kingston-on-Thames
	Average	Scarcely any	Over; good	Plentiful; good	Much over average; good	Under average; good	Plentiful, fine, and good	Very fine; plentiful	Average	Alfred Evans, Lythe Hill, Haslemere
	Average; good	Under average; good	Average; good	Average; very good	Average; very good	Under average; good	Average; good	Over average; very good	Under average; good	John Tanner, Tandridge Court, Godstone
	Under; bad	Under	Under	Under	Average; good	Under	Average; good	Over average; good	Average	H. C. M'Rae, East Horsley Towers, Leatherhead
	Under; bad	Under; very scarce	Under	Under; good	Under	Under; very scarce	Average	Average	Under	James Child, The Gardens, Garbrand Hall, Ewell
KENT	Average; good	Under average; good	Average: good	Average; small	Under average; good	Under average; small	Average; small and dirty	Average; small	Under average; good	R. Gray, Chevening, Sevenoaks
	Under average	Much under average	Under average, but fine	Under average	Much under average	Much under average	A good average age	Under average; too dry	Under average	Charles Whitehead, Barming House, Maidstone
	Good	Partial; much blighted	Under; good quality	Good; much blight	Under; early sorts best	Partial; most on old English sorts	Average; Currants much blighted	Average; dried up in many places	Average; Kent Cobs promising	George Bunyard, Maidstone
	....	Very under average	Under average	Under average	Under average; good	Under average; fair	Average; good	Average; good	Over average	Henry Cannell, Swanley
	Under	Bad	Under	Average	Under	Bad	Under	Average	Under	F. Deuxberry, Cobham Hall, Gravesend
	....	Much under	Average	....	Under	Under	Under; inferior	Under	Average	John Charlton, Summer Vale Nursery, Tunbridge Wells
SUSSEX	Very good	Good	Good	Good	Good	Good	Abundant	Good	Average	John Wilson, Castle Garden, Arundel
	Average	Very good	Very good	Above; good	Under average; good	Under average	Average; very good	Average; good	Under average; good	B. Coombe, Weston Park Gardens, Steyning
	Under average	Under average	Over average; good	Average	Under average	Average	Over average; good	Over average; excellent	Average	Joseph Rust, Eridge Castle
	Average	Under	Morellos average	Average	Under	Average	Average	Average	Under	F. Rutland, Goodwood
	Average.	Under; bad	Under; bad	Average; good	Good	Under	Very good	Average; very good	Under	Geo. M. Breeze, Petworth Gardens
	Bad	Bad	Very good	Bad	Over average	Bad	Very good	Very good	Good	Sidney Ford, Leonardslee, Horsham
	Under	Under; good on walls only	Average	Average; good	Under	Much under	Average; good	Average; good	Average	John Halsey, Cowdray Park, Midhurst
HANTS	Under average	Bad	Under average	Under average	Under average	Much under average	Partial	Abundant, and fine	Good	Philip Edwards, Fowley Gardens, Liphook
	Under average; bad	Under average	Early sorts bad; Morellos good	Average; very good	Under average	Under average	Above average; good	Above average; good	Average; bad	William Smythe, The Gardens, Basing Park, Alton
	Under average; good	Under average; bad	Average; very good	Over average; very good	Under average; good	Very few indeed; bad	Over average; good	Over average; very good	Average	W. Wildsmith, The Gardens, Heckfield Place

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APRICOTS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APPLES.	PEARS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
HANTS	....	Under	Over; good	....	Over; very good	Average; good	Average; good	Average; good	....	T. D. Myles, The Gardens, Appley Towers, Ryde
	Under; good	Under	Under	Average; good	Under; good	Under	Average; good	Over; good	Under	F. Thirlby, Broadlands, Romsey
WILTS	Very good	Good	Good	Bad	Under average	Bad	Very good	Good	Under average	Wm. Phipps, Bowood Gardens, Calne
	Under average	Under average	Under average	Average	Under average	Under average	Average; good	Average; good	....	J. Horsefield, Heytesbury, Wilts
	Under average	Under average	Under average; bad	....	Under average	Under average	Over average; very good	Over average; very good	Under average	Thos. King, Devizes Castle
	Under average	Very bad	Under average	Average	Very bad	Very bad	Average; good	Average; good	Under average	H. W. Ward, Longford Castle Gardens, Salisbury
DORSET	Under	Under	Under	Good	Under	Under	Good	Good, and very fine	....	J. Saltford, Ilsington Gardens, Puddletown
	Under average	Bad	Bad	Bad	Average crop	Bad	Good	Very good	Bad	C. Hazel, Leweston Gardens, Sherborne
	Average	Average	Under average; bad	Average; good under glass	Under average	Under average; bad	Good	Very good	Average; good	William P. Leach, Bryanston Gardens, Blandford
WESTERN COUNTIES.										
HEREFORD	Over average; very good	Under average	Average; good	Average; good	Over average; very good	Under	Over average; very good	Over average; very good	Average	Arthur Ward, The Gardens, Stoke Edith Park
	Average; good	Under	Morellos average; others under	Fair	Over; good	Under	Average; very good	Average; good	Under	Charles Denning, Holme Lacy Gardens
WORCESTER	Over; good	Under; bad	Average; good	Average; good	Average; good	Under; fair	Over; good	Over; good	Average; Walnuts over	Arthur Barker, Hindlip Gardens, Worcester
	Average; good	Bad	Under; Morellos good	Under	Good	Bad	Abundant	Good	Under	Robert Palmer, Hagley Gardens, Stourbridge
	Over; good	Under; bad	Over; good	Average	Over; very good	Under; bad	Over; good	Over; good	Average; good	Walter Child, The Gardens, Croome Court, Severn Stoke
	Under; good	Under; bad	Under; bad	Average; good	Over; very good	Under	Average; good	Over; good	Under	William Crump, Madresfield Court, Malvern
	Under average; good	Under average; good	Average; good	Average; good	Average; good	Under average; good	Over average; very good	Over average; very good	Under average	John Austen, Witley Court Gardens, Stourport
GLOUCESTER	Over average; good	....	Morellos average; good	Average; good	Average; good	Much under average; bad	Average; good	Over average; good	Under average	Alexander Scott, Sherborne Gardens, Northleach
	Under average	Very bad	Morellos good	Bad	Average	Under average	Over average; good	Over average; fine	Average	S. Wathen, Kingscote Park
	Average	Bad	Average; Morellos good	Under average	Half a crop	Bad	Good	Over average	Bad	G. Turner, Fretherne Court, Stonehouse
	Average; very good	Under average; bad	Average	Average; good	Average	Under average; bad	Over average; very good	Average; good	Average	John Sowray, Highnam Court Gardens
MONMOUTH	Over; very good	Under; bad	Under; good	....	Average; good	Under; bad	Average; good	Average; good	Over	Thomas Coomber, The Hendre
SOMERSET	Under	Under	Average	Average	Average	Under	Good	Average	Under	William Hallet, Cossington Farm, Bridgewater
	Very good	Scarce	Failure	Very good	Average	Under average	Plentiful and good	Abundant	Under average	Wm. J. Rowley, Kingsweston House, Somerset
DEVON	Very scarce	Very few	Average; good, Morellos under	Under	Under average	Much under; good	Abundant and good	Average; good	Over; good	Alexander Ayson, Oxton Gardens, Kenton
	Average; very good	Under; bad	Under; good	Average; very good	Slightly under average; very good	Under	Average; very good	Average; good	Walnuts average; good	David C. Powell, Powderham Castle, Exeter
	....	Average	Very good	Average	Over average	Under average	Very good	Very good	....	F. Geary, Eggesford Gardens
	....	Under average	Average	Moderate	Partial	Under average	Abundant; very good	Plentiful; good	....	Geo. Baker, Membland, Plympton
CORNWALL	....	Under; bad	Average; good	Under; small	Average; good	Under; good	Abundant; very good	Abundant; very good	Under; bad	Charles Lee, Boconnoc, Lostwithiel
	Few grown	Under	Average; good	Under; good	Under; good	Average; very good	Over; very good	Under; very good	Under	James Murton, Pencalenick, Truro
	....	Under	Average	Under	Average	Under	Over; very good	Over; very good	Under	George Knox, Port Eliot, St. German's
WALES.										
BRECON	Under; very good	Under; bad	Morellos average; good	Under; very good	Average; very good	Under; bad	Average; very good	Over; good	Under; very good	A. Ballard, Glanusk Park, Crickhowell
CARMARTHEN	Very few trees grown	Under; bad	Under average	Under average	Under average	Almost a failure	Very good	Excellent, and of good quality	Under	Lewis Bowen, Edwinsford, near Llandilo
CARDIGAN	Do not succeed here	Under; good	Average; good	Average; good	Under; good	Under; good	Average; good	Average; very good	Average	Henry Howard, Castle Malgwyn
CARNARVON	....	Under	Average	Under	Under	Under	Average	Average	....	Allan Calder, Vaynol Park, Bangor
	Under	Under	Under	....	Bad	Bad	Very good	Very good	....	W. Speed, Penrhyn Castle, Bangor
GLAMORGAN	Thin	Very heavy crops	Morellos excessive; others none	Moderate crops	Moderate crops	Moderate crops	Immense crops of all	Immense crops of all	....	J. Muir, Margam Park, Taibach
MERIONETH	Under	Average; good	Over average	Average	Average; good	Under; bad	Over; very good	Average; good	Under	Jas. Bennett, Rhug Gardens, Corwen
MONTGOMERY	Under	Under	Under	Under	Average	Under	Over	Over	Under	William Lee, Powis Castle Gardens, Welshpool
PEMBROKE	....	Over average	Average	Under	Under average	Bad	Over average	Good	Average	Geo. Griffin, The Gardens, Slebeck Park
IRELAND.										
ANTRIM	....	Under	Average	....	Bad	Under	Good	Good	....	Geo. Porteous, Garron Tower
CARLOW	Under	Over	Over; good	Under	Average	Under	Over; good	Over; good	Average	Thomas Bennett, Oak Park, Carlow
CAVAN	....	Over; good	Under	Under; late	Under; bad	Under; bad	Under; good	Average; good	....	P. J.
CLARE	....	Average	Under	Average	Average	Under	Over	Over	Under	W. Wilson, Dromoland Gardens
CORK	....	Average	Average	Average	Under	Under	Full average; very fine	Average; good	Under	W. Osborne, Fota Island
DUBLIN	Under; bad	Average; good	Over; good	Under; bad	Average; good	Under; bad	Average; good	Average; good	Under	J. Ellam, Brenanstown House, Cabinteely
FERMANAGH	Under average	Average; good	Average	Average	Under average	Under average	Average; good	Very good	Under average	William Magee, Florence Court, Enniskillen
KILDARE	Under	Under	Under	....	Average	Under	Over	Average	....	Philip Wadds, Moore Abbey Gardens
KILKENNY	Very few	Over; very good	Average; good	....	Under	Much under	Average; very good	Average; good	Under	William Gray, Woodstock Park, Inistioge
WESTMEATH	Under; bad	Under average	Average; good	Under; bad	Under; good	Under average	Average; good	Average; good	Under; good	J. Igo, Gardenvale, Athlone
CHANNEL ISLANDS.										
GUERNSEY	Under	Average	Average; good	Under	Average	Average	Over; good	Over; good	....	C. Smith & Son, Caledonia Nursery
JERSEY	Under	Under	Under	Average; good	Average; good	Average; good	Average	Over	....	Charles B. Saunders, St. Saviour's
SCILLY ISLES	Under	Under	Average	Average	Average	Average; good	Over; good	Average; good	....	Edward Pond, The Vineries
	....	Average	....	None grown in open	Below average	Under average	Average	Under average	....	Geo. D. Vallance, Tresco Abbey Gardens

MOSCOW BOTANIC GARDEN.

I was much interested in this establishment, which, though not large, is well worth a visit. The Orchids, to my mind, form the principal feature. There were many choice kinds in flower, and the collection is well grown—being, indeed, on the whole, the best we found in Russia. The labelling is very well attended to, and a very useful reference is given on each label to the best figure of the plant to which it is attached. It seems a very good idea, and it no doubt facilitates verification when the plants are in flower. It is easy always to turn to Pritzel, but with the suggestion on the label to which we allude it is probable that figures are more often consulted than they would be without this ready help. It is more useful than the authority of the name, which so often is given on the label and so rarely noticed or made any use of.



Fig. 29.—Morina coulteriana.

I noted a large specimen of Sobralia macrantha, and of the kinds most worth notice in flower were Cattleya Skinneri, Saccolabium guttatum splendens, with very fine spikes; Chysis Limminghei, Cypripedium villosum, Brassia maculata major, and Leptotes bicolor; but there were others, also fine, which to name would make too long a list, and they would be familiar to Orchid cultivators. A fine Vanda gigantea, not in flower, I could but remark for its superior development. I could not make a close inspection of the houses severally, as time was short, but it was easy to see that the collections are choice.

The collection of succulents is good, and there is a house devoted to Coniferæ which, as a collection, require greenhouse culture. Eugenia Glazioviana, a not common species, attracted my attention from its exceedingly graceful habit; Ramondia pyrenaica was in flower, and forms a very good pot plant for the greenhouse. In one of the houses I found the finest specimen I have seen of Combretum Afzelii. It was not in flower, and flowers I do not remember to have seen. Parenthetically it may be remarked that any one who succeeds in blooming it should bring the event to notice, as, so far as we are aware, it has not been figured. In the Palm-house are some of the best kinds, and a specimen of Pritchardia magnifica amongst the rest is very fine. The new Cyphomandra argentea, introduced in 1880, I had not seen before. The plant was not large, but it appears to be not unlike C. betacea in habit. The leaves are elliptical, and have a silvery upper surface broken with green veins; the under surface is purplish, and the plant is ornamental and distinct.

Of the outdoor plants I was most struck with a fine specimen of Scorodosma fœtidum in the herbaceous department. Botanical readers may be interested to know that a new laboratory has been built, which though not large, is convenient and valuable for the work that is carried on. It is entered from the herbarium, where we noticed that the specimens are all contained in those old-fashioned book-like cases.

Hospitality was the order of the day in Russia, but I cannot omit to mention the hearty reception accorded by Dr. J. Goroshankin, the Director of these gardens. *W. J. L.*

MORINA COULTERIANA.

Though not the handsomest of its race, this is an acceptable herbaceous plant, native of the sub-alpine Western Himalayas. It is a tall-growing plant (2 to 3 feet), with Thistle-like foliage and yellowish flowers, each rather less than 1 inch in length, and suggestive of those of a Labiate, though really it is in the Teazel family that we must seek for its allies. The two-lipped flowers, each containing only two stamens, are not what we should look for in Teazels (Dipsaceæ). The curious involucel and ovarian characters, however, amply justify its position among the Scabiouses and Teazels. Our illustration (fig. 29) is from a sketch by Mrs. Dyer.

The Propagator.

The Propagation of the Different Varieties of the Aucuba, Holly, Ivy, Laurel, and other Hardy Plants.—In most gardens of any extent are to be found places which would be improved by being planted with shrubs; this in many cases would be done, but for the cost of buying in the stock. Such an obstacle could easily be removed if a little trouble and attention were exercised to produce the requisite material. The first requirement is a frame, which can be constructed in the following simple manner, and which, though rough, will serve all the purposes of one of elaborate workmanship. The best position for it would be under a north wall, against which three small posts should be driven into the ground at equal distances, but proportioned to the width of the lights. These posts should be 15 inches above the ground, and a piece of board 1 inch thick and 6 inches wide can be nailed flatwise along the tops of them to rest the top end of the light upon. At the bottom end, which will be distant from the wall the length of the light, three strong wooden pegs should be secured to the ground, and to these on the outside should be nailed lengthwise a board 1½ inch thick, as long as the width of the light, and 1 foot wide. To strengthen this a piece of board should be nailed to the top of the middle of the frame and to the middle of the bottom. The sides can either be banked up with turfs or boarded up. On the same plan any required length can be made. Now with regard to the internal arrangement. Sifted cinder ashes 2 inches

deep should be placed at the bottom, upon this a 4-inch layer of soil made up as follows :—The old soil which had been used for potting purposes (but now cast on one side as worthless) sifted through a ½-inch sieve and well mixed with a barrowful each of maiden mould and river sand. The soil should be levelled and made firm with a spade ready to receive a ½-inch layer of river sand. The light can now be placed upon the top of the frame which is ready to receive cuttings.

Aucuba japonica.—The cuttings of this plant should be taken off ripe wood only, and in this case the top cuttings are the best. None of the strong shoots should be taken but those of medium growth and well finished up. These strong pieces, which should have two sets of leaves on, and a joint at the bottom of every cutting, must be taken with a sharp knife and cut off below a joint. The knife should be drawn across the bottom of the cutting, leaving a slight indentation in the shape of an X. This plan should be followed with regard to all large cuttings, and it will be found that they will root more freely. They can be dibbled in to the depth of 2 inches in the frame, and firmly pressed in and well watered. With regard to the distance they should be placed apart the propagator must be guided by the size of his cuttings, but most of the hard-leaved varieties do well when placed in thickly.

Common Laurel.—Pieces should be selected of the summer's growth, which are fully developed and quite hard. They should be strong pieces, with four to six leaves on each cutting, and they should be cut off at the leaf-joint. Place them in the frame firmly, and well water them.

Common Ivy and its Varieties.—For cuttings of these plants the top and side-shoots should be taken, because cuttings put in without a leading growth often remain in the cutting state for twelve months before they commence to grow. Pieces 6 inches long should be selected, and after taking one or two leaves off the bottom of the stem, the end of which should also be cut off with a sharp knife, they can be dibbled into the pit to the depth of 2 inches, and tolerably close to each other.

Holly and its Varieties.—For cutting purposes in this case the side growths and smaller shoots of the plant should be chosen. They must be quite ripe and hard, and can be cut in lengths of 3 to 4 inches, and must be dibbled into the soil about 1½ inch deep. Each cutting must be firmly pressed in its place and watered.

Ampelopsis Veitchii.—Again, choice should be made of ripe wood for cuttings, which should be 6 inches in length, and cut below the joint. Dibble in as above.

The cuttings of all the plants above-named, and others of a like nature, may be taken during the months of July, August, September, and October, but the great thing to be borne in mind is, what we have many times pointed out, that the hard or ripe wood only will make good cuttings.

Treatment.—For the first fortnight the cuttings should be sprinkled overhead with a fine rose pot every morning, giving them air on bright days, and shading them with an old mat or piece of canvas. The dead leaves should be taken off occasionally, but great care should be taken not to disturb the cuttings. They must stay in the frame until they are well rooted, and then they can be potted off (potting is the best plan for Ampelopsis, Ivies, &c., as they grow freer when planted in the places where they are wanted from pots), or planted out in a 4-feet bed, each plant 6 inches apart. The climbing varieties should be supported by a stick. *T. O.*

(*To be continued.*)

Nemophila atomaria atro-cœrulea. — This fine new variety of Nemophila gives to flower gardeners a lovely hue of ultramarine-blue. A large patch of it may be seen in full bloom in Mr. Samuel Barlow's garden at Stake Hill. It has a compact spreading growth, and is singularly free of bloom, even for a Nemophila ; it is of a rich deep hue of blue—no coloured illustration we have seen of it does justice to its particular shade of colour—a hue of glorious blue wanted in flower-gardens, and which is in no way impaired by reason of the presence of a zone of black-purple round the small white centre. This fine Nemophila seems peculiarly fitted to display its beauty in the cool moist climate of Lancashire.

The Arboretum.

Spruce and Silver Fir.—Evelyn, good observer as he was generally, had not recognised the difference between the male and female blossom of Firs ; for in his *Silva*, 3d edit., p. 102 (1679), he says "There are of the Fir two principal species ; the male, which is the bigger tree, most beautiful and tapering, and of a harder wood and more hirsute leaf [the common Spruce], and one sort which they call the Spanish Fir bears its leaf like the Rosemary, with a white rib underneath, and this I suppose to be the female, which is much the softer and whiter." Referring to the trees growing in Harefield Park, Middlesex (belonging to Mr. Serjeant Nudigate), "where there are two Spanish, or Silver Firs, that at two years' growth from the seed, being planted there Anno 1603, are now become goodly masts : the biggest of them, from the ground to the upper bough, is 81 feet, though forked at the top, which has not a little impeded its growth : the girt or circumference below is 13 feet, and the length (so far as is timber, that is to 6 inches square) 73 feet, in the middle 17 inches square, amounting by calculation to 146 feet of good timber : the other tree is indeed not altogether so large, by reason of its standing near the house when it was burnt (about twenty-two years since), when one side of the tree was scorched also ; yet it has not only recovered that scar, but thrives exceedingly, and is within 8 or 9 feet as tall as the other, and would probably have the better of the two, had not that impediment happen'd, it growing so taper and erect, as nothing can be more beautiful."

The Scots Pine.—I am delighted that you have once more brought this tree before the public as deserving of extensive planting, for, after all, I do believe it is the best tree for general planting. I think the Austrian Pine for very exposed places beats it for shelter, but not for timber ; and the Corsican Pine (Pinus Laricio) in sheltered valleys will rush into timber, but in exposed places it blows over directly, as it forms so few roots. Many persons imagine that the quality of the timber of the Scots Pine is the same whether planted on boggy, ill drained land, or on comparatively dry, breezy knolls, but that is not so. Years ago I took some pains in proving this, and can safely say that there is no comparison between the quality of the trees grown under the different conditions. When the situation is damp the ground should be ditched, to carry off the superabundant water. The growth is slower, but the quality is excellent. I know spots on Dee side where the timber, when cut down, was like Pitch Pine. Then, again, there is a spurious variety in the market raised from seeds collected in Germany, and which is not so good as our true old red-stemmed Highland Pine. My advice to planters is, give the upland to the Pine and the Larch, while low-lying or moist spots can be planted with Spruce, or, if stiff land, with Poplars. *J. Rust, Eridge Castle, Sussex.*

FLOWERS IN SEASON.

From Mr. Burbidge, Trinity College Gardens, Dublin, come—

Bupleurum fruticosum, a singular shrubby Umbellifer, with evergreen, leathery, oblong obtuse, deep green leaves, and umbels of yellowish flowers, fit for the gardens of the curious.

Centaurea macrocephala.—A grand perennial plant, with stout erect stems, rough lanceolate leaves, and large heads of flowers, like those of a gigantic Thistle or Artichoke, but the flowers are yellow, and the bracts are brown and toothed like a fine comb.

Chrysanthemum Hebe. — A summer-flowering variety, with small rosy-lilac flower-heads ; very pretty, but we do not want Chrysanthemums in July.

Eryngium giganteum. — A fine plant, quite architectonic in character. The rigid glaucous leaves are spine-toothed, the flower-spikes cylindrical, packed with small blue flowers, which reveal their Umbelliferous character, concealed though that be in the stalk and foliage. A good test plant for the students of "T. C. D."

Smilax aspera.—A trailing climber, with hook-beset stems, and leathery hastate leaves, dark green mottled with silver. The profane would call it a "kind of Ivy," at least we heard it so called at Genoa once. The wise ones know better.

Aster Cabulicus.—A shrubby species, with much branched erect stems, narrow lanceolate leaves, and numerous small flower-heads of bluish flowers surrounded by small linear bracts.

Coronilla varia.—A very pretty leguminous trailer, with heads of pale rosy-lilac flowers, and unequally pinnate leaves. Mules and tortoises eat it greedily. Mr. Burbidge is warned accordingly.

Orchid Notes and Gleanings.

Cypripedium Lindleyanum (Rob. Schbgk., Lindl., *Gen. Sp. Orch.*, p. 531 ; Selenipedium Lindleyanum, Rchb. f., *Xenia*, i., p. 3).—As early as October, 1840, this species was described by Dr. Lindley. Let our excellent orchidic patriarch speak himself :—"I unwillingly consent, at the particular instance of Mr. Schomburgk, to allow this plant to bear my name, who have no title to the compliment. It is a most remarkable species, with green, stiff leaves, smooth and bordered with yellow. The stem is 2 feet high, panicled, and covered with large, hooded, erect scales and bracts, which are of a pale brown colour, and densely clothed with brown glandular hairs. The sepals and petals are of the same colour, but the lip is dull green, with the sides streaked with the same colour, and the border turned inwards and downwards ; its sides appear to be brought together as if the labellum were compressed. The sterile stamen and stigmatic part of the column are covered with stiff hairs or bristles." There is among the drawings of Sir Robert Schomburgk a fine sketch in water-colours, made *in loco* during my celebrated countryman's journeys, kindly submitted for my use by Mr. Carruthers, of the British Museum. The roots are represented very thin and red. Peduncle light red. Sepals and petals red, with darker veins. Lip green, with darker veins. Staminode yellow, with red. Now, after nearly half a century, the Lindleyan plant is alive in Europe, in Mr. F. Sander's hands, sent by Mr. Seidl. I am not enabled to judge the living plant, but the dried materials just at hand teach me undoubtedly that Mr. Sander has the very thing. My elder specimens are from Sir Robert Schomburgk, 1842, No. 727, and Mr. Richard Schomburgk, 1842, No. 1097. I may only add that the fine undulations of the petals were overlooked till now. *H. G. Rchb. f.*

Fruits Under Glass.

Vines.—The very hot weather which recently prevailed may have, in some cases, rendered the use of fire-heat unnecessary ; where such a course has been followed, and firing has not been resumed, it should, now the weather has changed and continues unsettled, no longer be withheld, for such a practice would subject the Vines to an attack of mildew, by affording an atmospheric condition in which this destructive parasite might spontaneously appear. It is the most to be dreaded in low moist situations ; but even in these it does not often affect Vines providing a warm buoyant temperature is kept up, the ventilation properly attended to, and atmospheric moisture maintained with discretion. Should it however appear, there should be no delay in effecting its extinction, for if left unchecked it runs over the foliage and bunches with amazing rapidity, working irreparable injury. Its destruction is readily effected by the aid of flowers of sulphur, which may be applied in the form of paint upon the pipes after they are made hot upon a fine day, when a free circulation of air to distribute its fumes can be admitted. As the fruit is cleared from successional houses of Hamburghs, &c., the secondary lateral growths which were allowed to extend during the time the fruit was ripening may be shortened in, while the older foliage should be carefully preserved by being cleansed of insects by a forcible use of the syringe or water-engine.

Where the wood is imperfectly matured, a warm day temperature must be kept up in conjunction with

a genial current of air until it is perfected. The night temperature for late houses in which the fruit is commencing to change for ripening should not be permitted to drop below 65°, a steady circulation of air should be maintained both night and day, the amount of atmospheric moisture be gradually reduced, and the young growths allowed to push forward without a check, except those that are very robust, which should be entirely removed or stopped, according to the condition in which the Vines are furnished with foliage. The use of liquid manure must be discontinued, but the borders preserved in a moist state with clear water. See that young Vines are also properly supplied with water at their roots, and that no impediment arises from any other cause; use the syringe sufficiently to keep insects in subjection, stop the extension of growth when the limited trellis space is covered, and employ artificial heat until the wood is well matured and hardened, when a dry atmosphere should be kept.

Strawberries.—At the time when Strawberry plants commenced to push forth their runners the outlook, owing to the drought, of securing a bountiful supply of strong healthy young plants for potting and planting out other than by entailing much extra work was not a bright one; in our case, however, the much needed warm showers came just in time to change our prospects, promoting a vigorous growth, and giving us a satisfactory start for the ensuing season. We would advise those who have not tried the system of planting out young plants early in August for the purpose of affording runners to do so, and test for themselves the superiority of the plan over that of relying upon older plants, for not only are the runners earlier and stronger upon young plants, but owing to the parent plants being of moderate size they have the advantage of being in no way drawn, as the others invariably must be through being in a measure crowded by the older plants when layered between the rows. By securing a robust set of young plants the first step in successful culture is gained, and a satisfactory result is therefore more easily secured than is possible from plants having weak attenuated leaf-stalks and weak crowns. We have known cultivators, besides depending upon old plants for offsets, leave the layering of them until after the crops of fruit were gathered, and thus unreasonably limit the time for the plants to establish themselves, to properly fill their pots with roots, or to mature their crowns; satisfaction from such a mode of treatment cannot consistently be expected. Where the shifting of plants into their fruiting pots is not completed it should be followed up with all possible speed as they become fit for the operation; discard any that have the appearance of being blind, and see that enough room is left upon the surfaces for the reception of sufficient water to moisten the balls of soil through when dry. Over-filling the pots would be a needless and continued source of inconvenience. In selecting a site for grouping the plants upon beds of ashes, preference should be given to one possessing a decline to the south, so that the rows may be arranged in tiers, and the crowns of all the plants be consequently fully laid bare to the sun. Pots of Vicomtesse Héricart de Thury that have been kept over and are being grown on for autumn use should have their early blossom-spikes removed and those left which show later that will ripen their fruits at the time desired.

Pines.—Notwithstanding the present changeable state of the weather making the work of shading somewhat irksome, it should be properly conducted, so as to prevent the sudden and powerful gleams of sunshine disfiguring and crippling the young foliage which has not been inured to it, or to avoid it being drawn up weakly through the shading being kept on when unneeded. Now that early fruits are gathered, and there is spare room in the compartments which have been devoted to them, any young plants which have recently been shifted into their fruiting pots, and unavoidably crowded together from want of adequate room, should be replunged and allowed the requisite space, *i.e.*, 2 feet apart, to enable them to develope their growths, which, providing their surroundings are satisfactory, will now make very rapid progress. Let every encouragement be afforded them by keeping a high, moist temperature, with enough ventilation to keep the plants sturdy and prevent a sappy, unfruitful condition.

On sunny days the temperature may safely reach 95°, and the structures should be closed at that degree of warmth. The Queens which were potted in February, having now made considerable root progress, should have all suckers that show removed, and be attentively watered with clear diluted liquid-manure. Although it is necessary to caution the inexperienced cultivator against over-watering, which is a most injudicious practice to follow, it is equally needful that the opposite extreme should be guarded against; instances have come under our own observation where to escape the evil consequences of the former the latter error has been fallen into, and serious results thereby incurred; no pains should therefore be spared to preserve the balls of soil in which are young plants in a moderately moist state—neither dust-dry nor sodden—by only watering a plant after it has been ascertained by close examination that it is really in need of it, and then giving enough to moisten the entire ball.

The last batch of Smooth Cayennes and Charlotte Rothschilds should be shifted into their fruiting pots not later than the beginning of September, and be kept moving gently through the winter, to come in for use the following winter; and if a lot of these varieties are started into fruit now they will ripen in the late winter or early spring months—a time when they are generally found very useful. Suckers being usually plentiful at this season, it is a convenient time to procure desirable varieties; it is not necessary, however, to have many kinds in order to keep up a constant supply of ripe fruits, which can be satisfactorily managed with Ripley or other good Queens, Smooth Cayennes, and Charlotte Rothschilds. For the sake of novelty, however, we like to grow a few others, and are now testing Lord Carrington and Lady B. Lambton. *Thomas Coomber, Hendre Gardens, Monmouth.*

Plants and their Culture.

Stove Fine-foliage Plants.—The stove will now be rendered effective by many of these useful subjects. With the additional room that is gained by distributing some of the specimens of either foliaged or flowering plants throughout the other houses greater facility will be afforded to display such as are left in the stove proper to better advantage. The Crotons will be found among the most useful of this section of stove plants; in order to intensify the beautiful hues of colour to be found in the various kinds now in cultivation but little shade should be used to screen them from the sun's rays. In following out this advice the better plan will be to keep them apart from shade-loving plants, such as Alocasias and Marantas. This can be done in most cases without much extra trouble to the cultivator. A close watch will, however, need to be kept against injury to the tender foliage that is being developed by the rapid increase of red-spider under such conditions; a free use of the syringe at least four times daily will keep this insect in check. Fine-foliage plants of the stove section delight in an abundance of atmospheric moisture, but none more so than the Crotons. Syringe them then both in the morning, at closing time, and just about leaving-off time, also again the last thing in the evening. The extra attention will be amply repaid by the clean growth which is made by plants that are in a healthy state. The rapidity with which a half specimen or even a specimen plant can be grown under favourable conditions entirely does away with the necessity of attempting to renovate a plant that is in a sickly state. Both in the case of these and other plants, too, that occupy valuable space, it would be far better in many instances to be somewhat resolute and determined when they have ceased to be as effective as they should be, and cast them on to the rubbish-heap rather than attempt to patch them up for a season. There is more pleasure, we think, in growing a plant to a certain degree of perfection from a small state, watching its development as it expands in size, than can ever be obtained in hoarding up plants just because they once were perfect specimens, but are now far past their best.

Some cuttings of clean, well developed shoots, with good colour in their foliage, should be chosen from among the Crotons and inserted singly in small pots; "Long Toms" are very good pots for striking cuttings of such as are intended for future use as table plants. As soon as the cutting pot has become well filled with roots the young plant should be gradually inured to the ordinary course of treatment. After this has been obtained a shift into a 4-inch pot may be advantageously given; then in a few weeks' time there will be an excellent table plant. The point chiefly to be observed in these and other choice cuttings is to retain the foliage close down to the pot. When this shift is being given the future effect of the plant when required to decorate a table is greatly enhanced by dibbling in a few pieces of Selaginella Kraussiana (denticulata) on the top of the fresh soil, where it will quickly take root. In conjunction with the Crotons, the Dracænas form a large family of useful decorative stove plants, and are well worth a little extra attention, especially in guarding against depredations by the peculiar kind of thrips with which they are affected in many cases; frequent sponging with a weak solution of insecticide is a sure remedy. A dark coloured species of Aphis is partial to the young leaves not yet unfolded; these insects can be easily removed with a camel's-hair brush. D. Bausei is proving itself to be a valuable kind; so far with us it possesses the desirable quality of retaining its foliage in perfection a greater length of time than in many of the newer kinds. It is richer in colour than D. Cooperi, dwarfer and more compact in habit, and the foliage of good substance. Propagation of the Dracæna had better be deferred to later on, when more bottom-heat can be obtained, as the fires are more pressed during the colder nights, thus increasing the temperature of the plunging medium. Do not, however, overlook some of the grass-like growths of Pandanus Veitchii that are showing a disposition to colour well; each one may take several more months to form itself into a plant fit for use, but when it is once obtained it will be worth a dozen, with erect or semi-erect foliage, such as may be seen in the case of large cuttings.

Thin out the older foliage of both Alocasias and Anthuriums, in order to leave room for the proper development of the young leaves, which if now allowed to perfect themselves as they should do, will be ornamental objects throughout the winter months. Look also pretty sharply after any symptoms of attacks from either red spider or scale: the Anthuriums will be found rather more subject to the latter insect than the former. Remove all flowering spathes before becoming fully grown, except in the case of Anthuriums that are cultivated for the beauty of these alone. Give every possible attention to the culture of Asparagus plumosus nanus and A. tenuissimus; these are valuable plants for supplying cut sprays at any season of the year, but more particularly during the winter months. Then they will be found to far surpass the hardiest Fern in durability, effecting a great saving in the otherwise severe usage that the Ferns receive during that season. If any quantity of furnishing material is likely to be wanted during the winter in small pots, it would be a good plan to put in a good stock of Ficus repens; several cuttings in a 4-inch pot will soon make useful stuff for use in finishing off the edge of groups and the like. The same also should be provided in plenty of the Selaginella previously quoted in this Calendar, and its golden-tipped variety. Panicum variegatum, Isolepis gracilis, Fittonia argyroneura, Sonerillas in variety, and Tradescantias are all useful decorative plants, which pay for being grown in good quantities. Make the most, too, of any crowns of the variegated Pine-apple (Ananassa sativa variegata); they are very pretty vase plants in a small state, but require to be grown near the glass to keep them compact. The Phyllanthus furnishes a distinct type of foliage plant, especially P. nivosus and P. roseo pictum, both of which are of easy culture and free growth.

Greenhouse Fine-foliage Plants.—Amongst these Ficus elastica is still one of the best, and any cuttings that can be hunted up without injury to the plants will prove to be useful stuff when established. In the case of a tall, overgrown plant, the top or side shoots can all be taken off for cuttings, and the remainder of the wood be cut up and inserted the same as Vine eyes, retaining the foliage when in a fresh condition. On a par with the Ficus is that useful plant for knocking about almost with impunity, viz., Aspidistra lurida variegata; this is easily increased by division. We find this plant of great value in filling up odd corners in the conservatory, thriving where most plants would barely live. Should a plant of the greenhouse Yuccas have become too tall, it may be taken off close up to the lower foliage, removing any of the latter that would in all probability die off, and then inserting the head securely in a 6 or 8-inch pot, and place in a moderate heat where it will strike fresh root in a few weeks. Remove it before top-growth commences, otherwise the same will become unduly elongated. *James Hudson, Gunnersbury House Gardens, Acton, W., July 29.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug 4	Flower Shows at Westwood Park, Southampton; Sefton Park, Liverpool; and Northampton.
WEDNESDAY,	Aug 6	Sale of Imported Orchids from Burmah, at Stevens' Rooms
THURSDAY,	Aug. 7	Sale of Imported Orchids, at Stevens' Rooms. Sale of Plants, Greenhouses, &c., at The Hall, Stamford Hill, by Protheroe & Morris
FRIDAY,	Aug 8	Flower Show at Bishop's Auckland. Sale of a new Aerides and other Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Aug. 9	Matlock Bath Flower Show.

THERE are few flower shows held anywhere now at which may not be seen the usual decorative PLANT GROUPS. These efforts of the taste of the arranger have, in fact, become stereotyped classes in nearly all schedules, and it is almost certain that should one or two well-known exhibitors compete those particular ones will win. These groups originally were exceedingly interesting, and gained much popularity, but as time wore on and the public became almost surfeited of them, their interest declined, simply because they now exhibit no variation in form or material, indeed those who have seen half a dozen at any fairly good show do but see *fac similes* of hundreds more such groups in any part of the kingdom. It thus happens that the monotony incidental to such exhibits tells against shows, for the public decline to visit where they know so well beforehand just what sort of objects will be provided for their delectation.

Whilst the style of arrangement remains about the same in hundreds of groups, some slight divergence may be found in the character of the flowering plants employed, while in foliage plants there is practically none, and that exhibitor who has the most showy exhibits has, as a rule, the advantage. But having seen groups in diverse places and for several years, the exhibitor naturally obtains and grows, as far as he can, just those plants which seem most favoured in group decoration, and thus it comes about that in nine cases out of ten the nature of the exhibits is pretty much the same, the difference in the groups being mostly found in some slight advantage in arrangement. We think most frequenters of flower shows have begun to wish for some change in the nature or general character of these decorative plant groups, but perhaps find it easier to complain than to suggest some variation that might be found acceptable. But do not exhibitors themselves feel that some change is desirable? We know that when originally introduced these groups were favoured because they met the capacities of those small gardeners who, being unable to grow specimen plants, could yet put up a decent group of ordinary greenhouse plants in this decorative form.

On the other hand, it was pleaded, and with some force, that these groups would best serve to encourage the growth of inferior plants, because in the ordinary arrangements it was not possible to favour handsome specimens—that, indeed, these would prove unsuitable, and were much less desirable than thin plants that would work in anywhere and accommodate themselves to any position. There was much truth in both sides of the discussion, but the whole thing has now pretty well worn itself out and some fresh break or start that would be at once novel and attractive, yet of great service to gardeners generally, would be hailed with satisfaction. Perhaps from some of our correspondents suggestions may come worthy of consideration, and in the meantime we would offer such ones as these:—

First a novel form of group might be obtained by having a base for the group to consist of compact habited flowering plants only, whilst only foliage plants should be employed to dress it, in accordance with the prevailing fashion. A base of Begonias edged with Gloxinias, for instance, or of scarlet Pelargoniums edged with pink ones, elegant Palms, Ferns, Dracænas, &c., rising from out of these, would be in quite a new style, but whether pleasing remains to be seen. Conversely groups composed of solid carpets of greenery, or of silver or other variegated foliage, from out of which rise only flowering plants, might be made to look pleasing, but there should be no employment of flowering plants in these carpets as is now the case. In by far the greater portion of present-day groups we see just about the same mixture of flowering and foliage plants—indeed, the copying is painful and monotonous.

Of form of plant group it seems impossible to obtain much satisfactory variation, for it is found that a bold semicircular front always gives the best artistic effect, and is at the same time the most pleasing. Still, any bold effort to break away from this stereotyped form, if it can be done without detriment to beauty and elegance, should be hailed with pleasure. The great want is originality, but it unfortunately happens that whilst the one in a thousand may be original, the rest may only prove admirable copyists. Will flower show committees, in preparing their schedules of prizes next year, include a class for plant groups that shall exhibit a decided novelty, and boldness in arrangement, so that fair opportunity may be given to decorative geniuses in various districts to exhibit their skill? Such liberality may perchance bring an ample reward.

THE returns of THE FRUIT CROPS, which, by the courtesy of our correspondents, we are this week enabled to publish from all parts of Great Britain, are, we fear, not calculated to revive the hopes of the gardener or farmer who trusts to fruit growing to counterbalance his losses in other directions. It is true that there are exceptions here and there, but on the whole we can but record a failure. One special exception we have to note this year, and, indeed, generally—the small and soft fruits, Currants, Raspberries, Gooseberries, and Strawberries are mostly abundant; and if some of these do not travel well, others present no difficulty in this way. The soft fruit may readily be turned into jam on the spot, and the evil effects of a glut in the market or of bruising in carriage may thus be averted.

There is little doubt as to the cause of the present scanty fruit crop. It is the old story of spring frosts. The wood and buds were ripened well last autumn, and everything promised a full crop, the tender leaves of Hope were put forth, the next day came a frost — "a killing frost." This is so common an occurrence that it may almost be looked on as the normal state with which fruit growers have to reckon. Foreign competition will probably be severe, the more so as we hear that much of the fruit which would, under ordinary circumstances, be consumed in Paris is likely to be sent over here, as the fear of cholera has very materially lessened the demand in the French towns. Incidentally it may be said that fruit, even if unripe or over-ripe, cannot of itself produce cholera, and that those who partake in moderation of wholesome fruit, as reasonable persons should do, need not be under the slightest apprehension that they will thereby be rendering themselves more liable to cholera, or, indeed, to any other disease whatever.

As a general summary of the condition of the fruit crops past, present, and prospective, we may say that:—

Apricots are under average, except in Lincolnshire and a few of the Midland Counties.

Plums are under average almost everywhere.

Cherries have yielded a good average.

Peaches and Nectarines are under average, except in the Southern and Western Counties, where the crops are about an average. Of course this applies to outdoor fruit.

Apples are under average almost everywhere. A few localities only claim "An average."

Pears are under average everywhere.

Small fruits are a very good average, or perhaps a little over average.

Strawberries were over average and fine in quality, but were soon over, from the effect of heat.

Nuts are under average in Scotland and the Northern Counties of England; in the Midland and Southern Counties somewhat better crops are reported, though in some parts of Kent Nuts are conspicuous by their absence. Walnuts seem rather more abundant.

With the certain prospect that there will be little autumn fruit to gather, and assured of the worst, fruit growers are naturally thinking now of the outlook for the coming year. Business men, great as may be their losses from time to time, cannot afford to despair. It is wisest to accept the inevitable and to make the best of a bad condition, still looking hopefully for better things in time. The growers argue, two such disasters can hardly happen in successive seasons. Therefore the probable fruitfulness or otherwise of all kinds of hardy fruit trees naturally forms an interesting subject of observation, and having regard to the absence of check to abundant growth because of the lack of fruit, we see the grower absolutely rejoicing at the long-continued drought, or comparative drought; for throughout the Midland and Southern Counties, at least, no rain has fallen that can in any way materially affect the roots of the trees. They reason that a flood of moisture just now would promote such an activity of vegetation as to endanger the now forming and ripening buds on the wood, and possibly produce an abnormal autumn growth that would prove most injurious. Ample wood has already been produced, and the one great need is the thorough ripening of what is formed. This continued dryness for a few weeks longer will materially aid, whilst there is yet ample life and vigour in the trees, to create and mature fruit-buds—indeed, these are already plentiful and stout, so that whatever may be the result another year (should all things go well during the remainder of the present season), there will be no lack of bloom, and without that factor fruit crops cannot possibly follow.

—— DENDROBIUM BENSONÆ.—Hailed as one of the best introductions of the day when sent over from Moulmein by Colonel BENSON to Messrs. JAS. VEITCH & SONS, of Chelsea, nearly twenty years ago, this lovely Dendrobe at once became a great favourite, the attractiveness of its lovely white flowers, relieved and enriched by their bright orange and maroon blotched labellums, and the profusion with which they are produced, recommending it to all lovers of beautiful flowers. Soon, however, it was found that the plant was not a good doer in every one's hands, and that even with those who managed it best it was in the habit of departing from them suddenly and without giving much sign of decay. In consequence of its impatience under culture it has been imported and has become scarce again several times, its value rising and falling in a most extraordinary manner—so much so, indeed, that the first few small plants offered at Messrs. PROTHEROE & MORRIS' this year realised from £3 to £4 each. That the plant is not unmanageable, however, the specimen belonging to the Hon. and Rev. J. T. BOSCAWEN, of Lamoran, Probus, Cornwall, from whose plant our illustration (fig. 30) was taken, and many other good specimens in different parts of the country, which have grown on from year to year, always improving, sufficiently demonstrates; it therefore but remains for those who do not succeed well with it to endeavour to find in what particular their treatment errs, and success will be assured. Dendrobium Bensoniæ should be grown in a warm, airy house. It is safest in a basket, in peat and sphagnum, but the less material of any kind in reason it has about its roots the better. During the rooting season, and until the growths are fully matured, the plants should be copiously watered or dipped, but after the leaves fall off, and while it is in bloom, it

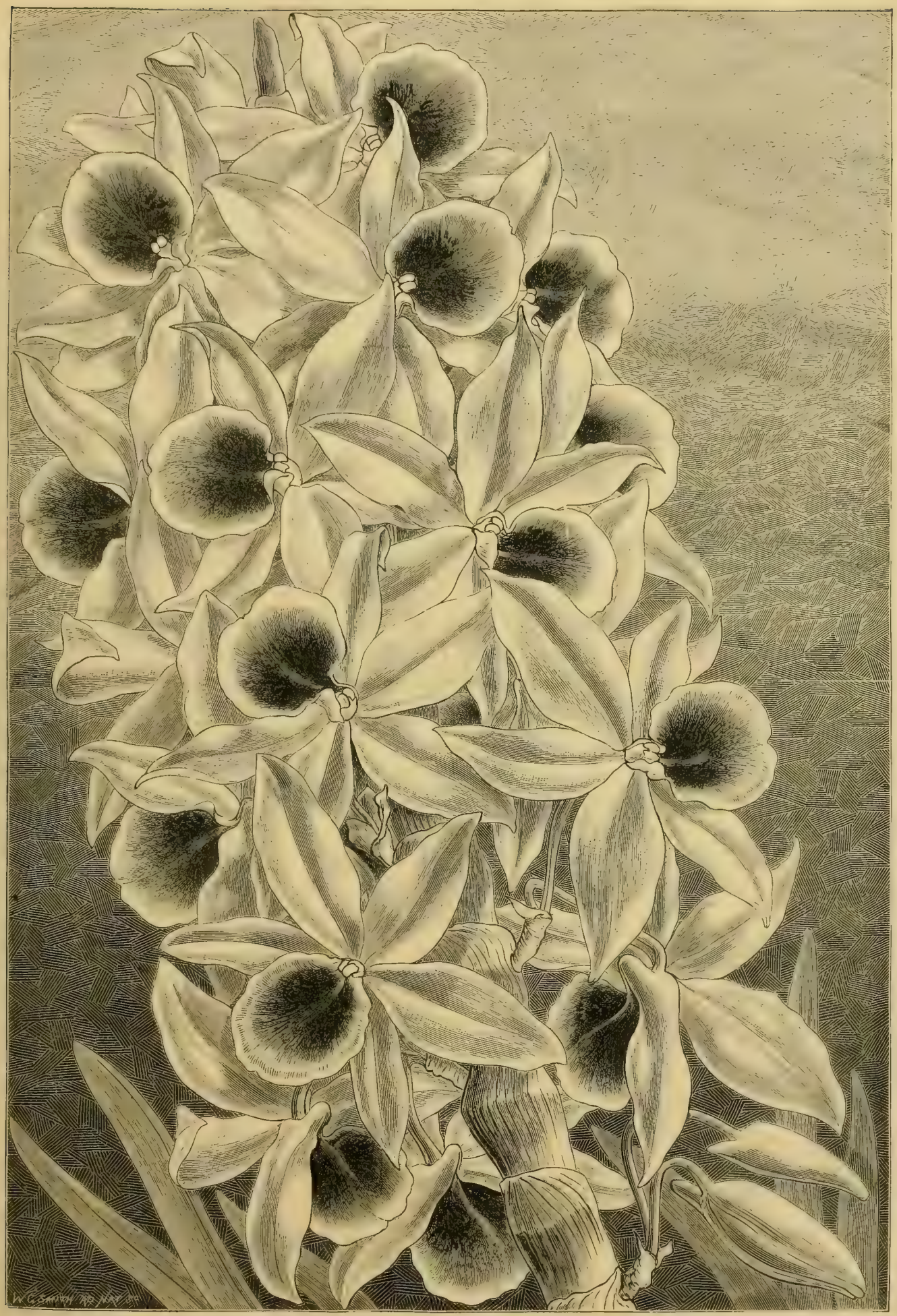


FIG. 30.—DENDROBIUM BENSONÆ: SPIKE WITH THIRTY-THREE FLOWERS, GROWN BY THE HON. AND REV. J. T. BOSCAWEN.

should be kept in a rather dry intermediate house, and only just kept moist at the roots. The profusion with which this plant produces its flowers plays a very great part in the destruction of small or weak pieces; it is therefore advisable with such to pick off the flower-buds as soon as they appear: the plants will then be able to put all their strength into the new growths. A pretty white and yellow variety without any dark marking (D. B. xanthina), and another in which the orange colour (D. B. aurantiaca) is very bright, also come in small quantities with every importation. Mr. BOSCAWEN informs us that he bought his specimen when in a thum-bpot, some years since, that he has never shifted it from the pot, but about three years ago he placed it, pot and all, in a small basket, with sphagnum. The basket was placed in a house with a tank and well exposed to the sun; in fact, the plant was never shaded, but it was watered at the root twice a day in hot weather, but never over the leaves. The plant was rested in a dry house with plenty of air, but still exposed to the sun, and no water at all was given till the flower-buds appeared, in May, when moister, warmer treatment was adopted. The spike figured was one of five, about equal in size. All were cut, to the owner's disgust, during his absence, but the plant is now growing as well as ever.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. GEORGE FORTY, Gardener to Captain HARGREAVES, The Mount, Bishopstoke, has, we hear, obtained permission from his employer to throw open his grounds on Monday next, August 4, in aid of the Pension Augmentation Fund of this Institution. Captain HARGREAVES has also very kindly undertaken to pay for a band, so that the receipts may not be taxed for this expense, and we sincerely hope that the day may be fine, and the attendance of visitors as large as Captain HARGREAVES and his gardener can desire. We regard such efforts as this with the utmost satisfaction, and should be much pleased to see other employers following so good an example. It is one of the most legitimate methods of "raising the wind" in aid of the Institution; and a large sum might soon be obtained if gardeners generally would but do their best. We understand that the amount collected this year up to the 28th ult. is £524 16*s.* 6*d.*

—— IVY-LEAVED PELARGONIUMS.—The last of the divisions of the Pelargonium family taken in hand by the raisers of new kinds is the Ivy-leaved section, and with them the improvement effected has been rapid and marked in the character of the individual flowers, but still more so in their freedom of production, many of the newer varieties being extremely floriferous. Like others of the genus their continuous disposition to bloom is not the least of their good properties; another thing in their favour is that the varieties now in existence afford a greater proportion of soft colours than the zonals. As flowering plants for hanging-baskets they have few equals, neither have they for window boxes, in which we recently saw them used with more telling effect than we recollect ever before meeting with them. The house is a good-sized one, the whole front is covered with a selection of the best and most distinct kinds of Ivy, kept in faultless order; most of the plants in the boxes are Pelargoniums selected with a view to the colours harmonising; one half of them are Ivy-leaved varieties that form a drooping thicket of the most pleasing shades, sufficiently irregular in outline to avoid formality. These Pelargoniums, with their luxuriant background of Ivy, constitute as pretty a picture as could well be imagined. The double-flowered varieties are excellent for this sort of work, the following being amongst the best:—Abel Carrière, flowers large, colour magenta, feathered with maroon; La Rosière, soft rose; Jeanne d'Arc, white, suffused with lavender; Congo, lilac, with silvery-white edges; Viscountess Cranbrook, rose, shaded with white; Isidore Féral, light rose; Mrs. Moore, white, edged with lilac and crimson; M. Pasteur, pink, shaded with magenta.

—— THE NATIONAL CHRYSANTHEMUM SOCIETY.—Some thirty members of this Society paid a visit on the 22d ult. to the nursery of Messrs. CANNELL & SONS, of Swanley, and were well pleased with their afternoon's inspection of the special cultures carried on in the establishment. In the evening the visitors sat down to a substantial repast at the Lullingstone Castle Hotel, with the President, E. SANDERSON, Esq., in the chair, and the Vice-President, R. BALLANTINE, Esq., in the Vice-chair. A hearty and unanimous vote of thanks was accorded to Mr. CANNELL, and also to Mr. WILLIAM HOLMES, the organiser of the trip.

—— MARRIAGE OF MR. HUGH LOW.—The *employés* of the firm of Messrs. HUGH LOW & CO., of Upper Clapton and Enfield, were entertained on Thursday evening last, July 24, in the large packing-shed of the Clapton Nursery, which had been gaily decorated for the occasion, to celebrate the wedding of Mr. HUGH LOW with Miss EMILY FLORENCE DORE, of The Grange, High Road, Clapton. The company numbered 140, and Mr. LOW occupied the chair. He bade all his *employés* a hearty welcome, saying, "We have assembled here this evening to enjoy ourselves," and alluded to the good feeling that he felt existed between them all, from himself, his sons, and the heads of departments, to the smallest boy employed. Mr. FRANK CASEY, the manager, proposed the health of the newly-married couple, and adverted to the kind and generous spirit of Mr. HUGH LOW, as shown whether in or out of business, or with whomsoever he came in contact—boys or men: there was always the same genial bearing that had endeared him to all. He, Mr. CASEY, had nursed him as a child, played and romped with him as a boy, and had worked with him shoulder to shoulder as a man; and concluded by proposing "Long life, health, happiness, to Mr. and Mrs. HUGH LOW," which was enthusiastically received, as were other expressions of good will towards the host and the manager.

—— THE EVENING FÊTE held at the International Health Exhibition on the 23d ult., in aid of the London Hospitals, was generally acknowledged, for splendour and magnificence, to be the *fête* of the season, and may be specially alluded to in our columns, as ladies of the highest rank, headed by H.R.H. the Princess of WALES, presided at stalls for the sale of flowers and fruit, liberal contributions of which were received from all parts of the country. Roses were especially favoured—from 25,000 to 30,000 blooms being disposed of—one beautiful basket of Maréchal Niel Roses, presented by Mr. G. BUTT, Kensington, being put up to auction at the Princess's stall in the conservatory, realising no less a sum than £31 10*s.*, probably the highest price ever received for a single basket of flowers. Many of the leading growers contributed large groups of plants and flowers for decoration. The entrance vestibule or hall was turned into a veritable flower show, with beautiful masses of Roses from Messrs. G. PAUL & SON; Carnations and Picotees from Mr. TURNER; Begonias from Messrs. LAING & CO.; Pitcher-plants from Mr. B. S. WILLIAMS; hardy foliaged trees from Messrs. CHARLES LEE & SON; and beautiful collections of mixed plants from Mr. ALDOUS, Messrs. FROMOW & SONS, Messrs. CUTBUSH & SON, and H. J. ATKINSON, Esq., Gunnersbury. The whole of the floral arrangements were carried out by Mr. BARRON, Superintendent of the Gardens, and we need scarcely add gave great satisfaction.

—— MASCARENHASIA CURNOWIANA.—The advent of a distinct handsome-flowered evergreen climbing plant is by no means an everyday occurrence, and when one that warrants such a character makes its appearance it sometimes is much longer than might be supposed in becoming generally known. Such appears to be the case with the plant in question, which, as regards its flowers and leaves, is a beautiful addition to our stove climbers. The leaves are opposite, lanceolate in shape, deep green in colour, and on small plants a little bigger than those of the large-leaved Myrtle; the flowers are produced in umbels at the points of the shoots, and from the base of the leaves at the joints below the apices. They are tube-shaped, the limb is 5-lobed, spreading, quite flat, so as to be seen to the best advantage. The individual flowers are about the size of those of Jasminum grandiflorum, and bright carmine in colour, with deep crimson markings at the base of the segments. The individual flowers last well, remaining fresh on the plant for a week. Its natural disposition to bloom is so free that when we recently saw it in Messrs. Low's nursery at Bush Hill Park, Enfield, small bushy examples in 5 or 6-inch pots, not more than 7 or 8 inches high, were carrying several bunches of flowers each, which half hid the leaves. Like some other climbers, it does not show its scandent habit in the first stages of growth. It looks as if it would not be too rampant a grower, most likely in this respect being something in the way of Trachelospermum jasminoides. It comes from Madagascar, and will no doubt thrive under moderate stove-heat, with ordinary treatment in the matters of soil, air, shade, and moisture.

—— ROUPELLIA GRATA.—Notwithstanding that this is no new introduction, it is less frequently seen in gardens than its beauty and fragrance, and no less the size of its flowers, would warrant. These are large, rosy-white, and produced in cymes terminating the branches, which are abundantly clothed with large, leathery, darkly coloured evergreen leaves. Like many other members of the Dogbane family, to which it belongs, the long flexible shoots are admirably adapted for training on trellis-work, as well as in bush-shape with a little support. The secret of flowering it, however, is to allow these long shoots to develope, at the end of which the large handsome flowers are produced. A figure of it appeared in the *Botanical Magazine*, t. 4466, and a specimen in the Palm-house at Kew has been flowering for some time.

—— EXACUM MACRANTHUM.—No more handsome flowers could adorn the shelves of the conservatory than this showy annual. It is usually considered tender, and treated as such in this country. Certainly it is a native of Ceylon, but it occurs on the mountains at an elevation of 6000 feet, and consequently delights in a more airy atmosphere than that of a stove. It may safely be germinated in heat, and encouraged to make a vigorous growth, after which it may be placed in any cool airy house, where the growth will be more stubby and firm. The large terminal cymes of intense blue flowers, verging on purple, will be of greater substance and more durable. It is figured in the *Botanical Magazine*, t. 4771, and resembles E. zeylanicum in habit, but is readily distinguishable by its round stems and broadly ovate acute segments of the corolla, while the latter has square stems, paler flowers, and blunt corolla lobes. Specimens of E. macranthum may be seen dotted about in different places in the T-range at Kew.

—— IS THE HOLLYHOCK DISEASE DYING OUT?—This is the question we put to ourselves a few days ago when looking upon a large breadth of seedling Hollyhocks in Messrs. SUTTON & SONS' London Road seed grounds at Reading. Despite the long spell of dry weather, and the fact that the plants occupy an exposed, open, sunny position, and the soil in which they are growing is somewhat light, it was assuring to note that only very few traces of disease were noticeable, and now that the weather is cool, dull, and showery, the manifestations of disease will probably not present themselves to any great extent. The plants have made a vigorous growth, they are tall and stately, and are developing wonderfully fine spikes of flower, in many instances quite up to the quality of named varieties. They are treated to some mulching with manure, and are watered when required. This is not the only case where we have seen this season Hollyhocks growing vigorously, and with little if any trace of disease. Let us hope it is less virulent, and likely to remain so, than it was a few years ago. At one time the loss of the Hollyhock appeared imminent; it may be that the conditions are now more favourable to its well-being than they were a few years ago.

—— BOMAREA CARDERI.—This very handsome climber, which a few years ago was received by Mr. BULL from the United States of Colombia, can now be seen in very fine condition at the Handsworth Nurseries of Messrs. FISHER, SON & SIBRAY, at Sheffield. Here it appears to be perfectly at home, growing freely, and flowering abundantly. It is a vigorous growing twining plant, with dark purplish stems, and these on young plants in pots are seen trained up to the roof of a house, where they put forth large heads of charming blossoms, reminding one somewhat of Lapageria. There is a fine stock of it in the above nurseries, and two-year-old plants are very strong, and flowering well. The flowers well repay inspection; they are of a light rosy-pink colour, but, unlike those of the Lapageria, the segments contract towards the mouth, and here they are marginally spotted with purplish brown. It appears to be a continuous bloomer, as young growths start

from below the clusters of flowers and bloom in their turn. In a small span-roofed stove may be seen a large specimen planted at one end which has produced quite a cluster of fruits, or seed-pods. Its vigorous growth is one of its chief characteristics, but perhaps its fine condition here is due to successful treatment. The plant was first described and figured in these columns, p. 795, vol. v., 1876.

—— Runner Beans for Market. — As those at all conversant with London market gardens cannot fail to know, the usual practice is to grow the Runner Beans without sticks, planting them with the rows not more than half the distance apart that is necessary where sticks are used. To induce a bushy condition of the plants the tops are pinched out when they have made some growth, which naturally has the effect of causing them to branch at every joint down to the ground, thus not requiring any support, and in this way an immense quantity are grown. The obvious reason for adopting this method is to save the cost of sticks and the labour of preparing and putting them in. But in Kent, where vast quantities are now cultivated, the growers are again beginning to use sticks, finding that the Beans, which are in this way so much cleaner, and a better sample, fetch a price that more than compensates for the cost and labour of sticks.

—— Mr. Bull's Orchids.—Their Royal Highnesses the Crown Prince and Princess of Germany (Princess Royal of England), with their three daughters, paid a visit, on Tuesday last, to Mr. William Bull's Orchid Exhibition at Chelsea. The Crown Princess was presented with a handsome bouquet of Orchids by Mr. Bull, and three of his young daughters had the honour of presenting each of the Royal Princesses with a bouquet.

—— School Boards and Plant Culture.—One among many interesting sights at the Handsworth Nurseries, Sheffield, is a large collection of plants being grown by Messrs. Fisher, Son & Sibray for the Sheffield School Board. There are in all 10,000 plants, composed of Balsams, double Petunias, Harrison's Musk, Fuchsias, and zonal Pelargoniums. This large number of plants has to be delivered to the School Board on August 10. They will be distributed among the children attending the different schools in Sheffield under the control of the Board, and after being kept five or six weeks they will be exhibited for prizes in one central place. The plants are all in a uniform sized pot—a kind of large 48, and they are all stamped with the letter S. The weight of the 10,000 pots was 4½ tons, and 12,000 gallons of soil were required to pot them. The plants will be delivered in the best condition, and then culture under very different, and even difficult circumstances, will follow. It is said that this novel experiment is the outcome of an effort on a smaller scale, but so interesting and valuable in its results that the Sheffield School Board have been induced to attempt it on a larger scale. Who can attempt to forecast the influences that may come from this attempt to apply what Gerald Massey terms the "Silent ministry of flowers!"

—— New White Clove, Gloire de Nancy. —A beautiful bunch of this deliciously scented flower comes from Mr. Ware's nursery, Tottenham. The large, pure white blooms, and apparently vigorous habit, make it a fine addition to the herbaceous border, or for growing in pots or boxes for balcony and window decoration. For these latter uses the Carnation, in all its varieties, is too seldom used, and yet in Italy and the Tyrol, everybody has them, but they are not trained so stiffly as with us, but are allowed to droop, and then the blooms last for a longer period, and are not spoiled by rain and a too brilliant sun.

—— Wild Ferns. — The wasteful plundering of our woods and hedgerows, by peripatetic gatherers and dealers, of myriads of beautiful wild Ferns for purposes of trade, has again attracted attention in the daily press, and drawn forth strong remonstrances. One well known writer, however, deprecates this attack on the wholesale collection and—perhaps it is safer to say—destruction of Ferns, on the ground that the plants serve to beautify many an otherwise dreary town garden, although even he thinks that the collectors should be induced—nay, prevented from taking old stools, and be permitted to gather young ones only. He thinks that if the old spore-bearing Ferns are left standing they will continue to raise seedlings plentifully. The danger of granting any such permission—assuming that the old Ferns were really respected—seems to lie in the fact that if all the young plants are carried away there will presently be none left to take the place of the old ones when, in the course of Nature, those die. Another writer urges that the best antidote for this wholesale robbing of our wild Ferns is to create a taste in the public mind for those beautiful varieties which have come into commerce chiefly through the nursery trade. That suggestion is, we fear, nearly as practical as was the famous one of the French princess, that if the populace could not get bread, why not give them cakes? What is so deplorable is, that the vast mass of these stolen Ferns are brought into our great towns to be planted in soil, and under conditions, utterly unsuited to them, and they die. Thus the country becomes all the poorer, and the towns none the richer. Wild plants, especially those so comparatively slow of growth as Ferns are, need protection from wholesale plunderers, and it is about time something was done to check a deplorable practice.

—— A Short Pea Season.—Taken altogether, this, in most parts of the kingdom, has been one of the worst Pea seasons on record. The long-continued scathing east wind, and accompanying frosty nights, experienced through the spring, when the early crops should have been growing fast, prevented their making headway, and retarded their blooming until in many cases those sown for succession were too close on after the earliest; then the continued dry weather brought the later ones in too near together, unless where exceptional conditions for keeping them in free growth existed, such as thin sowing, with deep cultivation and plenty of manure in the bottom, so as to entice the roots down, and sustain them, at the time the upper surface was too dry to support healthy growth. This points to the advisability, particularly where space is at all limited, of making especial preparation for the later crops of this favourite vegetable, and above all of avoiding too thick sowing—a practice at all times wrong, but which in dry seasons has the worst effects with plants like the Pea, which forms horizontal roots in quantity, but which do not extend far enough to reach either food or moisture that is not moderately near them.

—— The "Danebrog" Poppy is the most remarkable of the single Poppies. The flowers are beautifully fringed, of a vivid scarlet colour with a white centre. A group of these here and there in a herbaceous border would form quite an unique feature during this and the following months. The Marseilles Poppy is very double, quite as much so as a double Hollyhock, which the flowers very much resemble; they are white, very slightly flushed and spotted with red. If Poppies are to find a place in our gardens, it is well that the very best of them should be grown, and the above will not readily be matched.

—— Presentation to Mr. Barron.—Some rascally thief some time since basely imitated the gardeners' art of pruning, and removed the watch that had been presented to Mr. Barron on the occasion of the Apple Congress. Perhaps it might be as well if the thief be not further acquainted with the effects of pruning. Be this as it may, some of Mr. Barron's many friends determined to give an example of the new growth that arises after pruning, and accordingly presented Mr. Barron on Thursday last with a further reminder of the respect and good feeling entertained for him, in the shape of a handsome watch and chain. The presentation was made at the Health Exhibition by Mr. Maurice Young, Mr. Somers Vine being in the chair. Mr. Barron, who was completely taken by surprise, made a suitable acknowledgment.

—— Torenia pedunculatis. — The habit of this plant may be compared to that of T. Fournieri in the erect stems, but the leaves are much broader and paler green. The flowers are pale yellow, with two purple spots on the lateral lobes of the lower lip, and while they much resemble those of T. edentula, a species introduced many years ago from the East Indies, they are an improvement upon that, and botanically distinct in having a small tooth on the lateral filaments, a characteristic mark of the genus, which is absent in T. edentula. The present species is a native of the Lo-Fau Shan Mountains, being one of those collected by the Superintendent of the Hong Kong Botanic Garden, in company with the Rev. E. Faber while on a botanical tour there, (see p. 75) and sent to Kew last year. It is now flowering in the Begonia stove there, and if not very important horticulturally, is so for botanical purposes, and interesting in a genus containing several neat and attractive plants.

—— Tropæolum Empress of India.—This is certainly the most distinct and handsome of all the Nasturtiums, and it seems to be one that succeeds well in the most exposed positions it is possible to find for it, and a heavy clay soil to root into. Under such conditions a long row of it is very effective in the trial grounds of Messrs. Hooper at Herne. The rich crimson-scarlet flowers are well set off against the neat bronzy-green foliage.

—— Lavatera trimestris. — In the same grounds Lavatera trimestris forms a neat group. It is one of the most charming annuals for the border. The plants are 1 foot high, well furnished with large characteristic rose-coloured flowers; a few of them cut and deftly placed in small vases on the mantelshelf were very pleasing.

—— Billbergia Porteana.—The members of this genus, as a rule, are gorgeous and showy plants, not merely for the flowers alone, but for the whole inflorescence, including the attendant bracts. In this case the bracts on the flowerless part of the peduncle are unusually large, and of a fine rose colour. The rapid development of the flower-spike is a marked feature; but, while that is so, the short duration of the flowers is matter of regret. The persistent sepals and ovary are invested with a white tomentum, contrasting strongly with the long pale yellow petals. The whole plant is bold and striking when in flower, and as that event is not of frequent occurrence it is the more noticeable and interesting. Two plants flowered lately in the stove at Kew, making it the fourth or fifth that has thrown up an inflorescence since its introduction there. A figure of it appeared in the *Botanical Magazine*, t. 6670.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending July 28, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: —The weather has continued cloudy, showery, and unsettled in all parts of the country. Thunderstorms were very general over southern and central England on the 24th and 25th, and further storms occurred locally on the 27th. The temperature has again been below the mean in all districts, the deficit ranging from 2° in "Ireland, S.," to as much as 5° in "Scotland, E.," and the "Midland Counties." The maxima were recorded in most places on the 22d, and varied from 62° in "Scotland, N.," and 65° in the "Channel Islands," to 74° in "England, S.," and 76° in the "Midland Counties." The minima, which were registered on the 26th at most of the English and Irish stations, and on the 27th in Scotland, were as low as 36° in "Scotland, N.," 39° in "Scotland, E.," "England, N.E.," and "Ireland, S.," and between 41° and 51° elsewhere. In London the thermometer exposed on the grass during the early morning of the 26th descended to 32°. The rainfall has been a little less than the mean in "Scotland, E.," and about equal to it in "England, N.E.," but more in all other districts—especially in "Ireland, N.," "England, S.W.," and "England, N.W." Bright sunshine has been less prevalent than it was last week in most places, the percentages of possible duration varying from 37 in "Scotland, E.," to 18 in "England, N.W.," and 17 in "England, N.E.," and the "Midland Counties." Depressions observed.—During the whole of this period barometric pressure over our islands has been influenced by depressions (generally travelling east-north-easterly) over the northerly parts of the country and small subsidiary disturbances over the more southern districts, while over France and the Bay of Biscay the mercury has been relatively high and steady, winds varying between south-west and north-west in direction, and moderate to fresh in force, have consequently been most general over the United Kingdom, but in Scotland towards the close of the week a light breeze from the eastward was experienced.

VARIATION: ITS CAUSES AND EFFECTS.

THAT animals and plants vary as they multiply, has been abundantly proved. To this variation are mainly due all the kinds of form and quality we see in living things about us. As a rule, it is through the seed-bud that varieties in plants occur. Stem and root-buds, or pieces separated from a plant, and made to grow, rarely give rise to varieties. With regard to the seed, it appears to me that two causes are mainly concerned in initiating variation, viz.:—

1. The position of the ovule with regard to the circulatory system of the mother, in the plant, and its position with regard to the circulatory and nervous systems in the animal.

2. The potency with which an ovule is fertilised by the male elements.

Differences in the vigour, constitution, state of health, &c., of both parents, will, of course, cause variation in the progeny; and so will the conditions to which the progeny are subjected after separation from the mother. I shall only deal here with the two causes above noted, and will consider other conditions as equal.

It is an axiom that "No two things can occupy the same place at the same time," therefore it is next to impossible for ovules (which eventually develope into fully formed animals and plants) to be equally potently fertilised by the male element, and equally nourished either before or after fertilisation.

The nearest approach to identical conditions is, perhaps, in the case of twins, or animals born of the same litter; or seeds growing in the same pod or fruit. Twins, for instance, have the same parents; they are conceived at the same age, and physical and mental conditions of the parents, and probably at the same time. The same may be stated as regards the young of the same birth and the seed of the same pod.

Now, of twins, I doubt whether there has ever been any case in which the one could not be distinguished from the other in any way and by any one. The nearest approach to identity I have seen or heard of (out of novels) was in a case of twin boys, born in India of European parents. Looking at them no difference could be noticed. The father, who was not constantly with them, stated that often he mistook the one for the other; but the mother and the nurse could always tell which was Tom and which was Frank. This sufficiently proves that, even in this quite exceptional case, there must have been some difference, whether of form, voice, way, or otherwise, by which the mother and the nurse could tell which was which.

Admitting, then, that there is some variation even in twins, conceived at the same time, of the same parents, and under similar conditions; whether of parental age and constitution, telluric or cosmic, *à fortiori* we must, of course, admit that it is impossible for descendants of the same parents, but of different births, and therefore conceived and nourished under different conditions of age, health, nervous strength, season, &c., to be other than varieties. Add to this that after birth the individuals are subjected to greater differences and variable conditions than during their connection with the parent, and one has not much difficulty in believing that individuals are only varieties, more or less pronounced—that, in fact, individual and variety are synonymous.

It is interesting and instructive to watch a litter of young pups. The first born, *cæteris paribus*, has the first suck, and is, therefore, stronger than the others. When the mother comes among the pups the strongest sucks more quickly than the rest; having exhausted one mamma it struggles for some other, already occupied. By its greater strength it displaces the occupant, and so gets a larger share of the nourishment. This shows how a minute amount of initial advantage tends to magnify itself in after-growth.

In the uterine life of animals, and in the fruit or food among plants, the ovules cannot, of course, occupy one and the same place, and therefore, although receiving perhaps the same quality of nourishment, cannot receive the same quantity of it. The chances are that the position of the vessels leading to the different ovules does not admit of their receiving an equal share of nourishment. A greater or less distance from the circulatory centre, a more or less angular divergence from the main vessel of the branchlet which carries the food, a large or smaller calibre of this branchlet, &c., will inevitably modify the conditions under which the ovules may be growing. This argument also holds good with regard to a prior stage of the ovule, viz., its cell stage.

This condition alone would lead us to the conclusion, that it is almost out of the question that any two individuals can eventually develope into similar beings. We cannot, therefore, help admitting that variation in the course of descent not only must occur, but that nothing but variation is likely to occur. Hence, putting aside ancestral inheritance, I think one undoubted cause of variation is the necessarily different position which each ovule occupies with regard to the parental food supply.

A stronger cause, I believe, is the potency with which fertilisation occurs in each ovule.

From a number of experiments I have made in fertilising the Amaryllis, and of which I have kept accurate records, in no case have all the ovules contained in an ovary been fertilised. When fertilisation does occur some ovules are potently fertilised, others feebly so, and the rest not at all.

The ovule, with its embryonic bud, is vivified by the admission of the male element (how, of course, is yet a mystery), and the potency with which it is vivified has, in my opinion, a most important effect on the after-life of the ovule, other things being equal. This, of course, I can only infer from the enormous difference that exists between individuals of the same capsule, the conditions of after-growth having been exactly alike in all.

In cases where fertilisation of the Amaryllis ovary has been effected by one kind of pollen, so as to equalise conditions, and the resulting seeds of the capsule, sown at the same time, in the same earth and pot, and under the same depth of earth—in short, all the seeds treated exactly in the same way—never has it happened that material differences did not show themselves in the germinating power of the seeds, some seeds germinating within fifteen or twenty days, others taking a month or more to germinate. The individual difference of vigour in the plants is evident also in their after-growth. Treated exactly in the same way, some of the bulbs belonging to the same capsule will run ahead with ease, and flower early; others will linger on half way, and make but slow progress, while others again hardly make any progress at all, and appear to have had the atoms of their ovules but imperfectly stirred up by the fertilising process. I understand, of course, that a somewhat denser shell in the seed would require more time for the moisture to penetrate it, and start it into growth; this, however, could hardly require a month's time to effect in the Amaryllis. Moreover, one does not see how a harder shell, when once the seed has germinated, would affect the after-growth of the bulb. In my opinion, there is little doubt that on the potency with which the male element stirs up the female ovule (other things being equal) a great deal of the after vigour of the Amaryllis will depend. It is not improbable that the potency may depend on the number of pollen grains which take part in fertilising an ovule (when it can be fertilised by them); that is, on the amount of male elements which come in contact with the female elements contained in an ovule. Of this, however, I know nothing.

Parallel instances are observable in the animal world. Some children of the same parents are vigorous, and grow rapidly; others are puny, weak, and generally delicate, which no amount of care, nursing, &c., will ever turn into strong individuals, capable of competing, by their own efforts, in the hard struggle for existence. *E. Bonavia, M.D., Etawah.*

ROYAL WOODS AND FORESTS.

THE plantations and woodlands in the Royal Forests, from which the exhibits are sent to the International Forestry Exhibition at Edinburgh, comprise in all about 53,600 acres, viz.:—

Dean Forest and Highmeadow Woods, Gloucestershire, about	19,500
Windsor, Berkshire, about	10,000
New Forest (Hampshire), about	18,750
Bere Woods (Hampshire), about	1,434
Alice Holt (Hampshire), about	1,887
Woolmer (Hampshire), about	870
Parkhurst, Isle of Wight (Hampshire), about	1,152
	53,593

They vary in age from about 300 years to three or four. The main crop in all these woodlands is, or was intended to be, Oak for the navy, but many other kinds of trees have been intermixed with them, so as to insure, if possible, having a crop on the ground, and to provide revenue, as well as for nurses to the main crop. The varieties consist chiefly of Ash, Birch, Beech, Spanish Chestnut, Elm, Lime, Hornbeam, Larch, Scotch Fir, Pinaster, and Spruce, also latterly a few Deodars, and Corsican and other Pines, &c.

It is difficult to give any information as to the cost of maintaining these woodlands, or of the revenue derived from them; many of them, notably Windsor and New Forests, being kept up as much for public pleasure grounds as for any other purpose; consequently the annual expenditure is great. In Windsor, for example, about 40 miles of gravel roads are kept up by the Office of Woods.

The produce is disposed of, after the repairs of lodges, fences, and gates, &c., are provided for: the large timber for navy purposes, if any, then to railway and other waggon works, wheelwrights, chairmakers, &c.; and the smaller kinds for pit props, fencing, rafters, railway sleepers, telegraph posts, wood paving, &c.—the Oak bark, of course, to tanners.

The exhibits comprise timber and other waggons and carts, tools, specimens of fencing, gates, &c., as used in the Crown forests; cross sections of trees of different kinds, grown on different soils, and planks showing various defects and their probable causes; a copy of a register kept in Dean Forest since 1809, showing the difference in growth between Oak trees (now 100 years old) transplanted, and never transplanted, a few photographs, &c. *J. Campbell, in the Catalogue of the Edinburgh Forestry Exhibition.*

HOME CORRESPONDENCE.

The Aphis and the Storm.—There seems to be an opinion prevalent among many that lightning destroys aphis, which no doubt it does in some cases when trees are struck, but that it affects them otherwise, I have great doubt, although they frequently disappear after a storm. This is more owing to the washing the foliage receives than any help from the lightning, and it was a positive pleasure to stand and witness the pelting they received on the 24th ult., when hail and big drops of rain poured down in torrents. I could not but feel a spiteful sort of satisfaction in knowing they were being dashed headlong to the ground, and drowned mercilessly, for they have been a deal of trouble, as look where one would there was black, blue, or green fly on every shoot, twig, or leaf; or if the insects were not directly visible, excreta from them was only too plainly to be seen. Beekeepers call this "honey dew," and evidently regard it as a beneficent deposit sent to fill their hives; but I made an apiarian recoil when I told him what it was, and he said he should not again relish his honey. It is quite as well, perhaps, that we do not always know what we eat, and it is to be hoped that the process the matter exuded by the flies undergoes in the bees purifies it, and makes it more wholesome and agreeable than at first thought appears. If it had not been for the storm of rain coming when it did, trees would have been in a poor plight, and could not possibly have formed fruit-buds for another year, so crippled were Plums and Cherries in their young growth; but now that they are free from aphis, they will have time to right themselves before defoliation begins. *J. S.*

Hypericum nummularium.—This forms quite a pretty feature just now on the rockwork in the York Nurseries. Its bunches of slender reddish stems, clothed with roundish Moneywort-like leaves, surmounted with large (for the size of the plant) bright yellow blossoms, ¾—1 inch in diameter, are most attractive. It thrives well in sandy or stony soil in warm sunny positions. It may be remarked that it is perfectly hardy. *R. P.*

Polemonium Richardsoni.—Three species of Greek Valerian are tolerably common in English gardens, but the nomenclature is rather confused and uncertain. The old Jacob's Ladder (P. cœruleum), a native or naturalised plant, with blue or white flowers, also with variegated leaves, is well known. Next in frequency we find one generally sold as P. reptans, but not a creeping, though a low growing plant. The leaves are large, nearly all radical, with about four or

five broad pinnæ on each side, acute at the tips. It flowers in a loose panicle of pale blue flowers, rising about 9 inches, in April. It is sometimes sold as P. Richardsoni, and is liable to be confused with the next, which is also common in gardens, and is a more ornamental plant, namely P. humile. This, which has a very neat habit, and long narrow leaves, with twelve or more closely arranged cupped pinnæ on each side, is figured in the *Botanical Register* for 1829, tab. 1304. It grows well in a moist light soil, preferring a north or west aspect, and is an elegant and desirable garden plant. It flowers later than the last, and the flowers are of a better blue, but its foliage is its best part. I now come to the plant which was figured in the *Gardeners' Chronicle* in the autumn of last year as P. Richardsoni. By the kindness of Mr. Loder, of Floore, I obtained a piece of the plant which was figured, and have now a good stock of flowering plants. It is the best of the genus for garden decoration, but I think it has no right to the name Richardsoni. The plant to which that name was given is described as a dwarf species, closely allied to P. humile, and the plant in question is the largest and strongest, though not the tallest, of the genus. It is figured and described in the *Botanical Register* for 1829, t. 1303, by the name P. cœruleum var. piliferum. It is there said to have been brought, with several other varieties of the genus, including P. humile, from North America by Dr. Richardson. In Sweet's *Flower Garden* I find, in vol. iii., fig. 182, a plant figured as P. sibiricum, "readily distinguished from all others by its bipinnate leaves," which appear to be its only distinction. This so-called species has been produced abundantly in my garden from seed of the ordinary P. cœruleum, of which it is certainly only an accidental variety. I do not know where the true P. Richardsoni is to be seen. *C. Wolley Dod, Edge Hall, July* 24. P.S. Since writing the above I have sent the four species or varieties of Polemonium for Mr. Baker's opinion. He confirms the names "reptans" and "humile," and says that Richardsoni belongs to a variety of "humile" not in my collection.

Bedding Violas.—If I were a gardener whose duty it was to provide a display of flowering bedding plants, I should always plant a good number of Violas of good self colours, for the production of floral effects whenever I was assured of a cool moist summer. Of course the difficulty in finding out beforehand what was to be the atmospheric condition of a summer season is great, and may be insuperable. Perhaps I should be more correct in saying that no bedding plants will prove so satisfactory during moist summers as Violas. On the other hand, should the season prove hot and dry, no bedding plants will give a more unsatisfactory result. It is pleasant to read of many beautiful kinds growing luxuriantly in the cool North, where Violas and Pansies are so thoroughly at home; but here, in the hot dry South, and especially during such a season as the present one, no plants give more unsatisfactory results. The suggestion that the trial of Violas at Chiswick should be enlarged would be worthy of attention if Violas did well there, but as a rule they do badly, in spite of having a somewhat shaded border and good culture. The Chiswick soil is too light and porous for Violas, and the average summer temperature is too high to enable satisfactory results to follow; therefore it is hardly worth enlarging ths present number of kinds grown there. Really, the Viola is a bad Southern plant as a rule. It needs ample depth of soil and abundant moisture to render its growth and bloom continuous. There can be no doubt but that in the more recent kinds raisers have got farther than ever from the wiry character of the original parents, and therefore these children are less able to withstand our sometimes hot dry summers. *A. D.*

The Alexander Peach.—Since the remarks I made on this Peach appeared, Mr. Gilbert, of Burghley Gardens, Stamford, has most kindly sent me a fruit of Early Amsden to compare with the Alexander, but unfortunately we had gathered and used all we had on the tree before receiving the Amsden, and therefore I cannot speak positively as to their identity, although I feel sure that the two are the same kind, and differ only in name. If so, it would seem that the Americans have been free in christening, as I am of opinion that Hale's Early is also synonymous; but be this as it may, they have sent us a valuable and good early Peach that ought to find its way into most gardens. The only course to settle the question as to whether they are distinct or not, is to have fruit before the committee who meet to adjudicate on such matters; but the trees from which it is gathered ought, I think, to be growing under the same conditions as to aspect, or in the same house if under glass, that the test may be fair as to their period of ripening. To have a Peach that will come in on an open wall in the second week of July is a great gain, and especially one of such quality as the Alexander, which is equal in flavour and appearance to most of the old standard sorts. The Alexander—if Alexander it is to be—must not be confounded with the Alexandra, as the last-named is a seedling from the Noblesse, and differs from its parent but little except in being more hardy, and of a better constitution and growth. *J. Sheppard.*

Cyclopia genistoides.—This is an old-fashioned plant, which might be classed with the New Holland plants, except for the circumstance that it is a native of South Africa. New Holland, too, is a geographical expression now disused, and "New Holland" plants are experiencing a degree of neglect which would fill the old plantsmen with digust. The wheel will, however, revolve as usual, and the New Hollanders will come to the front again and make people wonder why they should have been so long neglected. When that time comes the plant here figured, Cyclopia genistoides, will have its turn. It is a glabrous shrub, with 3-foliolate leaves, the leaflets very narrow, and appearing more so than they really are, from the revolution of the margins. The yellow papilionaceous flowers are freely produced at the ends of the shoot, and remain for a long time, so that the plant is a good summer flowering greenhouse plant, and suited for cutting. The specimen here figured (fig. 31) was received from W. E. Gumbleton, Esq.



Fig. 31.—Cyclopia genistoides.

Potatos.—Ah! if I follow the fashion of reporters of shows, they are not of sufficient importance to say anything about. Well, I was interrupted in the completion of my experiments at Woodstock, so I bought this place to secure myself from interruption for about another seven years, to complete my task. This is the eighth year of my residence here, and it brings me to the end of my tether. My work is completed that I set myself to do, and I had thoroughly made up my mind to have nothing more to do with Potatos. "Man proposes," Mr. Editor. Down came a little box from Kew this spring, containing "Solanum sp. Most likely S. Fendleri, an interesting and rare kind, from Huachuca, Arizona." Have I forgotten the amenities in not thanking Mr. J. G. Baker for the diminutive tubers? At any rate, we have heard of a "ruling passion strong in death," and for the last three weeks I have been pollen working *vice versâ* from those and my very last seedling, and most certainly with better success than I could achieve after four years unsuccessfully with S. Fendleri that Mr. Pringle sent me from America some cycle ago. I have managed now to gain some swelling berries from the pollen from my seedling on "Solanum sp.," but I have not achieved the coveted *vice versâ* upon my seedling. The wild fellows, however, promise me blossoms for a few days longer, and I have gained the best results from pollen of late bloom before now, so I shall "stick to my last," and I hope my *new* Potato friends will stick to me. *Robert Fenn.*

Calamander Wood (*vide Gardeners' Chronicle*, February 23, 1884).—I apprehend that Calamander and Coromandel Wood are not one and the same, but quite distinct. The first, which by the Cingalese is called called Columedrya, and has been said, perhaps with reason, to be the most beautiful wood in the world, has, I believe, never been plentiful, and it seems now to be impossible to procure pieces of any considerable size. Some years ago I took much trouble, with the help of friends in Ceylon, to procure some, but without success; a few years later a consignment was sent to England: I saw this in the docks, and I do not think that the heart-wood of any stick was more than 3 to 4 inches in diameter. Such small pieces are of very little use, for they do not display the peculiar beauty of the wood, which consists in the great range of colour, from a light brown to black, displayed in a large figure or pattern. This figure is not seen to advantage unless the breadth of the wood is a foot or more. There is also in Ceylon a wood somewhat resembling Calamander, but much less beautiful—it is known as false Calamander; also one known as "flowered Ebony," black and brown in a small rather stringy pattern: the native name is Weiraucarruwelli. Coromandel wood (at least, that wood much used in the making of dressing-cases, &c., and so-called in the shops), is a wood of dark colour, nearly black, interspersed with many small irregular patches and lines of brown; it is wholly different in appearance to any of the three Cingalese woods mentioned above. It is, I presume, pretty plentiful, and I suppose is brought from the Coromandel coast. *Alex. Nesbitt.*

Geranium Wallichianum.—This Nepalese plant is not often met with, being probably not very hardy, and being difficult to increase except from seed. It spreads from a single root-stem into many horizontal branches, hardly rising from the ground, and dying back in winter to the base of the branches. It is a good plant for spreading over the edge of stone-faced banks, or for growing on the face of a rockery, where it will flower freely from July to October. The leaves are divided into three acutely pointed lobes, and are elegantly shaped, something like those of the Vine. The flowers are in some plants rich blue, in others dark pink, and are marked conspicuously with black veins. They are as large as those of the native G. pratense. I met with the blue form in the garden of Mrs. Lloyd Wynne, of Coed Coch, to whom I am indebted for the plant. The pink variety I had from Dr. Lowe's garden on Wimbledon Common. I have never seen either of them in any other garden. *C. Wolley Dod, Edge Hall, Malpas, Cheshire, July* 24.

Judging Potatos.—It is unfortunate, but it is none the less a fact, that in the judging of Potatos at exhibitions, as a rule, more blunders are made than arise from the judging of any other garden product. Sometimes this arises, as was the case the other day at South Kensington, from a want of knowledge on the part of the judges as to the identity or otherwise of certain so-called varieties, or else from equal absence of information as to the points looked for in really good show Potatos. Such an award as was made recently at South Kensington, through which a collection of three dishes, two of which were Ashleaf Kidneys, was placed 2d, is all the more to be deplored because these kinds have been proved over and over at Chiswick to be identical. Had these Ashleafs, under similar names—viz., Veitch's and Rivers'—been put up in a collection of even twenty-four kinds at the International Potato Show, disqualification of the whole collection would undoubtedly have followed. Really, it seems incredible that any gardener should be unable to produce samples of three distinct kinds of Potatos at the end of July; and still more, that any other gardeners acting as judges should commit so grave an error as to give to such an exhibit the 2d prize. Some of this blundering arose also, doubtless, from the fact that too many gardeners know little of newer kinds, and refuse to admit that certain old ones can be excelled. At South Kensington it seems, unhappily, that the selection of judges is limited to the Fruit Committee, and that body is just now deplorably lacking in knowledge of Potatos; but practical knowledge does not seem to be an essential in many of those who are so arbitrarily selected as members of that body. As there is to be a Potato competition for twelve dishes on the 26th inst., and very extensive competitions in October next, it is to be hoped that

Mr. Barron will be permitted to obtain the very best Potato judges, and will not be tied to members of the Fruit Committee. *Pebble White.*

—— I see the judging of the Potatos at the Royal Horticultural Society's show on the 22d ult. has called forth a severe rebuke from your reporter. It is to be regretted that no fixed rules are laid down for the guidance of those placed in the unenviable position of having to award prizes where the varieties shown were so numerous and varied. The rule adopted by myself and coadjutor was to award the prizes to those which appeared the ripest and most fit for early use regardless of synonyms. Your reporter certainly went out of his way in stating that the 3d prize lot was the best there. Does he think International Kidney equal to either of the varieties in the 2d award? The only fault that he can find is that Rivers' and Veitch's Ashleafs are notoriously the same. If so there was a marked difference between the varieties in appearance, as shown and rightly awarded the 2d prize by *M. M. P.* [Our correspondent's letter convinces us that the adverse criticism of our reporter was just and well founded. On his own showing "M. M. P." did not comply with the requirements of the schedule. ED.]

Potato Disease.—Mr. W. G. Smith in last week's *Gardeners' Chronicle* (July 26) tells us that "We have now passed July 20, and we have had no disease," and concludes therefore that Mr. Jensen's theory of late and early seasons breaks down, inasmuch as this year (1884) the disease should have put in an early appearance. Now, the facts of the case are, that the disease appeared at an unusually early date this year, but owing to the excessive heat and dryness of June, its development has been arrested. Why Mr. Smith says "we have had no disease," I really cannot imagine, because at the meeting of the Scientific Committee on June 24 he himself reported the disease from the neighbourhood of Bedford. If "we had no disease," why did Mr. Griffin report it from Pembrokeshire in the *Gardeners' Chronicle*, June 28, p. 835? How came Dr. Masters to report to the Scientific Committee held on July 8 that it had appeared at Chiswick prior to his visit on June 30? Why does Mr. Smith say in his report on the Potato crop that it has appeared at Dunecht in Aberdeenshire? or Mr. Horsefield in Wiltshire, or Mr. Hazel, that he found the "Schoolmaster" severely attacked in Dorsetshire on July 21? Why does Mr. Sowray say it has appeared in Gloucestershire? In the *Gardeners' Chronicle* for the previous week Mr. Smith says, "The fungus of the Potato disease varies in its time of appearance, just as noxious insects vary." The connection between the Potato disease and insects is, however, I venture to say, not very close. Certainly a figure appeared some years ago in the *Gardeners' Chronicle* of an aphis with a resting-spore in its leg, drawn by Mr. G. Smith from one of Mr. Smee's preparations, put up at the time of first outbreak I believe. This, however, seems to me rather to favour the view, that the so-called resting-spores are those of a Pythium, especially as De Bary found the zoospores of P. vexans attach themselves in great numbers to the legs of flies and recently killed mites, where they developed abundant mycelium, and subsequently formed oospores in the interior of the mites, &c. With regard to the relative late and early appearance of the disease during the past seven years, I can only say my table was constructed from the data given in the *Gardeners' Chronicle*. In order to be the more sure of obtaining an accurate abstract I looked over and summarised the reports purposely, without looking at the date of the year, so that I should not be biassed by any preconceived notions as to which was an early or which a late year. I found that of the 139 reports sent in in 1877, which were made up from July 26 to July 30, no less than seventy said the disease was absent—absent, of course, from a gardener's point of view. I therefore set 1877 down as a year in which the general outbreak was late, although I was quite aware that Mr. Jensen found 1877 to be an early year in Denmark. That Mr. Barron sent badly diseased Potato plants to the Scientific Committee on July 4, 1877, does not alter the fact that 50 per cent. of the gardeners in Great Britain three weeks later reported their gardens free from it. Such being the case, I must continue to differ from Mr. Smith, and still hold that 1877 was a late year in this country. It is not Mr. Jensen's idea that these alternations of late and early follow each other with the precision of an oscillating pendulum. He speaks of it as a tendency to alternate between late and early, subject to the weather. Mr. Smith says, with perfect truth, that the time of the general outbreak is regulated by the warmth of the sun, the rainfall, and other causes. One of the other causes is that some years more sets are planted with the disease hybernating in them than happen in other years, therefore there are a greater number of foci from which the disease can start some years than others. The present year has been one in which many sets were planted in which the fungus was hybernating, hence in May and June a great number of diseased shoots were sent up, but the spread of the disease was arrested all through June by the excessive heat and absence of rain. De Bary has pointed out in his remarks upon the hybernation of the Potato fungus in the Royal Agricultural Society's *Journal*, that the first appearance of the disease in spring is followed by the dry season of summer, and that it does not spread extensively until the rains of autumn, "or, as was to be seen in 1875, the wet weather which occurred in the height of summer." In point of fact, the disease makes its first appearance always about the same time, that is to say, as soon as the Potato plants appear above-ground. But this is a totally different thing to the general outbreak. The time at which the latter comes depends upon the sun, the rain, and other causes, notably upon the number of diseased sets. What the amount of sunshine and rainfall are to be in any year we cannot predict, but we can form an estimate as to whether the diseased sets planted in any given spring are likely to be few or many. We know that those tubers which are first attacked by the fungus in any year are totally destroyed by it, so that the fungus and the tuber perish together. The case, however, is different with the tubers which are attacked late in the year—they are not so totally annihilated by the disease; hence, in any year in which the disease appeared late there will be more of these infected tubers available for producing diseased sets the following spring. In other words, an early is most likely to follow a late season, and *vice versâ*. *Charles B. Plowright*, 7, *King Street, King's Lynn, July* 28.

—— For some weeks prior to last week I had a pleasant open invitation to spend a few days in Wilts, Gloucester, and Somerset, for an examination, under favourable and pleasant circumstances, of the churches and prehistoric structures near Bath, Wells, Devizes, Avebury, &c. I selected last week because I knew from experience that it would probably prove to be the Potato (or rather Peronospora) week, and fungology and archæology have always gone well together. There is a sort of heterœcia or metœcia in the combined studies; when one has feasted on prehistorics Peronospora comes in as an agreeable and healthy change. As soon as I arrived at the house of my host on Tuesday, the 22d inst. I sought out the head gardener, who said that a week or two before a slight attack of the murrain had been noticed in a special part of the garden, surrounded by walls, and some of the tubers destroyed. We then walked through the rows, but not the slightest indication of disease was to be seen. On Wednesday I again walked through every Potato row, with the result that no disease could be detected. Thursday morning early the walk was repeated, with the same result. We were out late that day, and did not dine till eight. Between 8 and 9 o'clock in the evening the gardener sent in a letter to say the disease had appeared on the Potatos that day. It was then too dark to see, or I would have gone to the rows again; but early the next morning I again walked through the Potatos, and the tips and edges of the leaves through the entire crop were thinly sprinkled with the dark disease blotches of the murrain. On gathering the leaves, the greyish-white mildew of the Peronospora was seen everywhere beneath. He must be a daring and even reckless man who would assert that in this instance the Peronospora suddenly rushed up from the tubers and travelled to the tips of the leaves. Of course a cloud of spores was carried over the Potatos by the wind, and these living spores at once germinated and produced the putridity in the most exposed parts of the foliage. The disease was bad at Avebury and round Silbury Hill, invariably the worst in weedy, crowded, badly cultivated cottage gardens. A patch of Magnum Bonum at Avebury, although surrounded by badly diseased rows, showed no disease. At Wells Beauty of Hebron was attacked. In all other places visited the Potatos were in the same condition—a thin sprinkling of the Peronospora on the leaves, some varieties being worse affected than others. The crops raised by railway porters near country stations were in several instances in a bad state of disease, accelerated by the overcrowding of the plants. It seemed pretty clear that the badly tended places near railway stations and the crowded positions in little stifling cottage gardens acted as hotbeds for the fungus of the murrain. *W. G. Smith.*

Potato Disease, South Bedfordshire.—The showery close weather of the last few days has caused the Potato disease to spread in a marked manner. A good many positions in South Beds are, however, still quite free from the murrain. In other places the Potato plants, as seen in the fields, have their leaves thinly sprinkled with the purplish-black spots of the disease. The spots are chiefly on the tips and edges of the leaves. In some instances, as in the 8 or 10 acres of workmen's garden plots just outside Dunstable, the disease is now in a bad form. Certain plots exhibit the murrain in every plant, and the whole produce will, no doubt, be rotten in a very few days. On returning home in the evening we noticed the thin white mists, so common at this time of the year, hovering over the fields close to the ground. These mists, after close hot days, as has been so many times pointed out by your able correspondent, "A. D.," cause the Potato disease to spread like wildfire. A friend at Dunstable has tried the following curious experiment. He had White Elephant Potatos badly diseased last year, and he selected diseased tubers and planted them in two long rows. By the side of these rows he planted other White Elephant Potatos, which were apparently quite sound. It is a curious fact that in the produce from the diseased tubers every plant is healthy, and the plants from the apparently sound White Elephant tubers are the only ones which show the disease in the garden. One plant which had been raised from the diseased sets we had dug up for inspection, and every tuber proved to be quite sound. Such instances are familiar to growers. *W. G. Smith.*

Foreign Correspondence.

BOGOTÁ AND HOW TO GET THERE (*continued from p.* 830).—The Indians bring in Odontoglossum Alexandræ and sell them about the streets of Bogotá, or supply the nurserymen or Orchid hunters there with them at the rate of 4 dollars, or 13*s.* 4*d.* per hundred; these plants all come from the Patcho district. It is a notorious fact, even in Bogotá, that, while the price paid for imported plants in London has been steadily decreasing, the price asked by the Indians have been as steadily increasing. We may take 1000 plants as an average cargo or mule-load from Bogotá down to Nonda, and we may take 8 dollars as an average price for a mule. That means that it will cost close upon £8 a thousand at Honda without any packing or dues upon the road. The road dues are light, so that we may dismiss them from our calculations—but the packing comes to a considerable item, and it has increased very much of late years. Formerly, most of the Orchids arrived packed in two-dozen brandy cases of Martell or Hennessy, but now no Colombian merchant will part with these, as a large trade in forged brandy has sprung up, and it is necessary that the spirit should be sold in the original bottles packed in the original cases. This spirit should be carefully avoided by every one, or the end may be rapid. The cases made on the spot for 1000 plants will come to at least £4, so that the plants arrived at Honda will cost £12, then there is an agent and his fee, then the most precarious part of the journey, that in the Magdalena steamer from Honda to Barranquilla, where the plants are most liable to suffer from two causes—first, their proximity to the steam-chest; or, secondly, their exposure to the sun. The voyage down is liable to being protracted to three months, if the river is low; and the delay caused by being stuck on a sandbank is very annoying and irksome to the traveller, and means nearly certain death to the plants. When they have arrived at Barranquilla there are either Mr. Stracey's or Mr. Struntz's fees to be paid, according to whether you send them by Liverpool packet, or by Royal Mail steamer to Southampton; the latter route is preferable, as they are getting accustomed to the treatment of plants on board these vessels, and they place them under decks in the fore saloon, where not much harm can happen to them. By the time the plants have arrived in England they will have cost £20 per 1000, and out of the 1000 perhaps 800 will be alive—perhaps none. To prepare the plants for their journey at Bogotá a room will be necessary to dry them in, and this will take up time and money. It would not be safe to start off plants full of sap and moisture at once.

One of the favourite excursions from Botogá is to the Falls of the Tequendama, the outlet through which the waters that once formed the lake of the Sabana forced their way. I was told by the Colombians that I should find it something wonderful in falls—that Niagara was not to be compared to it. On my way there I left Bogotá about 3 o'clock one afternoon, and drove to Soacho in three hours, then dinner and bed. At 4 o'clock the next morning early coffee, and a pony for an hour and a half to the Falls. It is absolutely necessary to be at the Falls before sunrise, or the sun's rays, mixing with the spray, leave one with a most confused idea of the beauty of the scene. The vegetation is most glorious, but there is not the wealth of the Orchid world that I should have expected. Masdevallia Shuttleworthii is the most striking of the Masdevallias, and is distinguished by

the largeness of its clumps and the delicate hue of its flowers. There were also some Odontoglossums, but I could not distinguish them for certain. The Ferns were glorious, and attained a degree of perfection that I had never seen before; however, they were all well known, and in ordinary cultivation in English greenhouses. The height of the Falls, according to the best authorities, is about 600 feet and the width at the top 40 feet. My aneroid made the fall about 580 feet, but a Colombian will tell you that it is 1800 feet. The scramble from the top of the Fall through the thick undergrowth is pretty tough, and there is an absence of paths about it—they will have to be cut when Cook personally conducts his tourists to Bogotá—that gives one an impression of the wildness of the country. The view from the foot of the Falls after the sun has risen is totally different from that before the rising of the sun. The spray forms rainbows ever changing, and it is a scene most gorgeous; but, as I have said, to see the Falls themselves one must see them before sunrise. After lunching *alfresco*, and returning to Soacho, the carriage took me back to Bogotá.

Another excursion is to the natural bridge of Pandi, and close to a good Alexandræ ground. The bridge is formed by rocks wedged together, and seems almost human in its architecture, and the rocks in its vicinity seem to have been carved by the hand of man in some prehistoric time, but they are undoubtedly the work of Nature. After seeing all that was to be seen in the neighbourhood of Bogotá, and only regretting that I had started two months too late, I returned to the Magdalena river and its heat. Several excursions that I took up the country to Ambalena and its tobacco manufactories, and the cattle ranches of an Anglo-German firm, and the general hospitality that I met with throughout the country, repaid me for my want of success in the Orchid-hunting line.

The country around Ambalena, which is on the Magdalena, is totally destitute of Orchids, but the grass is wonderfully good for cattle, and most of the meat used in Bogotá comes from there. Another excursion from there is to Kali in the Cauca, about four days on good mules; here is the herbarium of Herr Lehmann, who, if he is at home, will be always delighted to see any botanists or in fact any one from Europe. Here Masdevallia chimæra, Harryana, Veitchii, trochilus, &c., are to be found, and in fact any Orchid hunter coming out from Europe would do well to make Kali his headquarters. From thence I returned in a dug-out canoe to Honda and down the river in a steamboat which was perpetually coming to grief. We had her badly snagged and as nearly as possible went down; half the cargo—which consisted of Coffæ—was spoilt, and left in the river.

The principal vegetable productions of Colombia, which are exported to Europe, are all showing a most marked and sad decrease. The bark of Cinchona suffers more particularly in this way than any of the others, and it is a moot point with the cultivators whether they shall go on with their plantations or not. They send it all to Milan to be manufactured, after trying to manufacture it themselves in Colombia; but the laziness and carelessness of the natives caused them to stop their manufactories there. Ivory nuts, which were exported to Hamburgh for a few years in large quantities, and which were made into coat buttons and children's toys, are now also a drug in the market. The falling price of Coffee and the expense and difficulty of transport to the sea have rendered that also a non-paying crop, except a small quantity for local consumption. Cocoa, which did pay very well, and still does pay, has been attacked by an insect which has killed the bushes as the Phylloxera has done the Vine. In addition to all these drawbacks there are the locusts, which eat up everything, particularly everything choice or newly introduced.

Sugar has never been exported from Colombia, and this is owing to the lazy disposition of the natives, who will not take the trouble of perfecting distillation. They distil two spirits from the cane—white rum and *anason*—a mixture of rum and aniseed, and a particularly nasty mixture though drunk by the natives with avidity. Chicha, made from Maize, is also a favourite drink and very cheap—you can buy a bucketful for five cents; it is a capital restorative for an overtired mule. I have now gone through the principal districts of Colombia, as far as I have explored them for Odontoglossum Alexandræ, and I hope that I may have some imitators amongst our more adventurous amateurs in England. Next year I hope myself to go further afield in the Amazon regions, and to discover something new. *E. W. Walker.*

FORESTRY.

Work for the Month—Planting.—By the middle of August the transplanting of evergreens may be carried on with every certainty of success, provided sufficient care is bestowed on the operation. Wet or cloudy weather is preferable for the work, but should the weather be dry an occasional watering and mulching of the ground surface will greatly help towards a successful removal.

It should, however, be remembered that water of about the same temperature as the soil in which the plants are growing is far preferable to what is obtained from springs or deep wells. Where none but the latter is readily got, it should stand in open tanks for at least a couple of days previous to being used. A word of warning regarding the lifting and replanting of shrubs may not be out of place.

In lifting avoid cutting or straining the roots, and raise with a good ball of earth attached—as large as practicable considering the distance to which they are to be removed and the nature of the plant in hand—both of which will much minimise the risk of transplanting at any time, and during dry weather in particular. The pits should be opened of sufficient size so as to avoid crowding or cramping of the roots, which in all cases should be spread out to their full extent, and the bottom of each pit made loose with a pick or spade.

The plant being placed in position, and not deeper than it stood in the nursery border, the soil is added and slightly trampled on until it is nearly level with the surrounding ground. It is a mistake to heap the soil around a plant until a small mound is formed, as this is well known to prevent, to a great extent, the rain descending in quantity to the roots. Where large trees or shrubs are transplanted they should at once be securely staked to prevent wind-tossing, which not only retards root growth, but is highly injurious to the constitution of the plant as well. Prepare new enclosures for planting by having the land fenced, cleaned of all scrub, and, where necessary, drained. Thorough drainage should take precedence of all other operations, more especially where the ground is damp and of a retentive nature. In such ungenial soils, or where plantations have previously existed, open good-sized pits, and expose the soil turned out to the ameliorating influence of the winter frosts. The young trees may then be planted in spring with far more certainty of success than if inserted immediately after the conclusion of draining and pitting.

Thinning.—The cleaning up and thinning of plantations for the first time may now be proceeded with. It is, however, not advisable to cut useful timber at this time unless for immediate use, or where improvements are in hand. Mark heavy timber for future felling. This can best be done when the trees are in full leafage, as it enables not only the unhealthy, but such as are crowding each other, to be removed. In many districts trees that were blown down by the heavy gales experienced during the opening weeks of the present year, have not yet been cut up and removed. Wherever practicable this should at once be attended to, so that the plantations may present a clean, tidy appearance during the shooting season. Prune off dead and twisted branches, stub out or otherwise remove such trees as are dead or appear unhealthy, and pay strict attention to ornamental or other trees growing contiguous to or alongside carriage drives and walks, as the branches of these are apt to infringe and prove anything but pleasant to foot or other passengers. Switch and clear up plantation drives and roads, and see that all woodland drains are free from rough herbage and fallen *débris*. Where game is abundant such work should be completed without delay, and before harvest operations are commenced.

Nursery.—With an abundance of rain and moderately warm weather weeds are growing apace, and will require the adopting of strenuous measures to keep within bounds. Sunshine is much wanted to ripen tree growth, as well as crops of all kinds. Trees upon which budding or grafting was done early will now require attention in the way of removing young shoots, the untying or slackening of bandages, and, as occasion requires, the addition or removal of clay. Towards the end of the month insert cuttings of such plants as are propagated in this way. The cuttings may be made of well ripened shoots about 9 inches in length, and inserted in previously prepared beds of rather a sandy texture, two-thirds of their length being placed underground. Layering may also be commenced, more especially from stools that have been previously prepared for the operation. This is a capital way of extending game coverts, more especially those of Laurel, Privet, or Rhododendron, and should be practised by all having these in charge. Preparatory to autumn removal young trees in the nursery border may be side-pruned with advantage. Double or contending leaders should also be removed, either by pinching or pruning, and a well-balanced head at all times induced. Collect ditch cleanings, road scrapings, parings, and decayed vegetable matter, and form into a compost with lime, which will make an excellent top-dressing for the nursery borders. An occasional mixing or turning must, however, be given preparatory to the compost being made use of. Attend to seed-beds generally; the present weather is all that could be desired for the removal of weeds from these.

Fences.—Form new and repair old fences in the forest, and leave them in the best possible state for preventing the inroads of cattle, horses, or sheep. The tarring, painting, or varnishing of all continuous iron and wire fences, as well as those of wood, should be pushed forward during dry, warm weather. Remove herbage from along the line of fence previous to painting, and rub well down to the ground level. Tree guards and rabbit-proof nettings should also be examined and have all defects remedied.

Roads.—During the present continuance of wet, damp weather, the utmost vigilance will be required to keep drives and walks in anything like a sound, passable condition and free from weeds; opportunity should, therefore, be taken of every dry day to further the work as much as possible. Salt or carbolic acid may be successfully used where weeds are abundant, but in the application of either great care is necessary to prevent the borders being injured by too close a contact. The destructive properties of these as weed killers are most marked in dry weather. Prepare "metalling" for use later on, and see that a sufficient supply of gravel is obtained previous to being required.

Drainage.—Repair river banks that have been broken into by the late floods, and, as a precaution for the future, plant Willow cuttings along the verge of the water. Clean out watercourses and plantation drains when the water, as is generally the case in August, is at the lowest ebb, and remove all accumulations of gravel or leaves from the mouths and along the courses of closed drains.

Hedges.—Evergreen hedges should now be switched or clipped, but in most cases the former plan is to be advocated. To such hedges as are apt to become bare near the ground a slight switching, at least twice in the year—say early in July and again in August—will be very beneficial, and greatly help to induce a young growth near the ground level. Clean hedges by keeping them free from grass and weeds. A slight stirring of the surface soil is also of value, allowing, as it does, the free penetration of rain down to the roots.

General Work.—Bind faggots for home consumption, and have them stacked or stored during dry weather. The manufacture of charcoal will also demand attention during the present month, as well as the splitting of firewood and large branches for oven purposes. Grass, Ferns, and Furze should now be mown from amongst young trees, and along the margins of plantations. If done previous to shedding their seeds, a great amount of trouble will be saved hereafter. As felling and planting operations will soon commence on a large scale, all odd jobs of the above nature should be wound up by the end of the present month, so that the workmen may be concentrated when required. *A. D. Webster, Penrhyn Castle, North Wales.*

Florists' Flowers.

The Carnation and Picotee.—The annual exhibition of the Southern section of the Carnation and Picotee Society affords a good opportunity to become acquainted with the new varieties, and to compare them with those already in cultivation. It is very pleasant, too, to find that the exhibitions have been the means of creating a great and wide-spread interest in these beautiful and sweetly perfumed flowers; and it may not be amiss to say that the society in question has been organised and is conducted on the very widest possible basis. There are evidently some members of the horticultural community who do not seem to be aware of this, and may do harm by producing a false impression, although those who know better may be quite aware that the writers in question are merely parading their lack of knowledge.

Those who do not cultivate a full collection of Carnations and Picotees in their own garden can scarcely be expected to obtain such an accurate knowledge of the various classes as those who study them daily under their own eyes, and who are able to compare one variety with another in the plant, bud, and flowering stages of their growth. For although two cut flowers placed together in a stand may have a very slight shade of difference between them, if they could be seen growing together in the garden the difference between the plants and flower-buds might be very striking indeed. The bizarre and flaked Carnations, the broad and narrow edged Picotees will always be held in highest esteem by those who have given the Carnation the most careful attention. They are divided into twelve classes or sections, and those who give their attention to seedling raising wisely observe the classes in which improvement is required, and give their first attention to that class. These choice varieties of Carnations and Picotees are quite hardy out-of-doors, and they flower freely enough in the open borders, but to bring the blooms up to the highest state of perfection it is necessary to cultivate them in pots, to be placed under glass when the flowers are opening. They ought to have ample ventilation, and be shaded from very bright sunshine when under the glass, but not too much so.

The improvement that has been made this season in some of the classes is quite as great as we have seen in previous years. In Carnations Mr. Dodwell has again made the most progress, while the Rev. C. Fellowes has added some very beautiful Picotees to the long list of choice varieties raised by him, and already in all good collections. The popular border Carnations are also not being neglected. Messrs. Veitch, of Chelsea, have planted a large number of varieties in beds and groups in their Chelsea nurseries, many of them novelties. Some of these have no chance to obtain Certificates as cut flowers; it is necessary to see their effect in the open garden. The dwarf Clove Ouida, for instance, alluded to at p. 43, was passed by the Floral Committee, and also by the judges of the National Carnation and Picotee Society; had it been seen in growth along with other Cloves it would probably have been certificated by both committees. To do the border Carnations full justice they ought to be lifted from the open ground, and be exhibited as plants. In no other way can their merits as decorative plants be ascertained. The form of the flowers must be subordinated to profusion of bloom and habit of the plants. In the case of show flowers intended for exhibition, quality, form, and colour of the individual blooms must hold the first place.

I have in previous years passed in review the most notable flowers in the various classes, and have recorded the progress made in the previous twelve-months. It is a great pleasure to again undertake the task. Beginning, as usual, with scarlet bizarres in Carnations, the best new variety in the exhibition was Joseph Crossland (Simonite); it was grown in our collection at Great Gearies, and has greatly improved since it was exhibited last year, when it was not thought to be good enough; the scarlet and maroon flakes are very bright: it received the 1st prize and a First-class Certificate; the 2d prize was awarded to H. A. Rolt (Dodwell), a promising flower with broad flakes of light scarlet and maroon on a good white ground. In the crimson bizarre class there were several new seedlings exhibited, by far the best being Mrs. Francis Whitbourne (Dodwell), grown and exhibited from Great Gearies. The flowers are finely formed, the petals being slightly cupped, the colour pinkish-crimson and rich purple on a clear white ground. It received a First-class Certificate and the 1st prize in this class. The 2d prize and a First-class Certificate was awarded to Crimson King, raised by Mr. Dodwell, and exhibited by Mr. Douglas. It is distinct from every other Carnation in its very dark purple flakes and rich crimson on a good white ground colour. The plant is very vigorous and of good habit. One or two very good scarlet flakes were exhibited by Mr. Dodwell, and a good rose flake by Mr. Douglas, but they were not even brought before the judges, owing to the visitors being admitted and crowding round the exhibits, where the flowers were scattered about in the various classes.

Mr. Charles Turner, of Slough, exhibited some very fine new Picotees, the productions of the Rev. Charles Fellowes. In the light purple class Juliet received the 1st prize; it is a very large flower, with a good clear white and bright purple edge, which was not quite smooth enough to entitle it to a certificate. Duchess is an exceedingly good flower, which must be classed in the heavy scarlet edge; and as Constance Heron, by the same raiser, surpassed any other in this section, so does Duchess surpass Constance Heron in its broad, well-defined edge and pure white. It received the 1st prize in its class and a First-class Certificate. Maude promises to be the best light rose-edged Picotee yet raised; it is very clear in the white, with a very even, narrow edge, and the broad, well formed petals of Simonite's Mary. This also obtained 1st prize and a First-class Certificate. Orlando is a promising variety, very distinct. It has large well formed flowers with a bright scarlet edge.

Messrs. Veitch, of Chelsea, received First-class Certificates for the following varieties, selected from a large number of border flowers exhibited by them:—Celia, delicate rose-pink; John Barnet, a very fine kind with deep pink flowers; Mrs. Glen, a very handsome primrose-coloured kind with broad well-formed petals; Miss Mary Anderson has similarly coloured flowers, which would have been certificated but for the presence of Mrs. Glen, which was thought a better formed flower; Harvester, a most promising buff-coloured flower of the same colour as Florence—it has smooth well formed petals, whereas those of Florence are fringed. The Messrs. Veitch also obtained a First-class Certificate for their distinct and beautiful rose-coloured Pink, Rose Perfection. A large bouquet of its rich rose-coloured flowers was exhibited.

Carnations and Picotees in the Open Ground.—While the exhibitions of the National Carnation and Picotee Society are undoubtedly doing much to add to the popular knowledge of these flowers and assist their cultivation, the fact that, in order to have such refined flowers as those seen on the 22d ult. there must be special and careful cultivation in pots, acts somewhat as a deterrent. We have known persons who visited a show of this character who took a list of names, ordered plants of them, and made a bed in the open air, and when the plants flowered found the blooms were not equal to those they had seen staged at the exhibition. This result was but natural, and no fault at all of the varieties or the vendor of them; there was simply lacking the careful culture, constant attention, and the practice of those little arts which enables the skilful florist to present his flowers to view in such attractive forms. And yet the Carnation and Picotee are flowers for the million, as is abundantly exemplified in the London Road seed grounds of Messrs. Sutton & Sons, at Reading. There can now be seen in full bloom a very large patch of Carnations and Picotees raised from seed sown last January twelve-months. When large enough the plants were placed in the open ground in prepared beds, where they grow prodigiously at the present time; being carefully tied up to stakes, they resemble a series of diminutive Wheat sheaves laden with charming flowers in the place of ears of corn, each plant producing flowers by the hundred. There are bizarres and flakes, edged flowers and selfs, many of the latter being exceedingly beautiful and of high quality; and these are what the Continental growers call "foxes," what we in this country are terming "fancy" Carnations, not a few of very eccentric marking, and all very pleasing. Bushels of flowers could be cut from the beds, delicately as well as richly coloured, and highly fragrant. There is nothing in the way of thinning or disbudding; each plant has its own bent, and produces in happy plenteousness its welcome blossoms. Here, then, is a way in which any garden almost can be made to smile with Carnations and Picotees. Get good seed, sown early in the year, plant out in good soil, give the plants support by staking them, keep the soil clean and the plants watered if the weather be very dry, and the cultivator will be abundantly rewarded. But get good seed: it is as easily attainable in these days as that of indifferent quality. *Z.*

THE POTATO CROPS OF 1884.

(*Concluded from p.* 107).

SCOTLAND.

Aberdeen.—The Potato crops in this district, both late and early varieties, are all that can be desired; they are strong and healthy, and even in the tops, and without that dreaded spot which is a sure indication of disease. All I have dug in the garden here, and all that I have seen elsewhere, are a heavy crop, large in tuber, and of good quality. *John Proctor, Gr., Slains Castle, July* 23.

—— We have now had plenty of rain for the Potato crop, which, as a whole, I never saw looking better, both in field and garden, and as yet there is not the least appearance of disease. I have now been using Sharp's Victor for the past three weeks from the outside, with which I am particularly well pleased; the haulm is dwarf, and it is a good cropper, well shaped, and dry in comparison with Ashleaf, as I have tried both together. *R. Farquhar, Fyvie, July* 23.

Berwick.—The Potato crops look splendid, and there is no symptom of disease. We have lifted the early varieties for seed, and never had them finer, the quality being extra. *W. Richardson, Ayton Castle Gardens, July* 23.

Clackmannan.—The Potato crops look very promising, and there is no appearance of disease as yet. If the weather keeps good we expect that the return will be above the average. *Thomas Ormiston, Alloa Park Gardens, July* 25.

Cromarty.—Early sorts are abundant and good in size and quality; later crops are looking very promising in both gardens and fields. With a few exceptions, where the haulm has got slightly blackened with frost, there are no signs of disease at present. *J. McKay, Tarbat Gardens, Park Hill, July* 24.

East Lothian.—The Potatos we have been using from the garden—Old Ashleaf, Myatt's and Veitch's Kidney—are a fine crop and of excellent quality; all the other varieties look well, there being no appearance of disease. The field Potatos are very luxuriant and promising, in fact they look as well as ever I have seen them at this time of year. *L. Dow, The Gardens, Newbyth, July* 23.

—— Early Potatos have been very fine, especially Old Ashleaf Kidney, which is much grown here, being preferred to any other for flavour. In the gardens and fields around all varieties look well and free from disease. *Wm. McKelvie, Broxmouth Gardens, Dunbar, July* 23.

Fife.—The Potato crops in this district, so far as I have seen, look remarkably healthy. There is no appearance of disease. *G. Ramsay, Fordell House Gardens, Inverkeithing, July* 23.

—— Very fine crop. No sign of disease. *W. Henderson, Balbirnie, July* 22.

Forfar.—Potatos are growing most luxuriantly since the late rains, and promise a most abundant crop. There are not many ready for use hereabouts as yet. *James Mitchell, Gr., Panmure, Carnoustie, July* 23.

Inverness.—The Potato crops are very promising, the stems and tubers being free from any symptom of disease. Of kinds, Early Regents and Victorias have developed rather excessive haulm, which retards the growth of the tubers a good deal. The tubers of Fortyfold, Taylor, and Grampian, are normally developed; the former are quite mealy and ready for table, the latter are rather soft. On the whole, the Potato crop in the gardens and district is the most promising, both as regards freeness from disease, abundance, and size of tubers, that I have seen here for a long series of years. *Angus Macdonald, Balmacaan, July* 22.

Kinross.—The crop everywhere looks well. It is too early for this district to speak about disease, very little of this county being less than 300 feet above the sea (here we are over 500); so that unless

in gardens none have been yet dug. My kidney varieties are a good crop and of very fair quality. *John Fortune, Gr., Blair Adam, July* 25.

Linlithgow.—With regard to the above, as yet all is safe and luxuriant. *W. Muir, Hopetoun Gardens, July* 23.

Nairn.—The Potato crop is looking well both in gardens and fields. *James Manson, Kilravok Castle, Fort George, July* 24.

Orkney.—The Potatos in this district are of excellent quality, and there is no appearance of disease as yet. *Thos. McDonald, Balfour Castle, Kirkwall, July* 23.

Peebles.—The crop looks well, and there is no sign of disease as yet. *Malcolm McIntyre, The Glen, Innerleithen, July* 26.

Perth.—The plants are healthy, with no appearance of disease, neither in the later or early sorts, the crop being a full average one. *D. Doig, Rossie Priory, Inchture, July* 23.

—— Potato crops very promising. The fine dry weather we had in May and June seems to have favoured them much. *John Robb, Drummond Castle Gardens, July* 22.

—— Early crops of very fine quality, and good as regards yield. *P. W. Fairgrieve, Dunkeld, July* 24.

Renfrew.—Potatos in this district are looking well, the early sorts are a good crop, and excellent in quality. *Thomas Lunt, Ardgowan, July* 25.

Ross.—The Potato crop looks well in this district. *D. Harvey, Invergordon Castle, July* 25.

Sutherland.—Good crop of excellent quality. *D. Melville, Dunrobin, July* 25.

West Lothian.—There is promise of a good crop at present, but in some localities where early sorts for first use are grown, owing to the continued dull wet weather the tops show signs of disease. *J. Moyes, Dalmeney Park Gardens, Edinburgh, July* 25.

ENGLAND.—NORTHERN COUNTIES.

Northumberland.—In this district the crops are looking exceedingly well, and so far I see there are no signs of the disease. The early varieties are turning out very well. *Thos. Bowie, Chillingham Castle Gardens, Belford, July* 23.

Durham.—Garden crops are clean and good in quality. Our early varieties were lifted without their ever having been wet, not even by a slight shower all the time they were in the ground: quality good, but small in crop. Late varieties are looking well as yet, and there is no disease. Field crops also look well. *J. Hunter, Lambton Castle, Fence Houses, July* 25.

Yorks.—Early Potatos are free from disease, but the crop is very light, though good in quality. Late Potatos look promising, and are very healthy. *R. C. Kingston, Brantingham Thorpe, Brough, July* 23.

—— The early sorts in this district are very good, and we have found no disease. The late field Potatos look very promising. *Jos. Shaw, Nunappleton, Bolton Percy, July* 23.

—— Early Potatos are splendid in quality and a good crop. No disease up to this date. Late sorts are looking well everywhere. *James Fowler, Harewood Gardens, July* 23.

—— Early Potatos are light in crop but good in quality, and no disease. Late sorts look well; in fact, I never saw them look better, especially in places where they are pretty well planted. *William Culverwell, Thorpe Perrow, Bedale, July* 23.

Lancashire.—It is too early to form an opinion of the Potato crop generally in this neighbourhood; at present they are clean and small. The early varieties appear checked in growth; later sorts are looking well and promising. *H. Lindsey, Huntroyde Park, Burnley, July* 22.

—— The Potato crops in this locality look remarkably well, especially the late sorts. Early varieties suffered a little through the drought, but not so much as might have been expected, and on the whole the yield is good. *F. Harrison, Knowsley Gardens, Prescot, July* 25.

—— The earliest were small at first, but they have improved since the rain, and the crops altogether (*i.e.*, second and late) are likely to be good, and so far all are free from disease. *W. P. Roberts, Cuerdon Hall, Preston, July* 23.

—— Early kidney Potatos are very good both in size, quality, and productiveness, and are free from disease. I have never seen late crops look so promising. *Andrew Jamieson, The Gardens, Haigh Hall, Wigan, July* 23.

MIDLAND COUNTIES.

Cheshire.—Early kinds are moderate in crop, and excellent in quality. Later kinds are looking very promising, with no appearance of the disease as yet. *Robert Mackellar, Abney Hall Gardens, Cheadle, July* 26.

—— Early kinds are light in crop, but good, and very few are diseased; but should the weather continue so wet much longer, I fear the disease will make rapid progress. Later kinds, such as the Magnum Bonum, Champion, Schoolmaster, &c., look well on all sides. *Alfred J. Grant, Withington Hall Gardens, Chelford, Crewe, July* 25.

—— Early crops are sound and good, though light; late ones look well. *T. Selwood, Eaton Gardens, Chester, July* 24.

Derby.—The Potato crop is very promising, and the early varieties, such as Rivers' Royal and Myatt's Prolific, are very good. Up to this date I have not heard of an instance of the Potato disease in this neighbourhood. *Joseph Dawson, Stancliffe, near Matlock, July* 25.

—— Very good, and quite free from disease, but not quite so large as usual. *Thomas Keetly, The Gardens, Darley Abbey, July* 21.

Notts.—Both early and late Potatos look remarkably well, and up to this time there is no appearance of disease. *R. Carr, Welbeck Gardens, July* 24.

—— Early Potatos have been very small; late crops, both in garden and fields are looking remarkably well. I have not seen or heard of any disease. *J. Edmonds, Bestwood Lodge, Arnold, July* 25.

Salop.—All kinds of Potatos here, both in gardens and fields, are looking remarkably well, and show no signs of disease at present. *R. Milner, Sundorne Castle Gardens, Shrewsbury, July* 23.

Stafford.—Early Potatos are very good indeed this season, both as regards crop and quality, and so far are free from disease. Late varieties are looking remarkably well, and with favourable weather we should have good crops. *John Wallis, Keele Gardens, Newcastle, July* 23.

Leicester.—Early Potatos are very firm and good, but very small, owing to the dry weather. Late sorts round this district are looking well, and at the present there is every appearance of a general good crop. *James Maclean, Beaumanor Park, Loughborough.*

—— Early Potatos are a light crop, and the tubers are rather small. Late sorts look well, and the disease has not appeared yet. *Edmund Wainwright, Nevill Holt, Market Harborough, July* 23.

Northampton.—The Potato crops are very good. The early ones are turning out well, and late ones are looking well, with no sign of disease up to this date. *Edmund Cole, Althorp Park Gardens, July* 25.

Huntingdon.—Early Potatos are a light crop, but generally of good quality, and free from disease. Late varieties made little progress during the dry weather, but now look very well, with the prospect of a good average crop. *Wm. Kennedy, Kimbolton Castle, July* 24.

Beds.—The Potato crop is small, owing to the long continuance of dry weather, but very good. No disease at present. *Thomas Hedley, Putteridge Park, Luton, July* 23.

—— Early Potatos in this neighbourhood are a fair crop of good medium size, and at present there are no signs of disease. Late kinds in many places about here came up very irregularly, owing, no doubt, to the dry weather and want of tilth. We had a thorough good rain on the 9th inst., which was much wanted. *Charles Turner, Cranfield Court, Newport Pagnell, July* 24.

Oxford.—In this neighbourhood the Potatos are all that could be desired. The early sorts in the garden are both good in quantity and quality. The late sorts at present promise to be equally good. I have not seen or heard of any disease in the neighbourhood. *John Greenshields, Sarsden House, Chipping Norton, July* 23.

—— Early varieties are very good indeed, heavy crops of first-rate quality, and not the least sign of disease. Late crops are looking well, but I am afraid the tubers will not be large, as the weather is a little too dry for them. *Isaac Watson, Nuneham Park, July* 24.

—— Excellent crops, but disease has just set in. *J. Doherty, Wroxton Abbey, Banbury, July* 25

—— Garden varieties are turning out clean and so far free from disease. Early Snowdrop is a favourite here. Field varieties—Magnum Bonum and Paterson's Victoria—look remarkably well with abundance of flowers. *B. Hope, Middleton Park Gardens, Bicester, Oxon.*

Bucks.—Fine crops and almost free from disease. Veitch's and Myatt's are still our best first earlies. Lady Paget and Snowdrop are very promising second earlies. Sutton's Reading Hero is one of the best tall-growing main crop Potatos. When free from disease we find nothing better for midseason crop than Victorias. For latest of all we grow Magnum Bonum, planted a yard apart each way and moulded up singly. *J. Smith, Mentmore, July* 24.

—— The crop generally in this neighbourhood is excellent. We are taking up the early sorts and the quality is first-rate. *Thos. Bailey, Shardeloes Gardens, Amersham, July* 26.

Herts.—Early Potatos are good, and the main crop varieties look first-rate. I have not seen or heard anything of the disease this season. *George Norman, The Gardens, Hatfield House, July* 25.

EASTERN COUNTIES.

Lincoln.—Early Potatos suffered from the continued dry weather, and they are small but good. Late sorts look promising. I have not yet heard of any disease. *Thomas Vinden, Harlaxton Manor, Grantham, July* 24.

—— The crops look well in this neighbourhood, particularly the late kinds. Early sorts are small on light land, but particularly good on holding land. *Geo. B. Tillyard, Brocklesby Park Gardens, Ulceby, July* 25.

Norfolk.—All early Potatos in this district are now stored, having in some cases barely reproduced the seed owing to the long-continued drought. Late kinds, after the recent rains, are satisfactory, and as no disease has been noticed, an average crop may be expected. The standard sorts about here are the old Ashleaf, Beauty of Hebron, Magnum Bonum, and Champion. *A. Lancaster, Holkam, July* 23.

—— Owing to the drought the early Potatos are small but very good. The late ones are looking very well, but I hear some are getting a second growth not far from here. I have not seen or heard of any disease in this neighbourhood. *H. Batchelor, Catton Park, Norwich, July* 24.

Suffolk.—The very dry season sadly checked the growth of early crops of Potatos, particularly on our lighter soils, consequently a larger proportion of the tubers are under-sized. The haulm of later crops having taken less harm from the drought, the produce before lifting time may be expected to attain a more useful size. Now that we have had rain—about 1½ inch this month—up to the present there is an unusual absence of the symptoms of disease. *J. Wallis, Orwell Park, Ipswich, July* 23.

—— Potatos in this district will not yield much more than half a crop, except in some favoured places, owing to the excessive drought experienced in the East of England. The early sorts are very small, and I am afraid the late ones will start again and be of little use. Up to this time I have not seen or heard of any disease. *J. Mill, The Gardens, Rendlesham Hall, July* 25.

—— Potatos at present, although rather small sized, are a fair crop and of very good quality, with no appearance of disease. The late showers will no doubt greatly improve the size of late sorts. *Robert Squibb, Ickworth Park, Bury St. Edmunds, July* 23.

—— Sound, small, plenty in number and of good quality. Met with first sample of disease in one garden only out of all visited at Higham, on the 22d of this month. All samples in gardens and at flower shows quite sound up to this date. *D. T. Fish, July* 24.

Essex.—The early Potatos are small but very clean and good; the later crops look promising, but cannot possibly be a heavy crop. *Wm. Smith, Birch Hall, Colchester, July* 25.

—— Early Potatos are good but rather small, owing to the very dry weather. No disease at present. Late sorts look very well and promise for good crops. *James Vert, Audley End, Saffron Walden, July* 25.

Berks.—Potatos are a good crop and free from disease up to this date, but since the late rains they have commenced to grow out. *Thomas Jones, Royal Gardens, Windsor, July* 25.

Middlesex.—The crops are looking remarkably well. The early kinds, such as Myatt's Early Ashleaf Kidney and Veitch's Improved Ashleaf Kidney, are yielding good crops of clean tubers and free of disease. *T. P., Stanmore, July* 22.

MIDDLESEX.—Potatos generally are looking well, but in some places the early sorts have been so much affected with blight as to cause the leaves to fall off, leaving the stalks almost bare. Both early and late sorts are free from disease as yet. *John Woodbridge, The Gardens, Syon House, Brentford, July* 22.

—— All Potatos are somewhat later than usual this year, and so far, owing to the exceeding dryness of the soil, the produce has not been heavy. Still, not only do all the main crop kinds look well, but so far there seems to be an entire absence of disease. That is an unusual experience for so late a date as July 25. Very large breadths have been planted this year, but even should no disease appear the drought will prevent the crop from being unduly heavy. Growers just now are rather fearing that showers may induce super-tuberating in the late crops, but evidences of that are not yet common, and perhaps may not become so, as through all the dryness the tops have held up boldly. *A. Dean, Bedfont, July* 25.

—— Potatos, although somewhat small, are on the whole good. The disease showed itself about a fortnight ago, but has not spread to the extent of previous years, the late sorts being free. *J. Willard, Holly Lodge Garden, Highgate, July* 25.

—— The earliest Potatos were a much better crop, and individually larger than the exceptionally dry weather all through their growth, and the small haulm, would have led us to expect. The late crops, although they look fair in the tops, are evidently so far stunted in their partially developed tubers that second growth is certain to take place if there is much rain, without which the yield will probably be the lightest ever known. *T. Baines, Fern Cottage, Palmer's Green, July* 26.

SURREY.—Potatos are small, owing to the drought, but are very free from disease. *J. Child, The Gardens, Garbrand Hall, Ewell, July* 23.

—— Potatos are about an average crop and the quality good, although in many parts of this district they are very small owing to the drought. They show no sign of disease. *John Tanner, Tandridge Court, Godstone, July* 24.

—— Early varieties are not half a crop, mid-season and late varieties look well, and so far not the least sign of desease. *J. Burnett, The Deepdene Gardens, Dorking, July* 24.

—— Potatos have suffered very much from the intense heat and long drought; the early kidneys have turned out plentiful and good, but the late ones I fear will be small, if not badly diseased, as I see the haulm is getting spotted and going off very fast since we have had the heavy thunderstorms of hail and rain. The varieties that do best with me are Veitch's and Myatt's Ashleaf, and a selected one from Myatt's which I saved six years ago, which is more even and a week earlier than that variety; Wormleighton Seedling, Vicar of Laleham, Rector of Woodstock, Porter's Excelsior, Beauty of Hebron. *A. Evans, Lythe Hill, Haslemere, July* 25.

SOUTHERN COUNTIES.

KENT.—The Potato crops will be under the average, as a rule, in this district. The weather has been too dry, and the haulm is short, except in a few instances on very fine land, and where manure has been lavishly supplied. At present the quality is good, though the tubers are small, and there is no indication of disease. Upon lighter soils some of the haulm, especially of American Rose, died prematurely. *Charles Whitehead, Barming House, Maidstone, July* 25.

SUSSEX.—Potatos look well in general about here. *John Halsey, Cowdray Park, Midhurst, July* 23.

—— All kinds of early Potatos are drying off for want of rain, and the tubers are small but good. Throughout this district all the late kinds are still growing, and look well. I have just been through the cottage gardens, and in no case did I see anything of the disease. *S. Ford, Leonardslee, Horsham, July* 24.

—— Potatos look remarkably well everywhere, those that are taken up are sound, good in quality, not a heavy crop, but fair-sized and very even. I have not at present met with the disease, nor have I heard of its appearance. *Geo. M. Breese, Petworth Gardens, July* 26.

—— Potatos up to this time are quite free from disease and excellent in quality. But owing to drought the crop is rather short, more so on poor ground. *B. Coombe, The Gardens, Wiston Park, Steyning, July* 26.

HANTS.—Early Potatos have turned out a good crop and even sized. At present there are no signs of the disease. Late ones are looking remarkably well. *T. D. Myles, The Gardens, Appley Towers, Ryde, Isle of Wight, July* 22.

—— All the early kinds are of first-rate quality and quite free from disease; a fair crop and of good size. The late kinds in the fields look most promising and are also free from disease. *Wm. Smythe, The Gardens, Basing Park, Alton, July* 23.

—— The early varieties are as good as can be, and though the haulm was cut down to the ground-line at the end of April it seems to have had but little injurious effect, that little taking the direction of a larger number than usual of small tubers, which are, however, of excellent quality. Later varieties look splendid, and there are is no sign of disease. *W. Wildsmith, The Gardens, Heckfield Place, July* 24.

—— A good crop, and field sorts look well. I have not seen any symptoms of the disease yet. *Philip Edwards, Fowley Gardens, Liphook, July* 25.

WILTS.—The Potato crop up to the present time has been very good, the ground being full of good-sized tubers of excellent quality; but as I write I learn that the disease has made its appearance in the district, and the hailstorm and heavy rain of to-day are calculated to accelerate its spread. The American Rose, it appears, is the variety most affected with the Peronospora, the disease being more rife among those growing in rich ground than on crops in poor soil. *H. W. Ward, Longford Castle, July* 24.

WESTERN COUNTIES.

HEREFORD.—Owing to the long-continued dry weather in the spring and early summer months early Potatos run rather small, but good; second early and late crops are very promising. *Charles Denning, Holme Lacy Gardens, July* 22.

—— The Potato crops so far are looking remarkably well, taking the recent dry weather into account, and the disease has not yet shown itself. The Myatt's Prolific Ashleaf, which we are now digging, is an excellent crop, and of very superior flavour. *Arthur Ward, The Gardens, Stoke Edith, July* 25.

WORCESTER.—So far the Potato yield has been a good one, and is everywhere promising; but I am sorry to say the disease made its appearance here about the 14th, and is spreading. *J. Austen, Witley Court Gardens, Stourport, July* 23.

—— The early Ashleaf sections of Potatos are daily becoming worse affected by the disease. Late kinds, such as Magnum Bonum, Champion, Reading Hero, Schoolmaster, &c., look very flourishing up to date, but the growth has been so very rapid and succulent since the rains that it is not likely to resist the disease. The unusual sight of several rows of Potatos completely annihilated by aphis has been noticed in this neighbourhood. *William Crump, Madresfield Court, July* 24.

—— Potatos good. At present no signs of disease. *Robert Palmer, Hagley Gardens, Stourbridge, July* 25.

—— Our early varieties have so far escaped the disease, and we are lifting good crops of River's and Myatt's Ashleafs. The crop all round promises an abundant yield, though I fear, should the present unsettled weather continue, disease will show itself. Woodstock Kidney, Magnum Bonum, and Champions look remarkably strong and healthy. *Walter Child, The Gardens, Croome Court, Severnstoke, July* 25.

—— Early crops are clean and good, and above the average quantity. The disease has appeared on the haulms of the American varieties, and I fear the recent rains will cause it to spread rapidly. Late crops are looking wonderfully well. *A. Barker, The Gardens, Hindlip Hall, July* 24.

GLOUCESTER.—Good crops; no disease. *Alex. Scott, Sherborne Garden, Northleach, July* 24.

MONMOUTH.—Early varieties, although checked by frosts early in the season, are turning out an average crop of good quality. We depend principally upon Veitch's Ashleaf, which always gives satisfaction both under glass and in the open. Mid-season and late kinds in gardens and fields look promising, the haulm is robust, and the foliage now expanded. We are now in need of dry weather. I am sorry to hear the disease has already made its appearance amongst early sorts to a serious extent in gardens near the town of Monmouth. *Thomas Coomber, The Hendre, Monmouth, July* 25.

DORSET.—Potatos good up to the present time. Disease making its appearance in some parts. *W. P. Leach, Bryanston Gardens, Blandford, July* 23.

—— There is a prospect of a good crop, and the tubers are very good and fine. Slight signs of disease have been observed. *J. Saltford, Ilsington Gardens, Puddletown, July* 23.

DEVON.—Early Potatos arrived at maturity before attaining full development; mid-season and late crops are very promising: a few tubers have been found diseased in the crops of Myatt's during the past week, all others appear quite free judging from the tops. *D. C. Powell, Powderham Castle, Exeter, July* 23.

—— The Potato crop is very heavy and sound at present. Yesterday I saw that Covent Garden Perfection was attacked in the haulm with the disease, all other kinds appear perfectly clear of it. The Potato in this part is very liable to get disease early, after a few weeks very dry weather, followed by moist weather and a sea mist. *Geo. Baker, Membland, Plympton, July* 24.

CORNWALL.—The present season will be noted as an unusually good one for the Potato crop everywhere in this district. The first earlies were rather small owing to the hot weather in May, but as I stated in 1881, fine weather in May decides the case. Some over-luxuriant growths in moist places will be recorded: I have seen haulm from 4 to 5 feet high. Most sorts are good in quality this season; a little disease has now appeared. *Charles Lee, Boconnoc, July* 23.

—— All the early varieties are small owing to the dry weather; the quality is excellent. The late varieties are looking remarkably well and as yet free from disease. *Geo. Knox, Gr., Port Eliot, St. Germans, July* 24.

—— The crop is abundant, clean, and of good quality. Up to this no trace of disease. *James Merton, Pencalenick, Truro, July* 24.

WALES.

CARMARTHEN.—As a rule around here the Potato crops are looking remarkably well, and are lifting clean and free from disease, which has not been observed anywhere up to the present time. Field Potatos are looking well, being healthy and free in their growth. *Louis Bowen, Edwinsford, Llandilo.*

GLAMORGAN.—For many weeks past we have been lifting upwards of 2 cwt. of tubers per week, and I never saw them turn out better. They are excellent in quality and quantity. The warm dry weather we had for a long time and up to lately suited them admirably. I have not seen a diseased Potato this summer, and I could never say the same before in July. Late crops are very healthy looking. *J. Muir, Margam Park, Taibach, July* 23.

MERIONETH.—The Potato crop is very good, early varieties lifting well; tubers clean and free from disease. Second and late varieties look remarkably well, the weather having been suitable for the Potato in this locality. *J. Bennett, Rhug Gardens, Corwen, July* 25.

IRELAND.

ANTRIM.—Good in garden. Field crops are also beginning to look well. *G. Porteus, Garron Tower, Belfast, July* 23.

CORK.—Early kinds good in quality but small for want of rain. The showers in July will save late crops which now promise well. The Champion is still the leading Potato, climate as a rule too sunless and wet for Magnum Bonums; Reading Hero will doubtless be much grown when better known. *W. Osborne, Fota Island, July* 23.

DUBLIN.—Early Kidney Potatos are turning out fine and of good quality, and late sorts are looking very promising with no appearance of disease so far. The dry weather we have had for some time past has been favourable to the Potato crop, and should we escape the blight the produce will be a good average. *J. Jellam, Brenanstown House, Cabinteely, July* 24.

KILKENNY.—Early Potatos are a very fair crop and of superior quality, no doubt the result of an exceptionally dry season. Late sorts, in fields, are most promising. No trace of disease up to the present. *William Gray, Woodstock Park, Inistioge, July* 24.

SCILLY ISLES.

Early Potatos a good crop, but prices were very low this season. Late sorts good crop, and as yet but little disease, but we fear they will suffer on account of late heavy rains after a long spell of dry weather. *George Vallance, Tresco Abbey Gardens, July* 25.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, July 30, 1884

July	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest.	Lowest.	Range	Mean for Day	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity Sat. = 100.	Wind: Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
24	29.60	—0.17	67.0	49.5	17.5	59.0	— 3.2	46.0	62	W.: S.W.	0.06
25	29.86	+0.09	66.0	48.0	17.1	56.8	— 5.4	47.4	71	N.W.	0.00
26	29.87	+0.10	62.5	44.0	18.5	53.7	— 8.5	17.8	78	S.: S.W.	0.24
27	29.71	—0.05	67.0	52.0	15.0	59.7	— 2.5	51.8	75	N.W.	0.28
28	29.94	+0.18	69.0	53.0	16.0	59.4	— 2.8	53.4	85	N.W.	0.07
29	29.92	+0.16	68.0	55.0	13.0	61.6	— 0.7	57.2	85	N.W.	0.06
30	30.02	+0.27	71.5	58.5	13.0	63.5	+ 1.2	61.2	92	E.: NE.	0.00
Mean	29.75	+0.08	67.3	51.6	15.7	59.1	— 3.1	52.1	78	N.W.	0.71

July 24.—Fine bright morning, thunderstorm from 11.30 A.M. till 12.30 P.M. Dull afternoon. Fine clear night, lightning at times.
" 25.—Fine, dull mostly, bright intervals. Fine night.
" 26.—Fine day, heavy rain at night.
" 27.—Very wet day, thunderstorm between 12.30 P.M. and 1 P.M.
" 28.—Slight rain in early morning, fine bright day. Few slight showers of rain at night.
" 29.—Dull day and night.
" 30.—Fine and bright generally. Fine clear night.

LONDON: *Atmospheric Pressure.*—During the week ending July 26, the reading of the barometer at the level of the sea decreased from 30.18 inches at the beginning of the week to 30.09 inches by 3 P.M., and increased to 30.12 inches by midnight on the 20th, decreased to 29.86 inches by 3 P.M. on the 21st, increased to 30.02 inches by 9 A.M. on the 22d, decreased to 29.75 inches by 3 P.M. on the 24th, increased to 30.16 inches by 9 A.M. on the 26th, and was 29.92 inches by the end of the week.

The mean reading of the barometer for the week was 29.96 inches, being 0.02 inch higher than last week, and 0.01 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 73°, on the 22d; the highest on the 25th was 62.5°. The mean of the seven high day temperatures was 68°.2.

The lowest temperature was 44°, on the 26th; on the 23d the lowest temperature was 58°. The mean of the seven low night temperatures was 51°.6.

The greatest range of temperature in one day was 20°, on the 20th; the smallest was 12°, on the 23d. The mean of the seven daily ranges was 16°.6.

The mean temperatures were—on the 20th, 60°.8; on the 21st, 61°.4; on the 22d, 63°; on the 23d, 62°.1; on the 24th, 59°; on the 25th, 56°.8; on the 26th, 53°.7; of these the 22d was above its average by 0°.7; the rest being below by 1°.6, 0°.9, 0°.1, 3°.2, 5°.4, and 8°.5, respectively.

The mean temperature of the week was 59°.5, being 3° lower than last week, and 2°.7 below the average of the week.

The highest reading of a thermometer placed in the full rays of the sun was 124°, on the 24th. The mean of the seven readings was 110°.1.

The lowest reading of a minimum thermometer with its bulb placed on grass was 41°.5, on the 20th. The mean of the seven readings was 46°.6.

Rain.—Rain fell on three days to the amount of 0.60 inch, of which 0.30 inch fell on the 21st, and 0.24 inch fell on the 26th.

ENGLAND: *Temperature.*—During the week ending July 26 the highest temperatures were 74°.5 at Cambridge, 74° at Truro, 73° at Brighton and Blackheath; the highest at Sunderland was 65°, at Liverpool 65°.2, and at Bradford 66°.4. The general mean was 70°.2.

The lowest temperatures in the week were 40°.6 at Wolverhampton, 41° at Cambridge and Hull; the lowest temperature at Liverpool was 49°.3, at Preston 49°, at Leeds and Sunderland 46°. The general mean was 44°.4.

The greatest ranges were 33°.5 at Cambridge, 30°.6 at Nottingham, 30°.3 at Wolverhampton; the smallest ranges were 15°.9 at Liverpoool, 19° at Sunderland and Preston. The general mean was 25°.8.

The mean of the seven high day temperatures was highest at Cambridge, 71.°5, at Brighton 69°.4, at Blackheath 68°.2; and was lowest at Bolton, 61°.4, at Liverpool 61°.5, at Bradford 63°.5. The general mean was 65°.7.

The mean of the seven low night temperatures was highest at Truro, 55°.7, at Plymouth 55°.3, at Brighton and Bristol 53°.5; and was lowest at Sunderland, 46°, at Hull 47°, at Cambridge 47°.8. The general mean was 50°.9.

The mean daily range was greatest at Cambridge, 23°.7, at Sunderland 19°, at Nottingham 18°.5; and was least at Liverpool 8°.8, at Truro 10°.1, at Preston 10°.3. The general mean was 14°.8.

The mean temperature was highest at Brighton and Blackheath, 59°.5, at Plymouth 59°; and was lowest at Sunderland, 52°.7, at Bolton 53°.9, at Hull 54°.3. The general mean was 56°.7.

Rain.—The largest fall was 1.93 inch, at Bolton, 1.57 inch at Liverpool, 1.40 inch at Preston; the smallest fall was 0.37 inch at Brighton, 0.48 inch at Leeds, 0.57 inch at Cambridge. The general mean fall was 0.89 inch.

SCOTLAND: *Temperature.*—During the week ending July 26, the highest temperature was 66°.9, at Leith; at Dundee the lowest temperature was 61°.8. The general mean was 64°.8.

The lowest temperature in the week was 40°, at Glasgow; at Leith the lowest temperature was 44°.9. The general mean was 42°.7.

The mean temperature was highest at Paisley, 55°.2, and lowest at Aberdeen, 53°.4. The general mean was 54°.5.

Rain.—The largest fall was 0.81 inch, at Aberdeen; the smallest fall was 0.05 inch, at Dundee. The general mean was 0.50 inch.

JAMES GLAISHER, F.R.S.

Obituary.

We regret to record the death, at University College Hospital, on the 25th ult., of Mr. George Williams, Gardener at Peasmarsh Place, Sussex. Mr. Williams, who was an occasional contributor to our columns, was widely known and respected in the South of England, and was a successful exhibitor, especially of Grapes, at local exhibitions. He underwent several operations of a serious character, necessitated by an accident which befel him while at work, and we are sorry to hear that he has left a widow and young family, for whom great sympathy is expressed.

—— We have also to record the death, on the 22d ult., of Mr. William Crowder, of the Thimbleby Nurseries, Horncastle, aged fifty-eight years. Mr. Crowder had been in business for thirty-five years, and was much respected by his compeers in the trade. The nurseries will, we understand, now be carried on by his two sons.

Variorum.

SARRACENIA FLAVA, L.—In December, 1868, I was stopping at New Orleans, the capital of Louisiana, in the south of North America, about 30° North latitude. One beautiful morning I went by train to Pontchartrain, a spot about a mile in distance from the capital, on the borders of the lake of that name. I took a place on one of the steamers and crossed the lake. The geographical aspect of Louisiana is peculiar; the ground is flat and level. Every year, in spring, vast spaces are inundated by the overflow of the Mississippi, and, consequently, wherever the land is at all undulated there are lakes or ponds of different sizes and of infinite number. Conceive my surprise upon seeing in these damp places Sarracenia flava in profusion. The plants grow in water 15 to 45 cent. in depth. The leaves, with their stalks, are in the shape of an urn or pitcher, and their small limb is like a lid, rising half a yard to a yard above the surface. Thousands of specimens of this extraordinary plant grow in every pond. Probably the saline exhalations of the sea are not without influence upon the remarkable development of these remarkable plants. It must also not be forgotten that they are exposed to the rays of a burning sun, thanks to which the summer temperature is often more than 30°R. (37½°C.). On the contrary in winter the temperature sometimes falls to 2° to 3° R. below zero (—2½ to —4° C.) Sometimes even over these ponds a sheet of ice is formed sufficiently thick to support the weight of a man; but these exceptional frosts never last long, and at the end of January the daily maximum temperature rises to 15°—20° R. (19°—25° C.) The specimens found out of the water or in shallow water bore much smaller and less robust pitchers, but more brilliantly coloured. Moreover, there is infinite variety of tint in the pitchers. Every shade of yellowish-green to dark green, some mottled, others streaked with dark purple; these last are the prettiest and most sought after. I pulled out of the mud hundreds of Sarracenia flava, and to tell the truth this work is far from agreeable. You are exposed to attacks of thousands of mosquitos, which buzz in your ears, and the stings of these horrible little creatures are so annoying that every moment you are obliged to drive them away from your face with your muddy hands, so that in a very short time you become so dirty that it is impossible to distinguish you from the blackest negro. When gathering the pitchers I had the curiosity to examine how many insects these carnivorous plants had devoured. The number of winged creatures belonging to different species, which had been caught in the pitchers, passes imagination. Among them were bees and drones, but the greatest number consisted of minute dipterous flies. Of either only the skeleton was left, if I may so express it, all the soft fleshy parts had disappeared, only the "bones" remained in the bottom of the pitcher, heaped up in hillocks, sometimes 33 cent. in thickness. As the diameter of the urns varies from 1—4 decimetres, the conclusion is arrived at, that quite half a million of these poor creatures lost their lives in each of these perfidious traps. They are not all so abundantly furnished as this, but I never met with one which had not devoured some insect. I have found snails and earth-worms in specimens growing out of water, or under such conditions that the animals can reach them. *Roezl, in "La Belgique Horticole."*

Answers to Correspondents.

ARAUCARIA IMBRICATA: *Barnet.* We cannot tell the precise cause of your tree going amiss from the data you furnish, but you can impart vigour to it by taking away the staple soil down to the roots, and likewise for the space of a yard round the extremities of the roots, replacing it with old pasture loam, to which either peat or leaf-mould is added, using this material in a lumpy condition, and mixing broken sandstone with it. These trees do best on mounds, and are impatient of water, requiring, as they do, thorough drainage. Chalk is also inimical to them.

BLACK ALICANTE: *H. Drummond & Sons.* As there are other Grapes in the house, presumably Hamburgh, or those not requiring high temperatures to grow them, the Alicante does not get the necessary high degree of warmth during its flowering period; hence the imperfect fertilisation, and fruit the size of Peas.

BLACK BEETLE IN FLOWER GARDEN: *F. B.* Our correspondent specifies a "slender variety" as the one upon which he or she desires information, especially as to the part the insect plays in the economy of the flower garden. We do not know what insect is meant, but, in any case, we think the best economy would be to get rid of it.

BOOKS: *Hortus.* The correct title is *The Grape Vine*, by Joseph Meredith. It was published in 1876, by Philip, Son & Nephew, Liverpool.

HORTICULTURAL BUILDER: *H. M. E.* should consult our advertising columns. We cannot undertake to advise her on such a matter.

MARROWS TURNING YELLOW: *Marrow.* Growing them in an ungenial cold soil, watering with very cold water, or they are imperfectly fertilised, or not at all. Try watering with warm water, and artificial impregnation, as with Melons.

MILDEW ON GRAPES, &C.: *Devonian.* The pest was most probably introduced during that interval of neglect of which you make mention caused by the letting out of the fire during cool weather, with perhaps a moist air maintained inside the house, and ventilation given more to suit the pot plants grown in the house than the Vines. The mildew spreads so rapidly under such management that great damage is done before remedies are seen to be required. The most you can do now is, during cool overcast weather, to keep up a buoyant atmosphere by means of fire-heat and top ventilation only, and not allow an excessive amount of moisture in the air. As a mixture for the destruction of the mould, boil 1 lb. of quicklime and 1 lb. of sulphur in 4 quarts of water, boiling for a quarter-of-an-hour from the moment boiling begins. This liquid should then be carefully decanted from the lees, and kept closely bottled. An ordinary wineglassful to 3 gals. of rain-water will make an effectual remedy for dipping or syringing mildewed Vines, &c. In the case of the bunches it must be syringed off with clean water, in not less than ten minutes, or evil will result. The same diluted mixture can be kept about in pans in the vinery, for the purpose of giving out sulphureous fumes by sun-heat. There are patent remedies, but this is as effectual, and is cheap. Warmed water should be used for watering and syringing. Read our Calendar for Vines this week. Cherries, you ought to know, drop their fruit from imperfect fertilisation; if they "set," as you say, they would not fall.

MOSSES: *Moss.* The Mosses are not in fruit, and cannot, therefore, be named. Two are species of Hypnum, one of Dicranum. Neither of them is suitable for Orchids.

NAMES OF PLANTS: *W. W.* Dendrobium Parishii, and Tillandsia acaulis zebrina.—*Camjee.* Oncidium prætextum, Maxillaria sp., and Tabernæmontana coronaria flore-pleno.—*John Cowan.* A small flower of Dendrobium Brymerianum.—*J. C. Brotherston.* Oncidium pulvinatum.—*R. Greenfield.* Zephyranthes candida.—*C. H.* Lysimachia thyrsiflora.—*Edwin Hillier.* Diospyros Lotus.—*Ed.* Withania aristata (Canaries).—*W. G.* 1, Polygonum cuspidatum; 2, Duranta Plumieri.—*C. W. S.* Spiræa opulifolia.—*H. M. E.* Pyrus intermedia.—*W. B.* Campanula rapunculoides, Orchis pyramidalis.—*W. P., Epping.* Trachelium cœruleum.—*A. K.* Common Dodder, Cuscuta europæa, probably introduced with the peat. You should destroy them at once.

SEEDLING DAHLIAS: *Thos. Burrow.* The flowers sent are far too poor for doubles, of which there are hundreds better in every way, and they are not so pretty as their parents.

SHEFFIELD SHOW. Mr. R. W. Proctor writes that his address is Ashgate Road, Chesterfield, not Sheffield, as stated in the report. We learn also that Mr. Wilson, of Oakholme, and Mr. Sheridan, of Ranfall Ranmoor, gr. to Mrs. Harmar, took the principal prizes in both the amateur's classes for stove and greenhouse foliage plants, as well as prizes in other competitions. Our report was sent by telegraph, and much of it was necessarily sent off before the prize cards were properly affixed, late in the afternoon.

STOVE TEMPERATURE: *G. W.* The winter night temperature during November, December, January, and greater part of February, from 58° to 63°, with a gradual increase in July to say 70°. During bright weather the day-heat may be in winter from 10° to 15° over that of the night; and in cloudy sunless weather 8° to 10° increase only during the day. Summer day temperature from 85° to 95°, according as the weather is overcast or not. Bear in mind that the plants will make firmer, healthier growth, in low night temperatures than is possible when high ones are adopted.

TOMATO ROOTS: *Tomato.* The swellings are occasioned by numbers of minute worms similar to those which frequently affect the Cucumber.

VIOLA DYSART WHITE: *R. R. W.* "Viola" does not know, and suggests that you should write to the firms mentioned.

VINE FOLIAGE: *New Club, Edinburgh.* These have the look of Vine foliage that is suffering from premature ripening in consequence of great dryness at the root. The substance is miserably thin and weak in both examples, and one is almost eaten away on the underside with red-spider. Such leaves are rarely found on Vines growing under healthy conditions, and seldom found of such a small size.

VINE LEAVES AND PEACHES: *T. W.* Your Vines are prematurely ripening their growth, probably from want of copious watering of the border. The Peach trees being bare of fruit now, can be kept free from spider with clean water applied with an engine or large syringe, seeing that the undersides of the leaves have the most attention. Some of the insecticides to be had from the nurserymen, would also assist you in getting rid of the spider. Lose no time, or the bearing wood will be injured.

CATALOGUES RECEIVED.

ALFRED LEGERTON, 5, Aldgate, London, E.—Wholesale Catalogue of Dutch and other Flower Roots.

HENRY ORMSON & CO., Stanley Bridge, King's Road, Chelsea—Designs for Horticultural Buildings.

DUTRY-COLSON, Ghent, Belgium—Garden Requisites of all Kinds.

COMMUNICATIONS RECEIVED:—J. D.—J. G.—E. F. R.—J. M.—Camjee.—P. L. S.—B. H. & Co.—J. H W. M.—E. G.—J. Morton (next week).—C. F. G.—M. P. A.—J. T.—A. S. -W. B H.—W. G. S.—J. B & Sons—Emil Strauss.—Messrs. Cassell.—R. W. P.—Cross & Steer (many thanks, similar cases are not uncommon).—Boston, U. S.—A. G.—H. L. C—J. V. V.—R. J. M.—E. J. N.—Jules de Cock—C. Y. M. (with enclosure; many thanks).—Wendland.—R. B. Charpe.—F. T. M.—J. T. B.—F. B.

Markets.

COVENT GARDEN, July 31.

OUR market has been firm during the past week, and prices of soft fruit have steadily advanced. Peaches, owing to the London season being over, are lower. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0
Arbor-vitæ (golden), per dozen ..	6 0	18 0
— (common), dozen	6 0	12 0
Begonias, per doz. ..	4 0	12 0
Calceolarias, per doz.	4 0	9 0
Cockscombs, doz. ..	3 0	6 0
Cyperus, per dozen	4 0	12 0
Dracæna term. doz...	30 0	60 0
— viridis, per doz..	12 0	24 0
Erica, various, doz.	12 0	48 0
Euonymus, various, per dozen ..	9 0	18 0
Evergreens, in var., per doze ..	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each ..	2 0	10 0
Fuchsias, per doz. ..	4 0	12 0
Heliotrope, doz. ..	4 0	9 0
Hydrangea, per doz.	9 0	18 0
— paniclata, doz.	18 0	36 0
Lilium longiflorum, per dozen ..	24 0	36 0
— lancifolium, doz.	9 0	18 0
Marguerite Daisy, per dozen ..	8 0	18 0
Mignonette, per doz	4 0	6 0
Myrtles, per doz. ..	0 0	12 0
Palms in var., each	2 6	21 0
Pelargoniums (show) per dozen ..	6 0	18 0
— scarlet, per doz ..	3 0	9 0
Petunias, per dozen	4 0	9 0
Rhodanthes, p. dozen	6 0	9 0
Spiræa, per dozen ..	8 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0
Arum Lilies, 12 blms.	3 0	6 0
Bouvardias, per bun.	0 9	1 0
Calceolaria, 12 sprays	0 6	1 0
Carnations, 12 bun.	2 0	6 0
Cornflower, 12 bun..	2 0	4 0
Eschscholtzia, 12 bun.	2 0	4 0
Eucharis, per doz. ..	4 0	6 0
Forget-me-not, 12 bunches ..	2 0	6 0
Gardenias, 12 blms..	3 0	6 0
Gladiolus, various, 12 bunches ..	6 0	12 0
Heliotropes, 12 sp. ..	0 6	1 0
Lapageria, white, 12 blooms ..	3 0	6 0
— red, 12 blooms..	1 0	3 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 6	6 0
Pelargoniums, per 12 sprays ..	0 6	1 0
Pinks, various, 12 bunches ..	2 0	6 0
Primula, double, bun.	1 0	1 6
Pyrethrum, 12 bun.	2 0	6 0
Rhodanthes, 12 bun.	6 0	12 0
Roses (indoor), doz.	1 0	4 0
— (outdoor), 12 bun.	3 0	9 0
— coloured, doz. ..	2 0	0 0
Stephanotis, 12 spr.	2 0	4 0
Stocks, 12 bunches ..	3 0	6 0
Sweet Peas, 12 bun.	1 6	4 0
Sweet Sultan, 12 bun.	2 0	6 0
Tropæolum, 12 bun.	1 6	3 0
Tuberoses, per doz..	0 6	1 6
White Jasmine, bun.	0 6	1 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Cherries, ½-sieve ..	7 0	12 0
Currants, black, per ½-sieve ..	3 0	3 9
— red, ½-sieve ..	3 6	4 0
Figs, per dozen ..	2 0	3 0
Grapes, per lb. ..	1 6	3 0
Lemons, per case..	10 0	14 0
Melons, each ..	2 6	4 0
Pine-apples, Eng., lb.	2 0	3 0
— St. Michael's, each	2 0	5 0
Strawberries, per lb.	0 4	1 0
Peaches, per doz. ..	2 0	10 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz. ..	2 0	4 0
Asparagus, English, per 100 ..	4 0	8 0
Aubergines, each ..	0 4	..
Beans, French, per 100	0 4	..
Beet, per doz. ..	1 0	..
Cabbages, per doz..	1 0	..
Carrots, per bun. ..	0 6	..
Cauliflowers, English, dozen..	4 0	6 0
Celery, per bundle..	1 6	2 6
Cucumbers, each ..	0 6	1 0
Endive, French, per dozen ..	2 0	..
Garlic, per lb. ..	0 6	..
Herbs, per bunch ..	0 2	0 4
Horse Radish, bund.	3 0	4 0
Lettuces, Cabbage, per dozen ..	1 6	..
— Cos, each ..	0 2	..
Marrows, each ..	0 3	..
Mint, green, bunch..	0 4	..
Mushrooms, p. baskt.	1 0	2 0
Onions, per bunch ..	0 6	..
— Spring, per bun.	0 6	..
Parsley, per bunch..	0 9	..
Peas, English, quart	1 0	..
Radishes, per doz. ..	1 6	..
Rhubarb, per bund.	0 4	0 6
Small salading, per punnet	0 4	..
Spinach, per strike..	3 0	..
Tomatos, per lb. ..	1 0	..
Turnips, new, bun...	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £6 to £8 per ton.

SEEDS.

LONDON: *July* 30.—There was a very small attendance on the seed market to-day. Rather more inquiry s experienced for Trifolium, and French prices come higher. Less money is now asked for new English Rape seed. Sowing Mustard is in improved request at steady rates. More money is asked for Canary seed, but Hemp seed is dull. There is not much business passing in feeding Linseed, but prices keep very firm. Fine blue Peas are getting exhausted. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark-lane on Monday, English Wheat was firmly held. The demand, however, was slack, and the rates of Monday se'nnight were not exceeded. Australian Wheat tended against buyers, but generally the result of the day's business was disappointing as to the extent of demand, though the previous Monday's rates were upheld. Flour was steadier at previous rates. Barley also was steady, with rather more inquiry for grinding descriptions. Beans and Peas were firm at previous currencies. The commoner qualities of Oats were 3*d.* lower on the week; Maize about 3*d.* dearer, and firmly held.—On Wednesday English Wheat was held for firm rates, but met only a limited inquiry; foreign was quiet, but there was more inquiry for Indian Wheats, which were firmer. Flour was quiet but steady, Maize firm, Oats slow, Beans and Peas firm, with a quiet trade, and Barley unchanged.—Average prices of corn for the week ending July 26:—Wheat, 37*s.* 1*d.*; Barley, 27*s.* 5*d.*; Oats, 23*s.* 4*d.* For the corresponding period last year:—Wheat, 42*s.* 1*d.*; Barley, 27*s.* 6*d.*; Oats, 22*s.* 8*d.*

HAY.

Tuesday's Whitechapel Market report states that supplies were moderate, especially of best Clover, and trade quiet. Quotations:—Clover, prime old, 95*s.* to 116*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 116*s.*; hay, best meadow, 80*s.* to 96*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 40*s.* per load.—On Thursday there was a moderate supply. Trade was quiet, except for best hay and Clover, which were rather dearer.—The Cumberland Market report states that trade was dull at the following rates:—Clover, prime old, 100*s.* to 110*s.*; second quality, 80*s.* to 95*s.*; inferior, 60*s.* to 70*s.*; hay, best old meadow, 80*s.* to 95*s.*; inferior, 60*s.* to 75*s.*; and straw, 30*s.* to 38*s.* per load.

POTATOS.

The average prices of Potatos during the week were as follows:—Kidneys, 80*s.* to 125*s.*; Regents, 100*s.* to 110*s.*; Roses, 70*s.* to 100*s.*; Victorias, 80*s.* to 85*s.*; Beauty of Hebron, 90*s.* to 100*s.*; Jersey, 120*s.* to 130*s.*; and Dutch, 60*s.* to 80*s.* per ton.—The imports into London last week consisted of 51 cases from Boulogne and 439 baskets from Rotterdam.

Government Stock.—Consols closed on Monday and Tuesday at 100⅞ to 100⅞ for both delivery and the account. Wednesday's closing figures were 100⅞ to 100⅝ for delivery, and 100 13/16 to 100 15/16 for the account. The final quotations of Thursday were 100 13/16 to 100 15/16 for delivery, and 100⅞ to 101 for the account.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

CARBON PASTE.

Hop, Fruit Growers, Florists, and Market Gardeners, will find STEVENS AND CO.'S CARBON PASTE a most wonderful and economical preparation for the certain destruction of every kind of insect, parasite, and caterpillar that infest trees and plants; cures mildew and blight, and clears Grapes from mealy-bug, &c., and is guaranteed not to injure the most delicate foliage. 1 lb. tins, 1*s.*; 3 lb., 2*s.* 6*d.*; 7 lb., 5*s.* 6*d.* Special quotations for large quantities. To be had of all Seedsmen, Chemists &c.; or a Sample sent free for 1*s.* 6*d.* by Mr. STEVENS, Chemist, 67, High Street, Borough, London, S.E.

STEVENS AND CO.'S AMORTISER is particularly recommended for Greenhouse Plants, as it destroys all insects, and does not injure the most delicate foliage, and is of a pleasant perfume. A Sample free for 1*s.* 6*d.*

FOR GLASS HOUSES. **HUGHES' GREEN SHADING.**

Convenient, Inexpensive, Easily applied, Lasts all the Summer, and can then be easily washed off. 1*s.*, post 1/3.

For Fixing Bloom in Azaleas, &c., and for Cut Flowers. **HUGHES' FLORAL CEMENT.**

A great boon to Florists and all lovers of Flowers. Dries instantly. Sold in bottles, 1*s.* & 2*s.* Per post, 3*d.* extra.

HUGHES' STYPTIC

For Preventing Vines Bleeding after Pruning. Very effectual in preventing the flow of sap in Vines being wasted. In bottles, 1/6 and 2/6. Per post, 3*d.* extra.

For Destroying Beetles, Cockroaches, Crickets, Bugs, Fleas, Mosquitos, &c. **HUGHES' TROPICAL BEETLE POWDER**

Most effectual in Greenhouses,—for Animals and Bed Clothing. Price 6*d.*, 1*s.* & 2*s.* 6*d.* Per post, 3*d.* extra.

A Treatise on FIR TREE OIL as an Insecticide, and on the uses and application of the above preparations sent POST FREE, on receipt of address, by

E. GRIFFITHS HUGHES, *OPERATIVE CHEMIST,*
VICTORIA & CATEATON STREET, MANCHESTER.

FIR TREE OIL INSECTICIDE (Soluble in Water)

Effectually clears all Insects and Parasites from the Roots or Foliage of Trees and Plants. Kills all Vegetable Grubs, Turnip Fly, &c. Cures Mildew and Blight. Clears Grapes from Mealy Bug, &c., and makes a good Winter Dressing. Of all Seedsmen and Chemists, 1/6, 2/6, 4/6 a bottle. Per gallon 12/6, or less in larger quantities. *A Treatise on "Fir Tree Oil," and its application, sent free on receipt of address, by the Manufacturer,* E. GRIFFITHS HUGHES, MANCHESTER. Wholesale from HOOPER & Co.; CORRY, SOPER, FOWLER and Co.; C. E. OSMAN & Co., and from all the London Seed Merchants and Wholesale Patent Medicine Houses.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens and Conservatories, supplied to Nurserymen and Seedsmen by WILLIAM RANKIN AND SONS, 10, Carlton Place, Glasgow; and at Lisbon, Portugal.

PURE WOOD CHARCOAL
FOR
VINE BORDERS, FRUIT TREES, STRAWBERRIES, ROSES, FLOWER BEDS, POTTING PURPOSES,
AND GENERAL HORTICULTURAL PURPOSES.
HIRST, BROOKE, AND HIRST, Manufacturers, Leeds, Yorkshire.

Weeds Eradicated from Lawns.

WATSON'S LAWN SAND (the original Lawn Sand) destroys both Daisies, Plantains, Ribgrass, &c, and invigorates the Grass. Testimonials and instructions on application. 36*s.* per cwt.: 28 lb. tins, 10*s.*; 56 lb. kegs, 19*s.* each; sample tins, 5*s.*, 2*s.* 6*d.* and 1*s.*
W. D. BARBOUR, 3, Park Row, Leeds.

SUPERIOR VARNISH.



It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost.

PRICES:—BLACK, 1*s.* 6*d.* per gallon; in casks, containing not less than 9 gallons, delivered free at most railway stations. Casks extra, but two-thirds allowed if returned carriage paid to our works in good condition. BRUSHES for coating Ironwork, Wood, or Stone, 1*s.* each.

CATALOGUES of all kinds of Iron and Wire Fencing, Gates, &c., free on application.

BAYLISS, JONES & BAYLISS,
VICTORIA WORKS, WOLVERHAMPTON; and 3, Crooked Lane, King William St., E.C.—*Please name this paper.*

DEANE & CO.'S CONSERVATORIES & GREENHOUSES.



The prices given include ERECTING COMPLETE, with all necessary brickwork, &c., within fifteen miles of London.

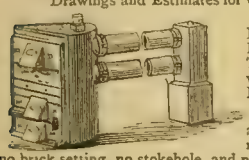
SPAN-ROOF CONSERVATORY.

Size....	15ft. by 9ft.	..	20ft. by 12ft.	..	25ft. by 15ft.
Price ..	£30.	..	£42 10*s.*	..	£58.

LEAN-TO GREENHOUSE.

Size..	10ft. by 6ft.	12ft. by 8ft.	15ft. by 10ft.	20ft. by 12ft.
Price.	£19 10*s.*	£23 10*s.*	£29 10*s.*	£40.

Proportionate prices for other sizes and at any distance.
Drawings and Estimates for Conservatories free.



THE LOUGHBOROUGH HOT-WATER APPARATUS, complete as shown, with 12 ft. of 4-in. Hot-water Pipe, £4 4*s.*

The Simplest, Cheapest, and most Powerful Apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing, and burns more than twelve hours without attention.
Price of Apparatus for houses of any size on application.
CATALOGUE WITH PARTICULARS FREE.

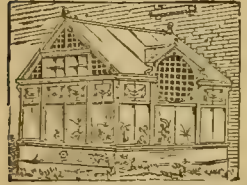
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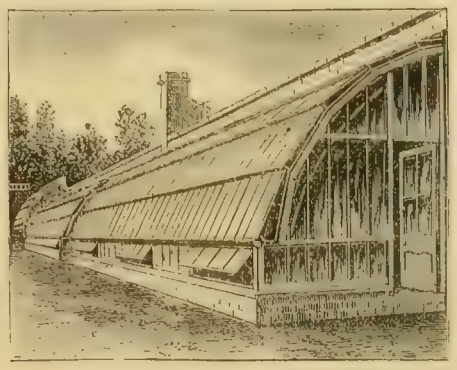
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Estimates given for every kind of Horticultural Buildings.

Price List on application to
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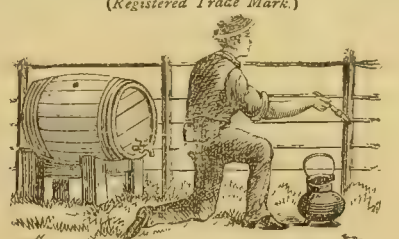




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For Price, &c., see Catalogue.

WATER BARROWS, GARDEN HOSE, ROLLERS, LAWN MOWERS, &c.; also for
GARDEN and CONSERVATORY WIREWORK,
see Special Catalogue.

Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years, and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

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BAMBOO CANES.—Thick for splitting and thin for using whole. The largest holder in England. P. B. HARKIN, Dutton Street, Liverpool.

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Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

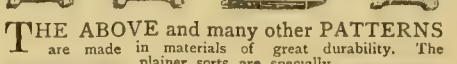
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TANNED NETTING,
Specially selected for Garden Use.
2 yards wide, 1½*d.*, and 4 yards wide, 3*d.* per yard run.
Scrim, Hessian, and **Tiffany,** for protecting Fruit Trees and shading Greenhouses, from 2½*d.* per yard and upwards.
Russia Mats, Raffia Fibre, Tobacco Paper and **Cloth, Cocoa-nut Fibre Refuse,** and other Sundries at the lowest possible prices.
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For Sizes and Price apply to the Sole Manufacturers—
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BLAKE AND MACKENZIE'S WATERPROOF and other LABELS, for Nursery and Greenhouse purposes; also the WILLESDEN WEATHERPROOF SCRYM CLOTH for Shading. Pictorial, Flower, and Vegetable Seed Pockets, and other Seedsmen's requisites.
Address: School Lane, Liverpool.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
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ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
F. ROSHER AND CO., Brick and Tile Merchants.
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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

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JOHN MATTHEWS, THE ROYAL POTTERY, WESTON-SUPER-MARE. Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS of superior quality from 1 to 30 inches diameter, stand the frosts, and seldom turn green; ORCHID, FERN, SEED and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price LIST post-free. Sheet of Designs, 6*d.* Book of Designs, 1*s.*

BELGIAN GLASS for GREENHOUSES, &c.
Can be obtained in all sizes and qualities of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & SON have always a large stock in London of 20 in. by 12 in., 20 in. by 14 in., 20 in. by 16 in., 20 in. by 18 in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

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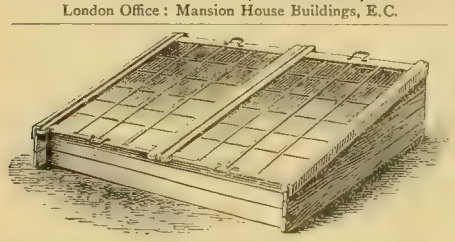
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 2, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 554.—Vol. XXII. { New Series. } SATURDAY, AUGUST 9, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. { Post-free, 5½d. }

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NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory.
GENERAL MEETING, for the Election of Fellows, at 3P M., in the Gallery of the Conservatory, on TUESDAY NEXT, August 12.
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Catalogues will be sent regularly on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place on TUESDAY, August 26, for which they will be glad to receive entries not later than the 18th inst.

67 and 68, Cheapside, E.C.

Valuable Freehold Residences, Nursery, and Building Land in Maghull, Lancashire.

MR. W. G. IDLE will SELL by AUCTION, at the "GREAT MOGUL INN," MAGHULL, on TUESDAY, August 19, at half-past 6 o'Clock in the Evening prompt, subject to conditions of sale, all that FREEHOLD ESTATE, situate in Maghull, in the County of Lancaster, nearly opposite Mr. Cookson's, and fronting the Liverpool and Preston turnpike-road, consisting of two large SEMI-DETACHED MESSUAGES or DWELLING-HOUSES, with Shrubberies and Gardens to the front thereof, approached from the road by convenient carriage drives, and with the usual outbuildings thereto. Also a large PLOT of LAND appertaining and adjoining to the left-hand side house, and nearest to Magnull Station, laid out as a NURSERY, with the Greenhouse, Cucumber-house, Frames, and other Buildings thereon erected, and having a south wall 465 feet 6 inches in extent, together with an extensive Vegetable and Fruit Garden behind, and appertaining to the other residence, and together also with a CROFT or PARCEL of LAND adjoining the last mentioned residence. The whole property has a frontage to the said turnpike-road of 828 feet, and contains in the whole 4a. 2r. 5p. 27¾ yds., statute measure, or thereabouts.

The MESSUAGE on the right-hand or Liverpool side, with the Vegetable and Fruit Garden behind the same, and the said Croft or Parcel of Land, are in the tenancy of Mr. Charles Parr, the other Messuage first described in that of Mr. Goodman, and the said Nursery, Hothouses, &c., are in the occupation of Mr. J. D Ellison.

The HOTHOUSES consist of a span-roofed Vinery and Plant-house, 240 feet long by 20 feet wide, in eight sections, separately heated; a span-roofed Cucumber-house, 240 feet long by 10 feet wide, in two sections, separately heated; also Frames 200 feet long, also heated; with a Water Tank, Storehouse, and Potting Sheds. The heating is performed by two large Trentham Boilers.

If not sold as an entirety, the property will be offered for sale in the following lots:—

LOT 1.—The MESSUAGE or DWELLING-HOUSE on the left-hand side and nearest to Maghull Station, with the Nursery, Hothouses, and other Appurtenances as above mentioned. This lot has a frontage of 334 feet, and contains 2a. 2r. 4p. 63ds. in the whole.

LOT 2.—The MESSUAGE or DWELLING-HOUSE on the right-hand or Liverpool side, with the large Vegetable and Fruit Garden, and a portion of the Croft added as marked out. Frontage 104 feet. Total contents, 3r. 9p. 24yds.

LOT 3.—The remainder or greater portion of the CROFT as marked out, containing 1a. 0r. 31p. 18yds. in the whole, and having a frontage of 390 feet. This lot is exceedingly adapted for building purposes.

This estate is a quarter of an hour's walk from Maghull Station, on the Lancashire and Yorkshire Railway, and half a mile distant from the new station on the Southport and Cheshire Lines Extension Railway, which opens up a direct communication with Southport, and a thorough communication with Manchester. A plan may be inspected at the Solicitors' Offices.

For further particulars apply to the Auctioneer, at his Offices, Derby Street, Ormskirk; or to BRIGHOUSE, BRIGHOUSE AND JONES, Solicitors, Ormskirk and Southport.

Wednesday Next.—(Sale No. 6702.) FLOWERING ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, August 13, at half-past 12 o'Clock precisely, a choice COLLECTION of ORCHIDS, in Flower, including fine forms of Cattleya Gaskelliana, C. Eldorado, C. Dowiana, Odontoglossum Alexandræ var. luteolum, O. vexillarium rubellum, Cattleya crispa superba, Masdevallia Normanii, three plants of Coelogyne Massangeana, Disa grandiflora, &c., and an importation of 4000 Imantophyllum miniatum splendens from the Cape.

On view morning of Sale, and Catalogues had.

Dutch Bulbs—Trade Sale.

MR. J. C. STEVENS begs to announce that his FIRST SALE of DUTCH BULBS for this season will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 13, at half-past 12 o'Clock precisely, and will comprise 800 lots of valuable Bulbs from well-known Farms in Holland, lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Cypripedium niveum, grand spotted variety.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY, August 14, at half-past 12 o'Clock precisely, a splendid importation of a beautiful spotted form of CYPRIPEDIUM NIVEUM. This variety has been sent home as Sadroyanum, but cannot be warranted; every plant, however, was seen by Collector in flower, and is like drawing, sepals, petals, and lip being densely covered with spots. Also a lot of a beautiful white variety of NIVEUM, flowers very large and bold.

On view morning of Sale, and Catalogues had.

Peterborough House, Fulham, S.W.

MR. J. C. STEVENS has received instructions from the Executor of the late W. Terry, Esq., to offer for SALE by AUCTION, on the Premises as above, on FRIDAY, August 15, at half past 12 o'Clock precisely, the COLLECTION of ESTABLISHED ORCHIDS, comprising a fine plant of Cattleya gigas, with 4 leads; Anguloa Ruckeri, Angræcum sesquipedale, with 5 leads; Aërides larpentæ, Dendrobium Hillii, Vanda teres, Lælia superbiens, Miltonia spectabilis, Odontoglossum bictonense, &c.; also a small COLLECTION of STOVE and GREENHOUSE PLANTS, including a nice specimen of Tabernæmontana camassa, large plant of Stephanotis floribunda, Crotons of sorts, Pancratiums, &c.

May be viewed day prior and morning of Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, Horticultural Auctioneer and Valuer, 38, King Street, Covent Garden, W.C.

Saturday Next.—(Sale No. 6705.) BULBS from HOLLAND—TRADE SALE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on SATURDAY NEXT, August 16, at half-past 12 o'Clock precisely, a consignment of 800 lots of first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, just received from well known Farms in Holland, in lots to suit the Trade and other large Buyers.

On view morning of Sale, and Catalogues had.

Preliminary.

SALE of an IMPORTANT COLLECTION, comprising Several Thousand Choice and Rare ESTABLISHED ORCHIDS, in first-class condition; and a large number of IMPORTED PLANTS.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from the Executrix of the late Mr. George Toll, deceased, to SELL by AUCTION, on TUESDAY and WEDNESDAY, September 9 and 10, at their Large Rooms, 45, Princess Street, Manchester, a Finely Selected Lot of Good ORCHIDACEOUS PLANTS. Catalogues are in course of preparation.

For further particulars apply to Messrs. S. SIMPSON AND SON, Solicitors, 15, Southgate, King Street West; or to the Auctioneers, 45, Princess Street, both of Manchester.

Waltham Cross, N.

MR. J. TYDEMAN will SELL by AUCTION EARLY in SEPTEMBER (unless a suitable offer is previously made for the Whole Collections), at the Nurseries, Waltham Cross, a VALUABLE COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, the property of Mr. E. Tudgey, of the "Exotic" Nurseries, Waltham Cross (late of Worcester), and sold in consequence of his giving up Exhibiting, including well grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnocomas, Dracophyllums, Stephanotis, Allamandas, Clerodendrons, Francisceas, Rondeletias, Specimen Palms, Anthuriums, Crotons, &c. This well-known collection has taken first prizes at the London and Provincial Shows, viz:—Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in the country. Also two Exhibition Plant VANS, in good repair.

Full particulars of Mr. J. TYDEMAN, Auctioneer and Valuer, Waltham Cross, N.

Date of Sale will be announced in future Advertisement.

Sunbury, Middlesex.

IMPORTANT and DESIRABLE PROPERTY. A rare opportunity. Must be sold to Close the Estate.

FOR SALE, the valuable FREEHOLD ESTATE known as Osborn's Nursery, comprising 17 Acres of Land, which for the Growth of Fruit Trees, Roses, and General Nursery Stock is unsurpassed. There are also several recently built Glass Erections, with Packing and Potting-sheds, &c., which cost about £3000 to put up.

The whole of the commanding and extensive frontage to the road could be easily utilised for building without detriment to the other portion for Nursery purposes.

Full particulars of the above may be obtained, and offers made, through Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C

TO BE DISPOSED OF, a NURSERY, SEED, and CUT FLOWER BUSINESS, doing a first-class trade in one of the best manufacturing districts in the North of England, consisting of Pinery, 3 large Vineries, 2 Peach-houses, and the following houses, all separate:—Camellia and Lapageria, Eucharis, Melon, Rose, and Show; with Seedshop, Pits and Frames, Stable, Packing Sheds, and a good Dwelling-house, all well fitted up, in good repair, and first-class working order, well stocked with Plants. All freehold property, standing on an acre of ground. Satisfactory reason given for owners' selling. For particulars apply to

HURST AND SON, 152, Houndsditch, London, E.

TO BE SOLD, a FREEHOLD FARM, comprising House, Barn, Stables, and other Out-buildings, and 8 Closes, containing about 20 acres of good Land, suitable for a Fancy Farm, Hunting Stables, Nursery Grounds or Building Sites for good Villas. Prettily situated on the south side of Rugby, and about a mile from Rugby Grammar School. For further particulars, apply to the owners,

Messrs. ABEL AND SON, Alexandra House, Harrogate.

Market Garden, &c.

TO BE LET, with Immediate Possession, the BAILBROOK MARKET GARDEN, FRUIT and DAIRY FARM, situate about one mile from the city of Bath and Bathampton Station (G. W. R.), comprising 9 Acres Fruit and Market Gardens, 7½ Acres of Pasture, comfortable House, Cart Shed, Stabling, Piggeries, Store Sheds, and numerous outhouses. Southern aspect, and commands grand views. Present tenant going abroad in consequence of ill-health.

For full particulars, &c., apply to BROWNE AND GILL, Surveyors, 1, Fountain Buildings, Bath.

To Gardeners.

TO BE LET, with Immediate Possession, a 9-roomed HOUSE, with Large Garden and Hothouses, stocked with Cucumbers, Mushrooms, &c.

Apply, 435, Fulham Road, West Brompton, S.W.

To Gardeners and Florists

TO LET, in Clapham Road, a Large GARDEN, with Hothouse, Vinery, Frames, Laundry. All in good condition. Rent may be worked out. Address,

B. B., *Gardeners' Chronicle* Office, 41, Wellington Street Strand, W.C.

To Market Gardeners and Seedsmen

TO BE LET, on Lease, 80 Acres of excellent GARDEN LAND. 8 acres are planted with Asparagus and Fruit Trees now in full bearing. There is upon the Estate a good Residence, 2 Cottages, Onion Sheds, Stables, &c. Situated within half a mile of Peterborough, and offers a most excellent opening for a Market Gardener. Apply to J. E. LITTLE, Estate Agent, Queen Street, Peterborough.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17*a*, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25*s.*, free on to the following rails:—Great Western, Great Northern, Great Eastern, London and North-Western, and Midland, other lines 30*s.*, in sacks 1*s.*; 30 sacks £1 5*s.*; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1*s.* 3*d.* per sack; 10 for 12*s.*, 15 for 17*s.*, 30 for 30*s.*; all sacks included. Trucks (loose), 33*s.* Selected Brown Fibrous Peat, 5*s.* per sack; 5 for 22*s.* 6*d.* Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; sacks 4*d.* each. Coarse Silver Sand, 1*s.* 6*d.* per bushel, 25*s.* per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1*s.* per bushel. Chemical MANURES. Fresh Sphagnum, 6*s.* per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8*d.* per lb.; Specialité Paper, imported solely by us, 10*d.* per lb., 28 lb. 21*s.* Shading materials of all kinds. Write for Price LIST. — W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.

THE HORTICULTURAL SUPPLY ASSOCIATION is the cheapest and best House in the Trade for really good LIGHT FIBROUS PEAT. Having purchased 2000 tons of the very best quality, the Association is prepared to make special offers to the Trade, for quantities by the Yard or Ton in truckloads. Terms on application. In sample bags, 4*s.* 6*d.* per bag. Very best, selected for Orchids, 6*s.* per bag; twenty bags for 5*s.* per bag. BLACK FIBROUS PEAT, 4*s.* per bag; five bags for 17*s.* 6*d.*

Also the best and cheapest house for LOAM, SAND (coarse and fine), LEAF MOULD, COCOA FIBRE, MATS, RAFFIA, CORK, GUANO (Real Peruvian), STICKS, LABELS, BOUQUET WIRE, and every GARDEN REQUISITE.

FIBRE, 3*d.* per bushel; per truck of 2 tons, 35*s.* The best coarse SILVER SAND, 1*s.* 6*d.* per bushel; 12*s.* 6*d.* per ½ ton; 22*s.* per ton.

BEST YELLOW BETCHWORTH LOAM, 1*s.* per bushel.
LEAF MOULD, 1*s.* 6*d.* per bushel.
PEAT MOULD, 1*s.* per bushel.
COMPOST for Potting or for Garden, 1*s.* per bushel.
SPHAGNUM MOSS, 7*s.* 6*d.* per bag.
Our speciality TOBACCO CLOTH and PAPER.
Universal MANURE. The best yet offered—a very powerful Fertiliser, 13*s.* per cwt.
PERUVIAN GUANO, as imported, 18*s.* per cwt.; 56 lb., 11*s.*; 7 lb., 2*s.* 6*d.* All bags 4*d.* each.

Terms, Cash with Order, or Trade reference.

The HORTICULTURAL SUPPLY ASSOCIATION, Station Road, Elephant and Castle, S.E.

CARBON PASTE.

Hop, Fruit Growers, Florists, and Market Gardeners, will find STEVENS AND CO.'S CARBON PASTE a most wonderful and economical preparation for the certain destruction of every kind of insect, parasite, and caterpillar that infest trees and plants; cures mildew and blight, and clears Grapes from mealy-bug, &c., and is guaranteed not to injure the most delicate foliage. 1 lb. tins, 1*s.*; 3 lb., 2*s.* 6*d.*; 7 lb., 5*s.* 6*d.* Special quotations for large quantities. To be had of all Seedsmen, Chemists &c.; or a Sample sent free for 1*s.* 6*d.* by Mr. STEVENS, Chemist, 67, High Street, Borough, London, S.E.

STEVENS AND CO.'S AMORTISER is particularly recommended for Greenhouse Plants, as it destroys all insects, and does not injure the most delicate foliage, and is of a pleasant perfume. A Sample free for 1*s.* 6*d.*

FINEST TOBACCO CLOTH and PAPER, at 8*d.* and 9*d.* per lb., 28 lb. 18*s.* Special quotations for the Trade.

J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, E.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.: 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag. SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons.
WALKER AND CO., Farnborough Station, Hants.

BEESON'S MANURE
Is the best for all Horticultural Purposes.
In Tins, 1s. and 2s. 6d. Sealed Bags, ½ cwt., 8s.; 1 cwt., 13s.
MANUFACTURED BY
W. H. Beeson, Carbrook Bone Mills, Sheffield.
Wholesale Agents: Corry, Soper, Fowler & Co., Ltd., 18, Finsbury Street, E.C., and Shad Thames, London, S.E.
Supplies can be obtained through all respectable Seedsmen and Florists in the Kingdom.

THOMSON'S VINE and PLANT MANURE.
This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.
Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.
Circulars, with full particulars, on application to
THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

Weeds Eradicated from Lawns.
WATSON'S LAWN SAND (the original Lawn Sand) destroys both Daisies, Plantains, Ribgrass, &c., and invigorates the Grass. Testimonials and instructions on application. 36s. per cwt.; 28 lb. tins, 10s.; 56 lb. kegs, 19s. each; sample tins, 5s., 2s. 6d. and 1s.
W. D. BARBOUR, 3, Park Row, Leeds.

Certain Sudden **DEATH**
to all Grubs, Woolly Aphis, Green and Black Fly, Lice, Red Spider, Thrips, Mealy-Bug, Caterpillars, Ants, Worms, &c.
FIR TREE OIL INSECTICIDE (SOLUBLE IN WATER)
For destroying ALL INSECTS and PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage. It cures Mildew and Blight on Fruit or Foliage, and a weak solution Kills all Vegetable Grubs, Turnip Fly, &c. Clears Grapes from Mildew or Mealy-Bug without affecting the bloom. Thickened with a little clay makes a good winter dressing. Destroys Lice and Fleas on Animals and Birds. Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., and 4s. 6d. a bottle. Per gal. 12s. 6d., or less in larger quantities. Per post 3d. extra.
A treatise on FIR TREE OIL as an Insecticide, its application to Plants and Animals, sent Post-free on receipt of address, by the Manufacturer,
E. GRIFFITHS HUGHES, Manchester.
Wholesale:—HOOPER & CO.; CORRY, SOPER, FOWLER AND CO.; C. E. OSMAN AND CO; and from all the London Seed Merchants and Wholesale Patent Medicine Houses.
New York:—ROLKER AND SONS.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.
GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens and Conservatories, supplied to Nurserymen and Seedsmen by WILLIAM RANKIN AND SONS, 10, Carlton Place, Glasgow; and at Lisbon, Portugal.

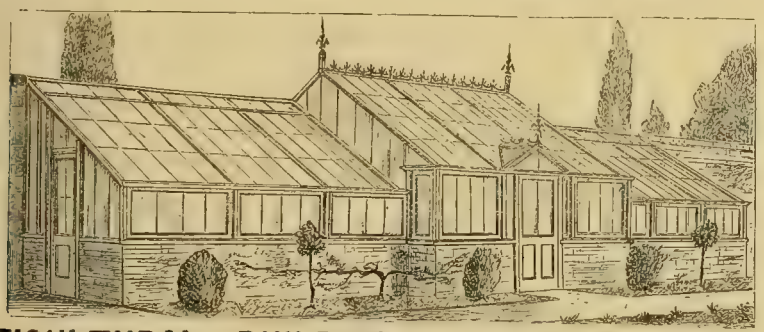
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JOHN MATTHEWS, THE ROYAL POTTERY, WESTON-SUPER-MARE. Manufacturer of TERRA-COTTA VASES, FOUNTAINS, ITALIAN BASKETS, BORDER TILES, GARDEN POTS of superior quality from 1 to 30 inches diameter, stand the frosts, and seldom turn green; ORCHID, FERN, SEED and STRIKING PANS, RHUBARB and SEAKALE POTS, &c. Price LIST post-free. Sheet of Designs, 6d. Book of Designs, 1s.

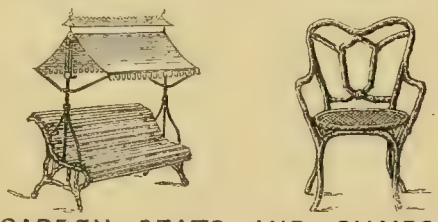
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Send stamped envelope for Pattern.
J. KAY AND SONS, Burnley Wood Mills, Burnley.

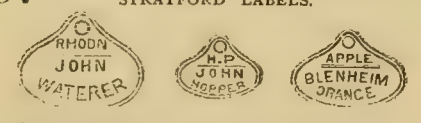
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2 yards wide, 1½d., and 4 yards wide, 3d. per yard run.
Scrim, Hessian, and Tiffany, for protecting Fruit Trees and shading Greenhouses, from 2½d. per yard and upwards.
Russia Mats, Raffia Fibre, Tobacco Paper and Cloth, Cocoa-nut Fibre Refuse, and other Sundries at the lowest possible prices.
CATALOGUE post-free on application.
JAMES T. ANDERSON,
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Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)

This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.
Sold in Casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.
UNSOLICITED TESTIMONIAL.
"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."
CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.
H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years, and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.
Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to
HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow


HORTICULTURAL BUILDINGS, IN WOOD OR IRON.
Ranges, Conservatories, Greenhouses, Forcing Houses, Nurserymen's inexpensive Growing Houses, Pits, Frames, Heating Apparatus, Boilers, Summerhouses, &c.
Illustrations, full particulars, and Prices, Post-free from
T. H. P. DENNIS & CO., CHELMSFORD.
LONDON OFFICE:—MANSION HOUSE BUILDINGS.

LAWN TENNIS CHAIRS.

GARDEN SEATS AND CHAIRS
the Largest Assortment in London at
R. HOLLIDAY'S SHOW ROOMS,
The Pheasantry, Beaufort Street, Chelsea, S.W.
For Price, &c., see Catalogue.
WATER BARROWS, GARDEN HOSE, ROLLERS, LAWN MOWERS, &c.; also for
GARDEN and CONSERVATORY WIREWORK,
see Special Catalogue.

Under the Patronage of the Queen.
J. SMITH'S IMPERISHABLE STRATFORD LABELS.


The above Labels are made of a White Metal, with RAISED BLACK FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

BAMBOO CANES.—Thick for splitting and thin for using whole. The largest holder in England. P. B. HARKIN, Dutton Street, Liverpool.

PAXTON'S CALENDAR.

THE COTTAGER'S CALENDAR
OF
GARDEN OPERATIONS.

ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

The Earliest and Best Strawberries in the World!

LAXTON'S "KING of the EARLIES"—the earliest; and THE CAPTAIN, a true large Perpetual.

Growers who desire to secure Early Runners or even Plants at all, should apply at once for particulars, as the stocks are being taken up for Market purposes. Coloured Plate 6*d*.

T. LAXTON, Seed Grower, Bedford.

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To the Trade only.

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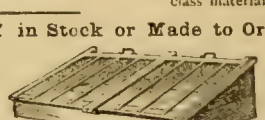


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To Nurserymen, Seedsmen, and Florists.—Established 1856.

LEWIS ISAACS, IMPORTER OF DUTCH BULBS, 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., begs to inform his Customers and the Trade in general that he has again arrived from Haarlem, in Holland, with his annual well selected stock of Bulbs. As an advantage to the Trade only, he begs to offer his named HYACINTHS, good picked Bulbs, all true to name and colour, at an all-round price of 3d. per Bulb, in any quantity from half a dozen of a sort and upwards. The stock is on view to intending purchasers, at the above address, which is only 3 minutes' walk from Aldgate Station.
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MESSRS. GREGORY AND EVANS beg to call the attention of the Trade to their first of Annual Sales of ERICAS, of all the leading varieties for winter and spring blooming; also large quantities of SOLANUM and CYTISSUS, which will be offered early in September, of which due notice will be given. Inspection invited.
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THE EXECUTORS of the late B. MALLER beg to offer to the Trade a very extensive and extra well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMENS, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GREVILLEAS, VINES (in pots), &c. An inspection is invited. Trade CATALOGUE forwarded on application.
The ANNUAL SALE by AUCTION will be held on TUESDAY, September 16.
Burnt Ash Lane Nurseries, Lee.

OFFERED FOR EARLY ORDERS:—HELLEBORUS NIGER, fine strong Plants, 26s. per 1000. Strong Tubers of CYCLAMEN EUROPÆUM, 24s. per 1000; Smaller Tubers, 14s. per 1000. NARCISSUS POETICUS, 14s. per 1000. LILIUM MARTAGON, 30s. per 1000 CYPRIPEDIUM CALCEOLUS, 80s. per 1000. VERATRUM ALBUM, 45s. per 1000. Seed of HELLEBORUS NIGER, 12s per kilogramme. A sample of the most popular and beautiful Alpine Plants, together with packing, and properly addressed, from
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Great Culture of AZALEA INDICA, AZALEA MOLLIS, CAMELLIAS and RHODODENDRONS in Bud Nurserymen requiting these Plants by hundreds or in larger quantities, are requested to send their orders as early as possible. A. D. will not be able to guarantee the execution of late orders.
Immense numbers of the following Palms, &c., are also cultivated in this establishment, viz., Areca lutescens, Latania borbonica, Phœnix reclinata, Phœnix tenuis, Seaforthia elegans, Ptychosperma Alexandræ, Aspidistra fol. var., Dracæna terminalis Dracæna indivisa, Spiræa japonica, Crotons, Ficus, Bromeliads, Ferns, Orchids, &c.
Prices and dimensions sent on application, as also the General CATALOGUE of the Establishment.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 9, 1884.

DROPMORE.

THOUGH one of the best seen places in the kingdom, yet there are some who must of necessity visit Dropmore for the first time, and such was my own case when, but a few days since, I was driven through its woody glades, teeming with surprises at every turn and beauty everywhere. Dropmore, though so popular a show place, yet differs greatly from many others, because it includes trees and shrubs everywhere, and from entrance to exit the visitor seems scarcely for a moment to quit the shade of the one or the cool delicious greenness of the other. My conductor, well acquainted with every path and turn, carried me through many a mile of rich growth of Rhododendron and Azalea, of noble and beautiful trees, now shut in as in a dense thicket, now emerging into some lovely glade, or for a moment breaking sunshine by the side of a bit of Heather or, perchance, of flower-skirted path. Then came some special objects of beauty, not the least attractive of which was an Azalea in luxuriant bloom at the end of July, making the woodland sweet with its delicious fragrance. Then it was a monster bank of Rhododendrons, the huge plants towering up one above the other like a series of rugged green cliffs. Anon broke into view a grand Cedar of Lebanon and lofty Douglas Fir, a gigantic Cryptomeria, a singularly elegant Araucaria, or a pendulous Deodar, with wondrous wealth of many other Coniferæ, such as any gardener may well be proud to exhibit to admiring visitors. It was reserved for the climax of the pleasures of the visit that I should see the magnificent Douglas Fir which old Phillip Frost, the gardener—whose memory seems to recall days of remote generations—regards as his especial charge, but which a fierce and unfeeling wind has robbed of some of its more lofty branches. Even more remarkable than the Douglas, however, do I feel to be the grand and singularly perfect Araucaria of which so much has been written from time to time, and which is almost as well known in these days as is the Monument. Just now it is bearing many catkins, for it is a male plant; and were it surrounded by a colony of females, prolific seed-cones might be abundant. The nearest, however, is some 80 yards distant, but still it is producing some seed cones which doubtless will prove fertile. It need hardly be said that stories concerning these and many another noble Dropmore tree are told with the heartiest gusto. They are rich and racy, and, unlike some oft-told stories, lose nothing in repetition, but form one of the charms of a Dropmore visit. In the course of my long drive through the outer woods, a couple of trees struck me as being the most beautiful of all I had noticed, though perhaps not the most remarkable. In one spot, on a triangular space, and where three drives met, we saw, only to stop and intensely admire, a singularly beautiful specimen of Abies Albertiana, one of the most charming of a

grand family of trees—a specimen that lovers of beautiful trees might well travel miles to see. Then in another spot we came upon a handsome lofty specimen of Cedrus atlantica, too much hidden by other trees, but still a beautiful, striking, and most perfect tree, its singularly bluish-grey foliage standing out in marked contrast to the surrounding mass of natural greenery. Both these trees are perfect pictures, and should be seen by all who visit Dropmore.

Without doubt one of the reasons of the splendid development seen in all kinds of Pinuses at Dropmore is found in planting them over deeply moved soil, and on mounds, or, at least, somewhat elevated positions, so that the roots are kept fairly dry; further, they are helped by occasional top-dressings of good soil, and are thus encouraged to root near the surface.

Naturally the gardens call for little notice, because the trees are the features of the place. Still the curious old-fashioned elements seen in the flower gardens and pleasure grounds, almost identical with what were to be found in them when William IV. used to visit Lord Grenville and chat over the horticultural as well as the political incidents of the day, carry one back to remote times that vanity forbids recalling. Almost the same kinds of plants fill the beds, the same flowers are seen in the long rambling borders, everything seems to have stood still. Away in one grassy glade, surrounded by lofty trees and brightened by some simple beds of flowers, I saw huge standard Fuchsias, one of which, the ancient Riccarton Fuchsia, Mr. Frost affirms to be forty-five years of age, and the massive stem bears evidence of his truthfulness. Amongst others, that early and once favoured kind, Venus de Medici, makes also a noble standard. In other portions of the grounds the old coccinea and Riccartoni make handsome bushes, flowering beautifully all the autumn season. The most striking flower-beds were a couple filled only with the rich yellow-flowered Gazania splendens, which in the bright sunlight gave colour such as no other bedding plant could excel. *X.*

New Garden Plants.

BULBOPHYLLUM SILLEMIANUM, *n. sp.**

THIS is an elegant creeping Bulbophyllum, which must be regarded a member of the Sarcopodia. If in arranging these we consider the mode of growth, it is the neighbour of Bulbophyllum cornutum, Lindl. (Ephippium cornutum, Bl.), but which is very easily distinguished by the singular appendices of the column, as also by the spotted perigone. The bulbs appear to be nearly sphærical in a sketch kindly presented me by Mr. J. Day. Leaves cuneate, ligulate, acute. Flowers with short, blunt, triangular sepals; shorter petals, nearly orange. Lip mauve above, whitish beneath, heart-shaped at the base, pentagonous, with reflexed apex. Column with very short apiculi.

It was imported from Burmah by Mr. A. Sillem, Laurie Park, Sydenham, who has had it well grown by his gardener, Mr. Billiald, who is famous for his management of Phaius tuberculosus. I had, in March, 1883, a flower kindly sent by Mr. H. Veitch, and lately, a flower and a fine petal sent by Mr. J. Day, both coming from the same place. It is dedicated with great satisfaction to Mr. A. Sillem, who, though sending flowers but seldom, decidedly always sends something remarkable. *H. G. Rchb. f.*

* *Bulbophyllum Sillemianum*, n. sp.—Rhizomate repente; pseudobulbis subsphæricis (?), monophyllis; foliis cuneato ligulatis obtuse acutis pedunculis monanthis brevioribus; sepalo impari ligulato obtuse acuto; sepalis lateralibus oblongo triangulis obtuse acutis multo latioribus; tepalis ligulato falcatis obtuse acutis; labello longe unguiculato cordato pentangulo antice acuto reflexo crassiusculo; columna brevissima ampla utrinque antice obtusangula, medio utrinque juxta androclinium breve apiculata; anthera vertice tumore lineari. *H. G. Rchb. f.*

THE MANUFACTURE OF FLOWER POTS.

THE whole of the clay used in the well-known pottery of Mr. Matthews, of Weston-super-Mare, is dug on the estate, which covers about 10 acres. The best clay is found on the surface, at a depth varying from 7 to 10 feet, and this being largely impregnated with silica is used for the fancy work. Then comes a stratum of 5 feet or 6 feet of blue clay, the bulk of which is converted into pipes, bricks, &c. The clay is dug in the winter time, finding employment for many of the tile and brick makers. It is then wheeled away a little distance, where it is left to be tempered by the action of the atmosphere. Frosts and sunshine are important agencies in this tempering process, which requires a great deal of constant care to keep the various piles in readiness for use.

Before entering the buildings in which the various processes of manufacture are carried on, it is just as well to correct a misapprehension which is very prevalent as to the nature of the employment. A mistaken idea prevails that unskilled labour only, or at all events only a very little skilled labour, is employed. On the contrary, the majority of the adults employed on the premises are those who have served their apprenticeship to the firm. Apprentices are taken at the usual age of fourteen, generally without premium, for a term of seven years. The operatives, however, are not hampered by the arbitrary interference of trade councils, for, fortunately for themselves, they have not yet discovered the necessity of a trades union, and we believe we are right in stating that the friendly relations which have hitherto subsisted between the employer and employed have never yet required the intervention of a third party in the settlement of affairs. The boys are apprenticed to the firm, and not to the men, as in some other trades, and as all the work is paid for by results, superior skill and industry obtain their reward. Even in the most elementary department a great deal of care and observation are necessary, and it is astonishing what an amount of pains are taken in the proper selection of clay for the various descriptions of work, and the nicety with which it is prepared for use. Accompanied by Mr. Chas. Abrey, the able and genial manager of the works, we now propose to commence our inspection of the actual mechanical and manual processes of manufacture carried on within the various piles of buildings. We first of all inspect the room where the clay is ground by machinery. Every particle of it is passed twice through a powerful machine worked by a 10-horse power steam engine, and when the condition is pronounced satisfactory it is conveyed to an adjacent room and covered with wet cloths until required for use.

We next proceed to what is known as the "potters' room," one of the most interesting departments in the establishment. Around the spacious room are seated a number of potters in front of their wheels, all of them of the most primitive design. The motive-power of the wheel is from a treadle worked laterally by the left foot. In moulding the clay a good deal of water is used, and even the vessels containing this seem to have been copied from the patterns of the remotest ages—that is if there is any pattern at all about them, for they consist merely of a mass of moist clay on the workman's right hand. Before settling down to work in the morning the potter obtains a good supply of clay, which he puts through the "wedging" process. The object is to perfect the tempering, and it is done by a simple system of kneading. A huge lump of clay, 30 lb. or 40 lb. in weight, is cast upon the bench, cut in halves with a thin wire, the pieces dashed together again, kneaded, then cut again, and the process continued until the workman is thoroughly satisfied that there is no longer the slightest inequality left. He then divides it into smaller pieces, which he converts into long rolls about the thickness of his arm. With an amazing accuracy, which can only be acquired by long experience, he breaks it up into balls which are larger or smaller according to the size of the pot to be made, and he is very rarely wrong in his judgment. In this room flower-pots varying from 1 to 9 inches in diameter are manufactured. Halting by the side of the first wheel we come to, we observe that the pot is one of the lesser sizes. The workman dashes upon the wheel one of the balls of clay, and inserting his thumbs in the centre he adroitly hollows out the mass, which rises up as though by magic, and in much less time than it takes to tell it the flower-pot is shaped in accordance with the regulation pattern. The maker keeps both his own hands and the clay thoroughly moist whilst he is proceeding. To ensure all the pots being of a uniform size and diameter, a sort of guide, consisting of pieces of wood with pointed ends, is fixed at right angles to an upright pole. The wheel revolves "with the sun," and it is a singular fact that if the order be reversed, and the wheel be turned from left to right, the pot will not rise into shape. When properly shaped, the potter passes a thin wire under the bottom of the pot to cut it away from the revolving wheel, and carefully places it upon a board on the left of his wheel. This board will hold about sixty pots, and when it is filled it is carried away to one of the drying rooms, of which we shall have more to say anon. The potter, an exceedingly intelligent man, informs us that he can make 600 flower-pots of that size in a working day of ten hours. At the next wheel we see for the first time how "Long Toms" are made. Professional horticulturists are delighted with "Long Tom." It is a kind of flower-pot much more useful and convenient than those in common use, as it offers conspicuous advantages to all who grow small plants in a large bulk. The material used in their manufacture is hard, pure, and durable, the weight is but little, as owing to the superior quality of the clay the walls of the pot are thinner than those ordinarily made. They are so evenly and finely moulded that they present a striking contrast to ordinary stocks, and from having a greater depth and less width at the top they are appropriately called "Long Toms." The increased root space thus given means a larger and more valuable plant in the same surface space; and another consideration of importance is that a much larger number can be set in a given space than of the ordinary pot. They are made in sizes varying from 2—6 inches in diameter, and form one of the staple products of the establishment.

After a hasty glance at the other wheels, six or seven in all, we pass into the next room, which contains the hand-wheels. It is on such wheels as these that the large-sized pots, varying in size from 10 to 30 or 32 inches, are made. As these are too heavy to be worked by the treadle, a boy has to turn them by hand. Returning to his bench, we notice that our friend the ancient apprentice has in front of him a number of plain newly-made flower-pots, about 10 inches in height and 4 or 5 inches in width. The sides are perfectly straight, and they have no rim. On the potter's right is a pile of very fine clay, somewhat thinner than that employed in forming the pot itself. Breaking off bit after bit, he dabs it upon the side of the pot in a manner that would convey to the outsider the impression that he was amusing himself, and finally pushes into each projection a piece of harder clay in the form of a small cork, the outer end of which is cut off very smoothly. It is afterwards handed over to a boy who, with a piece of stick, the end of which has been cut so as to loosen the fibres, giving it the appearance of a paint brush that has been worn to the stump, stipples the moist clay, and in a twinkling almost there appears a rustic flower-pot covered with bark and natural protuberances, the clay corks showing up as cut branches. But the ornamentation is not yet complete. Another rim with an ornamental band is added, and so on, according to the design; section after section may be introduced until you have before you one of the most beautiful garden ornaments. Each potter is engaged upon different patterns; but a description of one suffices for the whole. We may, however, mention that the leaves and flowers which frequently form a belting round these first-class flower-pots are usually produced from a mould and laid on by hand; and from the time the clay leaves the pit until it has passed forward to the drying-room and kilns, it only passes through the hands of one man and his boy, though in some cases the man works without the assistance of a boy, except for turning the hand-wheel.

Proceeding to the room below, we find an Italian modeller engaged in finishing the bowl of a huge Roman vase of great beauty of design. With sponge and water he is gently polishing the exterior, touching up the leaves and petals of the flowers, &c. Here are numberless moulds of most artistic designs; among others is the beautiful Curragh Chase pot and stand. A fragment of this interesting relic having been found on the Curragh Chase Castle estate, Lady De Vere kindly sent it to Mr. Matthews,

and from it he made the mould in question. It is one of the products of the pottery which meets with a great sale. There are also the Derby, the Spencer, the Warwick, the Bute, the Colston, the Knyfton, the Beaconsfield, the Marston, the Pigott, the Denison, and a variety of other vases. The clay is pressed into the moulds, where it is allowed to remain for a day or two until it is partly dry. The mould is then removed in sections, and extra ornamentation in the form of flowers, faces in *alto relievo*, &c., are added.

We next proceed to one of the three roof-tile making sheds, where plain and fancy tiles are turned out with mavellous rapidity. The great feature in this department is the making of Pool's patent "Bonding Roll" roof tile, the sole right of making which has been acquired by Mr. Matthews. It has proved a great success, and there is no doubt that it will become even still more popular, combining, as it does, the principle of the corrugated or double Roman tile and slate. Unlike all other tiles there is no necessity to cut off the corners. The roll and fillet on either side correspond the whole length of the tile, and being carried over the middle of the lower tile, instead of falling over the joint, as in the old form, leakage is obviated. Another advantage is that more or less lap can be given according to the pitch of the roof. There is no need of employing felt or other inflammable material under them, and they are said to be proof against drifting rain or snow, the "bond" being perfect in all its parts. Great care is taken to ensure that each tile shall be true. As it leaves the mould it is placed upon a rack, where it remains for a day or two until it has dried sufficiently to go through the next process. Occasionally they are found to warp slightly, and in order to avert the smallest defect in this respect every tile is passed over a wooden dressing-horse, which effectually restores them to a perfect shape.

The brick-making machine is worked by a 10-horse power steam-engine, which is capable of turning out an immense quantity of work. Without lingering here longer than necessary, we go to the kilns, of which there are four, one of them being heated by as many as sixteen fires, eight on each side. This is the last, but by no means the least, important process before the manufactured article is ready for the market. In the first of these we come into contact with a procession of youths converging from the different drying-sheds. Already the bricks have been arranged around the walls and upon the floors, and workmen are piling up garden border tiles of the cable and other fancy patterns. It is necessary we should state that, in order to econmise space and fuel, the flower-pots are "nested"—that is, half-a-dozen or so of different sizes are placed within each other and in the kiln are turned upside down, so as to free them from contact with each other, and permit the hot air to thoroughly encircle them, thus equalising the burning process. The kiln having been filled to the roof, the door is bricked up, and covered outside with moist clay, so as to effectually exclude the cold air, and at the same time retain the heat. The burning process requires great skill and judgment; a little neglect may cause considerable loss, either by over-firing or allowing the fires to get low, thus permitting the cold air to gain access to the goods, which, if allowed, would result in great damage. The fires are started very steadily at first, the drying-off process taking from fifty to sixty hours. When the burning process commences the fires are gradually increased, and in about thirty-six hours, as a rule, the goods are sufficiently burnt. The fire doors are now closed, and the fires allowed to die out gradually, the cooling process taking from three to four days, when the goods are wheeled out to the stacks, or loaded into waggons to supply orders.

The firm employs about fifty men and boys, and to show the magnitude of the trade, we may mention that last year no less than one and a half million flower-pots were manufactured. *Abridged from the "Bristol Times."*

HYPERICUM REPTANS is a Himalayan species, which only needs to be more widely known to win for itself a place in every well kept rockery. It is a procumbent plant with Thyme-like leaves, and flowers very large indeed in comparison with the size of the foliage, &c. It does well in any well-drained garden border, particularly if a number of stones be placed round it, but appears to best advantage when stuck in a crevice between large pieces of rock and its tender shoots allowed to hang down over the stones.

FORESTRY EXHIBITION.

(*Continued from p.* 136.)

INDIA.—Amongst the various exhibits, perhaps the largest and most important is that contributed by our Indian possessions. These are neatly arranged in the central transept, and include very extensive collections of woods, forest products, both in a raw and finished state, implements of forestry, examples of native industry, as well as a variety of miscellaneous objects, to which we shall have occasion to refer at some length later on. The most important for present reference is known as the "Indian collection of timbers," sent by the Indian Government from Calcutta. This immense collection comprises about 800 specimens of timber, all of which have been cut from indigenous trees. They are not only distinctly named, but in many cases the labels contain a vast amount of information regarding the texture and durability of the timber, as well as strength, weight, and uses to which it is generally applied. Another point which deserves special notice is the arrangement of this collection, for the gum and resin producing trees are placed by themselves, and so on with those yielding tannin matter, dyes, oils, and fibres. The Padowk tree (Pterocarpus indicus), of which there are some beautiful logs, seems, from the number of uses to which it is applied, a most valuable acquisition.

The timber of this tree varies very much in colour, that from some specimens resembling very nearly our common Larch, while others can hardly be distinguished from the finest Mahogany. A beautiful and much-admired mantelpiece made of this wood is also exhibited, as well as various other articles, all of which clearly prove that this timber is admirably adapted for decorative purposes generally. Numerous sections of the invaluable Teak tree (Tectona grandis) are shown both in a rough and finished state. This wood is exported in great quantity to Britain, being found of immense value in the construction of vessels, railway carriages and waggon wheels. The beautiful carved work in which it is also used is well exemplified in the cabinets, panels, and furniture sent for exhibition.

From Burmah come some immense Bamboo canes ranging in length from 80 to over 90 feet, and said to have been the result of one season's growth. The Sisoo, another beautifully grained wood, is in great request for carriage-wheels, and seems remarkably light and tenacious in proportion to its weight. Of resins, oils, gums, perfumery, and vegetable dyes there is also a large and varied collection, as well as native carts and waggons, articles of furniture, all of the most exquisite design, and the highest excellence of workmanship. Hunting trophies, as illustrative of the fauna of the forest, have been lent by H.R.H. the Prince of Wales, Prince Christian, the Duke of Edinburgh, &c., and arranged with great taste and set up with artistic skill. The above magnificent collection of Indian resources has been set up by Colonel Michael, who has been appointed director of the Indian collections, with an amount of taste and skill that is well worthy of imitation.

CYPRUS.—The mountainous portions of this island were at one time covered with splendid forests, but of these it has now been denuded by years of the wanton destruction which invariably accompanies Turkish occupation. The principal tree of the island is the Aleppo or Jerusalem Pine (P. halepensis) of which about nine-tenths of the forests are composed. This tree, of which various specimens are exhibited, is extensively used for building and other purposes; while the bark yields a tannin matter, and the wood a valuable resin. The Corsican Pine (P. Laricio) also exists in considerable quantity near the summit of Troodos, and is not only more valuable, but attains to a greater height than almost any other tree on the island. Specimens of this wood as here exhibited bear out the statement we have often expressed as regards the value of this timber, which, ere long, we hope to see more freely used in this country than it has hitherto been. Large quantities of the upright Cypress (Cupressus fastigiata) must formerly have existed on the island, but it is now almost extinct—a statement which we may also apply to the Cedar of Lebanon, a few thousands of which still exist in a single locality, but of which in former times there was a large quantity. The Carob tree (Ceratonia siliqua) abounds in some districts; its succulent pods are exported in quantity to Egypt and Syria, while the fruit, called St. John's Bread, is used as an article of food. Besides the productions already named, cotton of the finest quality is also produced, as well as madder, opium, Oranges, Lemons, and Pomegranates, in all of which this island is particularly rich. The above interesting exhibits have been sent by Mr. Edward Dobbs, the principal forestry officer in Cyprus.

SINGAPORE.—From this island, a British settlement, situated at the southernmost extremity of the Malay peninsula, comes a goodly number of specimens of indigenous forest trees, chief among which are the Seriah, the Daroo, and the Ballow, a kind of Teak. The greater part of the island is well forested, the woods being composed of different kinds of trees, several of which are well adapted for house-building. The soil of the interior is composed of sand or clay-ironstone, with a large percentage of vegetable matter, which gives it a very black appearance. Near the coast are some low tracts of swampy ground, on which a hard and durable tree, named the Billion, is commonly found. The Pepper tree and Betel Vine (Piper siriboa) are well cultivated, as well as different fruits, vegetables, Nutmegs, Rice, Coffee, and Cotton.

THE ISLAND OF MAURITIUS contributes a most interesting collection of fibre-producing plants, no less than 200 specimens in a rough state being shown. In addition to flowers and fruits the soil of Mauritius grows Wheat, Maize, and Yams, but the principal product is sugar. None of the timber is of great size, but amongst those exhibited many appear of first-rate quality and well adapted for general purposes. Hundreds of acres of the low-lying lands on the northern and western districts of the island, where formerly the Sugar-cane grew, are now waste and unemployed, owing partly to the effects of hurricanes, drought, and disease of the cane. To replace this land numbers of acres of the primæval forests have been cleared away, which it is believed has had an injurious effect upon the island by increasing the temperature, and, therefore, correspondingly lessening the humidity of the soil.

SIAM.—This country, long noted for the variety and abundance of its fruit trees, is also particularly rich in valuable timber trees, including the Teak, Sandal, Ebony and Rosewood. The forests, which cover nearly all the mountain ranges of the country, also yield several articles of trade, such as cardamoms, gamboge, and Aquilawood, the latter much renowned for its perfume. A very extensive and interesting collection of these native woods, numbering over 500, and all distinctly labelled, have been sent for exhibition, including, amongst others, those producing gums and resins. The most important industrial occupations are iron and tin smelting, gold beating, the making of cloth, glass and pottery.

TOBAGO.—Well arranged on a side-table in the British Guiana court is a fair representation of timber industries from the above island—the most southern of the Windward group. Excellent timber, although in limited quantity, is produced on the higher grounds of the island, and of which various interesting specimens have been sent for exhibition. The planters confine their attention almost exclusively to the cultivation of sugar, and the manufacture of its collateral products—rum and molasses. Cotton, Indigo, Coffee, and Cocoa-nuts are also grown, but in very limited quantities. Some interesting exhibits of tree seeds are also shown, but these are principally of an ornamental character, such as those of "Job's Tears," which are much in use by the natives for decorative purposes.

NEW BRUNSWICK.—The great commercial wealth of this colony consists in its extensive forests, which are composed principally of Pine, Fir, Spruce, Birch, Beech, Maple, Ash, Elm, and Poplar. These dense forests, of which only a comparatively small portion has been cleared, cover an area of about 1,000,000 acres, the value of exportations amounting to over £1,000,000 sterling a year. Forty specimens of these native woods, all beautifully polished, are exhibited, and give to the visitor a pretty fair idea of their texture and quality, most of these being light-coloured and easily worked. Other exhibits from New Brunswick include, amongst a variety of interesting industries, charts and maps of the Province, with the location of forests, pamphlets descriptive of woods available for economic purposes, specimens of wood pulp, and tools used for wood working. The soil of the island is fertile, and produces good crops of Potatos, while Wheat, Indian Corn, and common vegetables are also grown.

(*To be continued.*)

JAMAICA, ITS ORCHIDS, &c.

ONE of the principal drives across the island of Jamaica is by the Bog Walk, and starts from Spanish Town, the ancient capital of the island, to St. Ann's Bay on the north side. Three-quarters of an hour in a train takes one from Kingston to Spanish Town where one finds a post-office omnibus drawn by three mules abreast to take one to St. Ann's Bay, a distance of 48 miles. There are three changes of mules on the way and the trap is pretty comfortable. The fences for the first 5 miles are made entirely of Pinguins (Bromelia Pinguin), and are absolutely impenetrable to the most enthusiastic Orchid hunter, though the bright flowers of Broughtonia sanguinea are to be seen everywhere on the trees; then one comes to the beautiful Bog Walk, which is to be seen in perfection under a full moon, with a Sambo girl whispering its praises in one's ear. It is needless to say that I did not see it in perfection, but I saw it under the full rays of a bright sun tempered by a nice sea breeze. A witty governor of Jamaica about thirty years ago summed up the three delicacies of the island as being the black crab, the mountain mullet, and the Sambo girl. Two of these I can answer for, but the third and last remains inexperienced. The river flows swiftly close by the side of the road, its waters clear as crystal and the mountain mullet darting about. One crosses the stream by bridges which when the river is high are very often uncrossable. The tropical vegetation on either side of the road is magnificent and on every spare space of soil now is planted the Banana.

This pass continues for about 5 miles, and the road ascends to the top of the backbone of the island. The stone walls which take the place of the Pinguins for hedges are covered with Epidendrums fragrans and cochleatum. They grow everywhere on the banks of the road, on the the walls, and on the trees, and intermixed is a small Ophrys with pretty spikes of purple flowers. Phaius grandifolius or Bletia Tankervilliæ is also very common, and is generally distributed over the island, though I cannot understand how it came here, as it is a native of Hong Hong. After St. Ann's Bay the Orchids ceased and I could not find one of any tribe in a month's stay on the north side of the island. At the King's House, the residence of the Governor, there is a nice collection of Orchids under cultivation. Dendrobium Pierardi latifolium has stems full 7 feet long, and one mass of bloom; Dendrobiums nobile and tortile are also doing nicely, but the masses of Oncidium ampliatum majus surpass anything that I have seen in this country. Amongst others Oncidiums flexuosum, sphacelatum, altissimum, Papilio, and Krameri; Cattleyas Mossiæ, Skinneri, and Trianæ; Aërides odoratum, Epidendrum fragrans and prismatocarpum; Gongoras in quantities, and Mormodes and several Zygopetalums, were all doing well, but curious to relate, there was not in the island, that I saw, a healthy plant of Peristeria elata; although it comes from the mainland so near, and is planted under the same natural circumstances as it grows under at home, yet it does not thrive in Jamaica.

At Mr. Morresco's house, about 3 miles from King's House, there is a collection of about the same size and containing very much the same plants as I have mentioned, but he has also Dendrobium macrophyllum giganteum, doing excellently. Mr. Morresco is a genuine lover of Orchids, and means importing and trying to acclimatise a great many more genera of Orchids than we have yet seen in Jamaica.

The island on the whole is in a bad way: labour is scarce on account of the emigration of the nigger to the Panama Canal, but that will soon right itself. Sugar is down and going down; rum is not paying well; but fortunately for the landowners on the north side of the island an enormous trade has sprung up with the United States in Bananas. The Cocoa-nuts are still exported in great quantities, and the demand for them increases in the States rather than diminishes, so that each Cocoa Palm is said to be worth a dollar a year, and if it grows near one of the small but excellent harbours of the island, it undoubtedly is worth more than a dollar a year. A retired M.D. had some land left him near Annotto Bay, he added on to the property by purchase, and without any idea of gain, but merely for their beauty, began planting Cocoa Palms. Now he is one of the richest men on the island. When taking stock of his Palms he is said to have lost count at 130,000, but I will not guarantee the truth of the number; however, the whole of his land is covered with Palms. Coasting schooners carry on the trade with the mainland in Cocoa-nuts, and they take them with their outer husks on, and they give 5*s.* per 100 for them delivered on the beach.

But for the more perishable Banana fast screw steamers are employed, fitted up in their holds like cellars with bins and strong air pumps for refrigerating purposes. The "Banana King," as an ex-captain of a small trading schooner has been nicknamed, resides at Port Antonio; he began life as a seaman, and rose to be captain of his own schooner. His first attempt in the Banana trade was made about ten years ago, when he carried some sixty bunches to Charleston, and found it a profitable trade. He commenced then to buy up every bit of land he could near Port Antonio, and planted Bananas; gradually he bought screw steamers, and now he is buying up all the land near Morant Bay and Port Morant, where he is also planting Bananas. When he has not sufficient Bananas of his own to fill one of his steamers, he scours the country round to buy up those of his poorer neighbours, and one day that I was with him he was giving from 2*s.* 6*d.* to 3*s.* a bunch to make up a cargo. The profits in this trade amount to about 50 per cent. on the capital employed, when you own your own steamers and have your own Banana plantations. The Banana bears the second year, and requires very little in its cultivation, and consequently entails very little expense. A large trade is also springing up in Oranges, now that care has been exercised in selecting the right varieties.

The Orange tree flourishes best in the higher parts of the island, from an elevation of 1500—2500 feet; formerly they would not bear export from the rough way in which they were handled and packed, but now, from the great care employed, Jamaica Oranges can compete with those from Florida in any of the great centres of the States; they are of the most delicious flavour, and very large in size. Limes grow everywhere in the island up to an altitude of 2000 feet, and Shaddocks do also very well. The climate of the north side of the island is charming—to my mind the most charming in the world; a deliciously cool sea-breeze springs up about 8 A.M., and blows until 4 P.M., when there is a lull, and about 8 P.M. a softer land breeze begins to blow and lasts until 4 A.M. Stephanotis blooms most luxuriantly, and Maréchal Niel Roses attain to a size and colour and substance of blossom unequalled anywhere. I cut one morning seventy blossoms from a three-year-old plant—any one of which would have been a prize winner at a London Rose show. Tea Roses, such as Niphetos, Homer, &c., also do equally well. Yams and other vegetables a rich planter does not find it worth his while to cultivate, and he buys them all from his negro cottagers, and there is no attempt at a regular kitchen garden throughout the island.

The hotel accommodation throughout is very bad, and there would be an excellent opening for British capital in this line, particularly as the Canadians and some of the Northern Americans have taken to spending the winter in the island, and avoiding the rigours of the American season. Some of the beauties of Jamaica, in the way of waterfalls and lovely natural dells, I have passed over; but any one going out there can easily make themselves acquainted with them from the excellent handbook of the island published under the authority of the Government. *E. W. Walker.*

ECONOMIC PLANTS IN TENERIFFE.

REPORTING on the trade of Teneriffe, the British Consul makes some remarks on the agricultural capabilities of the island, from which the following notes are taken. He remarks that it is a matter of some surprise that, notwithstanding the mild nature of this climate, its even temperature throughout the year, the absence of all sharp frosts and scorching heats, and where everything almost might be made to grow, and living rendered cheap, only about one-seventh of the land is under cultivation. The crops of Wheat, Barley, and Indian Corn raised are insufficient for the wants of the country, and large quantities of the first necessaries of life are derived from abroad. Many kinds of fruit are cultivated, but with the exception of Bananas, which are mostly shipped for Spain, and Prickly Pears, the fruit of the Tuna, or Nopal Cactus (Opuntia Tuna), which are the principal food of the labouring classes in summer-time, and also perhaps Figs, the different varieties, abundance, and quality, are far inferior to those of Malta or Sicily.

Orange trees and Apple trees, although thriving well all over the island, seem to become attacked by blight, or oïdium, in some districts after the flowering and before the fruit comes to maturity, nevertheless good Oranges are plentiful.

The Caña dulce (Sugar-cane), Tobacco, and Coffee, also grow easily and yield returns, but they do not as yet hold out much prospect of becoming articles of export competition, and the expensiveness of the manufacturing process of sugar being the chief obstacle to the production of this article; but, notwithstanding the drawbacks, considerable quantities of the plant in the stalk of about 5 to 6 feet long were imported last year from Madeira, Grand Canary, and La Palma, and planted in this island with much success. As regards Tobacco, considering that the plant does not call for much care or attention in its cultivation, and only requires water at long intervals, it would no doubt be more extensively grown if only inducements were held out to farmers by the authorities.

The Coffee plantations at Salamanca, consist of about 200 or 300 trees each; although bearing abundant fruit, the yield is chiefly consumed by the growers themselves. The Coffee is of excellent quality, and there is no reason why this plant should not also be more extensively propagated. The climate and soil seem very suitable to its growth, especially when protected by the shade of other trees, when it will throw out horizontal lateral branches throughout its entire length, and in the early part of the year the branches are literally covered with fruit.

The greatest anxiety of all, however, is the discovery, if possible, of some vegetable product which will replace the Tuna or Cochineal Cactus. In view of this consideration, which is still occupying public attention, the Real Sociedad Economica de Amigos del Pais de Tenerife, the Royal Agricultural Society at Laguna, has for some time past been in active correspondence with friends in England, who have suggested the introduction into this island of fibre-yielding Nettles, especially the Rhea, or China grass, and the Helianthus annuus (Sunflower), but on this point Mr. Consul Depuis says:—"Whether any advantage will be taken of the many valuable suggestions made I am unable to say. I have very little doubt, however, in my own mind that the climate and conditions of this land would admirably suit those plants, requiring as they do little cultivation, and thriving in almost any soil. The Helianthus is a well known plant here, and I have seen magnificent specimens of them cultivated as ornamental plants. In short, since the unfortunate failure of the Cochineal as a remunerative product, the only agricultural resources remaining to this island for exportation seem now to be Potatos, Onions, and Garlic."

OAK DESTROYED BY LIGHTNING.

RARELY have we seen so complete destruction of a noble tree by lightning as that of which we give an illustration, from a photograph by Messrs. Field & Son, obligingly sent us by Mr. Harrison, of the County Seed Establishment, Maidstone (fig. 32). The tree was struck on July 5, in the Mote Park, near that town. Our illustration shows the destruction of the bole, some 8 feet in girth. A larger photograph, sent at the same time, shows how the main limbs were riven and scattered in all directions, as fully described in our issue for July 26, p. 114.

EVERGREENS.

TRANSPLANTING AND PROPAGATING.—There is much difference of opinion as to the proper time for transplanting evergreens, some contending that autumn is the right season, while others are just as strongly convinced that spring is the most suitable period in the whole year for carrying out the operations, and I quite agree that it is so, but, unfortunately, one has only a week or two then that can be counted on as favourable for doing the work, as it is not safe to begin till the cutting winds of March are over, and all ought to be complete before April closes. In the autumn the planter has at least two months open before him, as he may commence at the beginning of September, and go on till the end of October; but it should be borne in mind that the earlier the plants are moved, provided the weather is favourable, the better they do. The only things to wait for are moderate ripeness or hardness of young growth, and a good rain, although, where there is water in quantity to be had, it does not matter so much about the latter, as a soaking may be given at the roots, and a sousing

over the tops, which, unless the atmosphere happens to be very hot and arid, will generally keep the plants right. This being so, no one who has command of water as mentioned need hesitate starting by the middle of August, as they have only to choose the evergreens that will best bear the lifting, by being most forward in their growth or maturity, making choice of such things as Hollies, Laurels, Aucubas, Box, Rhododendrons, and plants that have thick hard leaves, leaving those that have thinner and more tender foliage till the last.

Most of the Coniferæ are very easy subjects to deal with, especially if they have not stood long without being transplanted, as then their shoots are firm, and they are more fibrous-rooted, in which state plants suffer but little from lifting, as there is but little or no shrinkage of the bark, and the feeders set to work at once. The great point in the removal and transplanting of trees and shrubs is to be as expeditious as possible in getting them up and in, for they suffer most from drying, which quickly causes contraction of the bark and flagging or distress in the foliage. When these evils occur, plants that are affected by them are thrown back and remain in an unsatisfactory state, from which they are slow in recovering. To prevent all these ills the spots where the plants are to go should be quite decided on before they are interfered with, and holes should be made sufficiently large to receive them. It is very seldom, however, that this is done, and yet it is of vital importance, as to cramp the roots by insufficient room and not break up the earth is to cripple the plant at the first start, for it might as well be walled in and concreted, so hard and firm are some soils. Whenever they are of this character the only thing for it is to thoroughly dig up the bottom so as to disturb it with spade or fork to a good depth, and to carry the sides of the hole far beyond what is absolutely needed for the spread of the roots of the plant. If possible, when filling in again, some fresh loose soil should be added; and it will be well, also, before this, if a dressing is thrown in and mixed up below; but leaf-mould and vegetable matter of that kind ought always to be avoided, as they tend to breed fungus, which gets on the roots.

In lifting evergreens the proper way is to open out a good wide trench around the plant, keeping well away from the stem, so as to avoid cutting the roots, which should be approached from the trench, and the soil carefully worked out from among them by the aid of a fork, when it may be thrown to the surface so as to give plenty of room to get well under the ball. The larger this is kept, so long as it can be lifted and moved readily without strain or breakage, the better; but the size must depend in a great measure on the appliances, and the distance the plant has to be carried. With a planting machine there is hardly any limit, but much may be done by the help of a few willing hands and strong levers. These latter are easily placed by making a passage under the ball, which may then be raised bodily and at once placed on a truck or trolley and drawn to the hole got ready for the plant, and into which it may be lowered or slid down smooth planks arranged for the purpose. To save trouble, the depth of the hole and the thickness of the ball should be first ascertained, so that the plant may be dropped on a bed made to the right height to receive it. With a body of loose soil under, it is better to have the collar high than low, which will allow for settling, as nothing injures a plant so much as burying its stem so that the crown or base is below the general level; and not only that, but every tree or shrub always looks far more effective raised than depressed, and especially is this so with all the Coniferæ. In filling in around the ball the point to be particular about is to see that no hollows or cavities are left, and the only safe way of providing against such a mishap is to wash in the soil



Fig. 32.—Oak struck by lightning. (see p. 168.)

by heavy dashes of water, thrown with such force and in such quantity as to carry earth with it, and leave it in a semi-liquid state in all of the fissures, where it will remain in a moist condition for a long period after, and encourage the roots.

To prevent evaporation a heavy mulching should be given, for by covering the earth all cracking is stopped and an equable degree of warmth and moisture maintained, which favour the plants' growth. What often militates against this in fresh moved things is wind-rocking, by the movement of the tree or shrub to and fro—a motion that must be guarded against by proper staking and tying, or the use of other means to keep the plant rigid. For tall subjects, such as Hollies or Conifers, the best way of staying the stems is to fix a strong soft collar around, placing it about three parts up, and from it running galvanised wire off in three different directions at equal distances apart. The ends should then be made fast to stout pegs driven well into the ground, when the plant will be rendered safe against breezes, from whatever quarter they blow. If the trees or shrubs moved be large, and the weather sets in dry after, it will be a great help to them if two or three times a week, during the evening, they are syringed or wetted overhead by using the garden-engine, as a dampling overhead in that way is very refreshing to the foliage and a powerful aid in the formation of roots, as they respond to the activity and health of the leaf, the two working together assisting each other.

The easiest way of propagating evergreens is by layers, and the work may be carried out at any time with success, as all that is necessary is to remove some of the soil immediately under a low branch, which may then be brought to the ground and kept there by means of stout pegs, when any side shoots should be partially buried, leaving only about 9 inches to a foot of the ends out; and if allowed to remain in that position for a year the greater portion will be found to have formed root, when they may be taken off and re planted. Although most evergreens strike from layers within the period named, Rhododendrons generally take twice as long, and to encourage them to root it is necessary to bury the stems of the shoots with sharp sandy peat, and keep it well watered that it may always be moist.

Laurels, Aucubas, and such-like plants may be struck freely from cuttings made of the half-ripe shoots, which should be taken off about a foot or 15 inches long, and trimmed and made in the ordinary manner, when they may be inserted in any sheltered half-shady spot, the best situation being vacant open places among shrubs, which break the winds, and thus screen and prevent them from dying. The proper time to put in evergreen cuttings is during September and October, and the same with Conifers, most of which root readily, but instead of being in the open and exposed like Laurel and Aucubas, &c., they must have the protection of handlights and be kept quite close till they strike. A good place for the handlights is the foot of a north wall, where the soil should be prepared by being mixed with sharp sand and made firm, when the cuttings may be dibbled in and watered, and if afterwards kept sprinkled few of them will fail. *J. S.*

LATE PEAS AND THEIR CULTURE.

The present season has not been at all favourable to the growth of late Peas. Hot dry weather set in during the time of flowering, and the pods, at least in our district, were not fully developed; the later pods in all cases were badly attacked with thrips, which prevented anything like a succession of pods fit for use being gathered.

In our district, where the rainfall for the year ranges between 21 and 24 inches, it is necessary to make preparations for a dry period between May and August; indeed, we frequently find September a very dry month, at least for the first three weeks of it. Under such conditions as those the plants must be encouraged to root deeply into the ground. When I had to deal with light gravelly soil, some years ago, we seldom failed to obtain good crops of late Peas. The ground was trenched-up 18 inches deep, and two layers of cow manure were placed in the trenches, one layer at the bottom and the other about 8 or 9 inches below the surface. The cow manure seems to retain moisture much better than stable manure, and is more solid in light soils. The Pea plants send their roots deeply into the rich manure, which affords them support however dry the weather may be. In the clayey soil of our present garden we are using stable-manure from a yard where peat litter is employed; this material is well adapted for keeping clay soils open. When the ground is well worked and heavily manured there is danger of the Peas making too much haulm, but if a distance of 4 to 4½ feet can be afforded between the rows, or even 5 feet for the tallest growing kinds, there will not be much danger from this cause.

There are now so many good free bearing varieties in cultivation that it is much easier to keep up a good supply of Peas in summer than it used to be. New Peas are being introduced every year, either by selection or cross-breeding, and both methods are desirable. It is always worth while to pay a little more for a good selected strain, but it is scarcely fair to make a selection and give it a new name. That this is sometimes done most growers of Peas are well aware. I remember when the variety G. F. Wilson was introduced; it had straight pods. I saved a lot of seeds from it, and the first sowing produced a number of plants with curved pods. I saved a quart of Peas from these curved pods, but they were neither better nor worse than the original. The year after I had a small parcel of Peas for trial under a new name, and they proved to be G. F. Wilson, with curved pods. The only difference would be that one variety would cost 1*s.* a quart, and the other 2*s.* 6*d.* Veitch's Perfection has been the original source of many selections; it is still a good Pea, but others have been introduced recently that will probably supersede it. The Peas raised by Dr. McLean and introduced by Mr. Turner bear good crops of well flavoured Peas. Dr. McLean should be a good market Pea, as it bears a heavy crop of well filled pods which come in at one time. A good successional bearer is better for the garden. We tried Telephone and Stratagem instead of G. F. Wilson and Dr. McLean, but I am not sure that the change was for the better. In our heavy soil Stratagem does not grow sufficiently; the plants are not more than 1 foot high, and Telephone certainly does not bear anything like such a good crop as it did in the light soil. Mr. Laxton's new Peas hitherto have not been quite first-rate as regards flavour, but he evidently understands the work he has undertaken, and is still earnestly engaged in.

Through the kindness of Messrs. Hooper & Co., of Covent Garden, I had an opportunity of inspecting Mr. Laxton's most recent productions in their trial-ground at Herne. Like all Mr. Laxton's seedlings, they are the result of cross-breeding. Three varieties have been selected for distribution, and the entire stock of them has passed into the hands of Messrs. Hooper. Telephone was used as one of the parents in all the crosses, and its individuality was apparent in all of them. A row or two of Telephone was grown for comparison, and the new ones were certainly superior to the parent. Lord Bacon, wrinkled marrow, is a blue Pea, and a cross between Telephone and John Bull. The pods are long and well filled with very large Peas; it grows as tall as Telephone, and bore a large crop. They were sown on March 25, and were ready to gather the last week in June. British Lion is a cross between Omega and Telephone, and has great promise of being an excellent main crop wrinkled marrow. It forms a dwarfer and better plant than Lord Bacon. The pods are long, and some of them contain ten large Peas. The habit of the plant is like that of Telephone, but the pods are formed like those of Omega. Alfred the Great is a cross between Telephone and William Hurst. It is a white wrinkled Pea, and is ready to gather a week before Lord Bacon. This is a very prolific variety, and produces its pods much nearer the ground than Telephone does. It is not such a tall grower as Telephone, but is more like that variety than it is William Hurst. I counted nine Peas in most of the largest pods, which were well filled.

All the above Peas were bearing larger crops than Telephone, and when they were cooked the flavour proved to be excellent. Amongst the *connoisseurs* present opinions were divided as to which was the best flavoured of the three. Alfred the Great seemed to be most in favour. I thought there was not much difference between them; they are all good marrow Peas. Evolution was also grown with them, and is very promising; it is rather later than Lord Bacon. William Hurst was not more than a foot high, but the dwarf plants were well furnished with pods. This would be an excellent kind for pot culture, and it is a good flavoured wrinkled Pea. Omega has not gained so much popularity as its merits deserve. It is one of the latest varieties; the Peas are of a dark green colour, the plant dwarf, and of a free bearing character. It is now finding its way into some of the market gardens. It is a variety likely to take in the market, both for colour and quality; if it continues to find favour as a late market Pea, that will be a good test of its merits.

The market growers find that the late Peas are paying them better than the early ones—the market becomes so crowded with early Peas in June that there is some difficulty in the crush to obtain a paying price for them. The later Peas do not bear such good crops, but they sell readily at higher prices. A Pea that would resist the attacks of mildew well would be a great boon; at present the early Peas resist its attacks better than the late ones. *J. Douglas.*

THE LILY NURSERY, DERSINGHAM.

Among several of the newer developments of gardening interests in our own country the successful attempt made by Mr. T. Jannock to grow the Lily of the Valley well, and in a wholesale way, must certainly be included. A few years ago the cultivation of this plant was neither well understood practically or scientifically, the plant suffered accordingly, and it was extremely rare to find it doing well—that is, bearing quantities of large blooms in beds in the open air. As a plant to grow in boxes or pots for the conservatory or the dwelling this was still more the case, the clumps, or crowns, used at that date for these latter purposes being usually supplied from foreign sources. It was, of course, to the decided advantage of Continental cultivators of the plant to keep up the idea that only the soil of Holland, some parts of France, and Northern Germany, could grow it to that degree of maturity to make it a suitable and worthy subject for forcing, but it is now seen that our own land can produce roots equalling in every point the best imported ones. The main *desiderata* in growing the crowns for market, or for forcing cut bloom, are a light easily worked soil, a sunny, tolerably open, but sheltered site, heavy dressings of decayed cow-manure and patience—the last being required in waiting three years from the time the youngest germ or bud is planted till it is fit for taking up to force or to flower in beds in the open air. When one-year or two-year-old crowns are used in planting the nurse-beds there is a proportionately shorter period to wait for returns. Mr. Jannock has proved the differences that exist between our common wild form, or that in a cultivated state, and the Berlin variety that he employs, in the broader leaf, bolder spike, larger and more numerous bells of that variety. Botanically there may be no differences structurally, but to the gardener the above enumerated excellencies appeal in an all-powerful manner. Figures of the two varieties will be found in our number for March 25, 1876, p. 405.

With the abundant produce now possessed at Dersingham, the progeny of the first importations from Germany, there is now no necessity to go abroad for young stock for growing on to furnish crowns for planting or forcing, as each two or three year plant produces one or more yearly buds of one leaf each that are used wherewith to plant the beds for stock. Usually all the plants are removed and planted annually, the beds getting a deep digging over—not trenching—and a liberal dressing of the manure previously mentioned. This transplanting operation may be done in mild weather from October to March. Lift them carefully with a fork, in the case of plants already in the ground, and after shaking all the soil off them sort them into three sizes, the smallest being the one-year-old, the next the two-year-old, and the largest the three-year-old crowns.

These last, which will be of a reddish-brown colour, and of which there will be but few in any very old bed, are suitable for potting, or for planting a bed to flower the succeeding season. It is well to keep the crowns of different ages apart in replanting. When the sorting is done the roots must be shortened to about 4 inches from the germ, or bud, and be planted in trenches deep enough to receive them, much in the manner of laying Box edging. These trenches may be from 6 inches to 9 inches apart. All crowns should stand above the ground at least an inch, this mode of inserting the plants being essential to success, as it is found that crowns which are buried out of sight make the least progress, and have also

inferior blooms, the soil above them hindering the ripening action of the sun's heat and light. Mr. Jannock believes that this is really the keynote of success with these plants. When the trenches are filled with the plants, kept steady in their places by having a little soil pressed against them, they may be quite filled up with decayed cow-manure and mould, making all firm. After this the whole of the beds are mulched with the same material to the depth of an inch, which the first heavy rain or good watering will press down to the soil, still leaving the points of the crowns ranging above the level of the mulch. Nothing more seems to be required during the summer-time beyond keeping the plants free from weeds, and supplementing insufficient rains with heavy watering by means of the hose or can. In August, when the crowns are attaining size, and the plants demand extra nutriment, watering with diluted cow-dung water is practised with much advantage at intervals of a week.

The Lily of the Valley under this form of cultivation will produce in three-year-old roots fine plump reddish-brown buds without failure, and which are sure to throw up, either as forced plants or otherwise, capital spikes of flower and healthy robust foliage. Where the culture of this plant is pursued on a large scale, and many leaves are required to set off bunches of cut bloom, one and two-year-old plants should be grown for the production of these only, more especially as the earliest forced flowering plants are not over-well furnished with them.

The above seem to be the chief points of this, the first endeavour, to grow the Berlin Lily in the open air in this country to supply the constantly increasing demand of the cut flower trade in the first instance, and that of crowns for forcing purposes in market establishments and private places. So much are these English grown crowns and blooms in request that the proprietor of the Dersingham Nursery contemplates the increase of his land by several acres, notwithstanding the fact that he possesses over one million crowns, half of which are those that will flower during the next season. *M.*

EDIBLE CACTI.

The Prickly Pear, or Indian Fig as it is sometimes termed, the fruit of Opuntia vulgaris, is known in our fruit shops; but there are many other species of the Cactus family which are edible, although only locally known where they are indigenous — among these are Opuntia Ficus indica, Opuntia Tuna, O. Rafinesquii, and O. occidentalis. New Mexico, Arizona, California, and Utah, are the habitats of most of these. Cereus giganteus and C. Thurberi also furnish edible fruits; the former attains a height of 25 to 50 feet, whilst C. Engelmanni is a dwarf species, with large scarlet flowers, and refreshingly cool fruits of a Strrawberry taste. C. Quixo of Chili is a stately Cactus, which attains a height of 15 feet. The charming snow-white flowers are followed by sweetish mucilaginous fruits available for the table. The fruits of the Opuntias are much eaten by the Indians under the common Spanish name of *turias*, and great quantities are dried for use in the winter The fruits of the Opuntias are of a bright red to purple colour, of a rather pleasant, sweet, somewhat acid taste, and have thin stems and rather large seeds, which are discarded. They are much eaten by the Indians. The skin is studded with bunches of very fine downy spines, which they brush off with a bunch of grass. The Apache Indians use wooden tongs to gather the fruit, and prevent scratching by the spines or thorns of the plant. Some tribes dry the unripe fruit of the Opuntia for future use, to be cooked with meat and other substances. The fresh unripe fruit is often boiled in water from ten to twelve hours until soft, when it becomes like Apple-sauce; then, being allowed to ferment a little, it becomes stimulating and nutritious. Some Indians roast the leaves of the Opuntia in hot ashes, and when cooked the outer skin with the thorns is easily removed, leaving a slimy, sweet succulent substance, which is eaten.

In the province of Catania in Sicily, in Algeria and Egypt, the Opuntia Ficus indica is regularly cultivated for its fruit. The product in Egypt is about 10,000 cwt. annually. In Sicily four varieties are known—one with yellow fruit, one with white fruit, one with red fruit, and one without seeds. The two first-named varieties are chiefly cultivated, as they are most productive, and the fruit is sweeter and larger. These fruits can be kept during the winter up to March or April if covered with hay or paper. A hectare of ground planted with these Cacti yields a return of about £20, and the cost does not exceed £2. The fruit of Cereus giganteus is Pear-shaped, of a greenish-yellow colour, with a few small spines scattered over the surface, which fall off as the fruit becomes thoroughly ripe. The fruit is borne upon the highest part of the plant, and is usually gathered by means of long hooked sticks; the interior is of a beautiful red colour, and looks tempting. The rind is pulpy, fibrous, juicy, and sweet; the pulp is very palatable (and is full of small black seeds, which are also eaten), reminding one of Figs, the only difference being that it has more moisture. The seeds are indigestible unless when chewed. The Indians consider this one of their greatest luxuries, and as long as the fruit is obtainable care for nothing else.

To dry this fruit as a preserve the seedy pulp is placed between soft Indian Corn husks, the ends of which are tied, and it is then dried in the sun for winter use or trade. It is also put into earthen pots when fresh, secured from the air, and sold in the settlements. It retains its sweetness for a long time. A clear light brown syrup is expressed from the pulp and sold in gallon jugs. The Papajo Indians are the largest producers of this syrup. The Pimo Indians annually prepare a wine from this fruit, called by the Mexicans *tis wein*, by taking the fresh pulp or the syrup and mixing it with a certain quantity of water in earthen vessels and exposing it to the sun for some time to ferment, after which it is fit for drinking. It is of a clear amber colour, and in every respect superior to much of the wine on sale. It is highly intoxicating, with the taste and smell of sour beer, but some time elapses before its stimulating effects are felt. When the wine is ready for use, the Indians celebrate an annual drinking festival.

Cereus Thurberi is commonly called *petahaya* by the Mexicans. It grows to 18 or 20 feet high, and 4 to 6 inches in diameter, and bears two crops of fruit per year. The fruit is the size and shape of an egg, and is thickly covered with long black spines; as it ripens it becomes tinged with red, and the spines fall off, the fruit splits open and exposes a rich red juicy pulp with small black seeds. The fruit is decidedly better than that of Cereus giganteus, but is used in every respect for the same domestic purposes. The Papajo Indians, in transporting earthen vessels filled with syrup or fruit to market, cover their jars with a thick coating of mud, which renders them less liable to waste in handling and at the same time keeps the contents cool, and prevents evaporation, the crockery used being very porous.

The fruit is eaten in enormous quantities, and, being very nutritious, the consumers quickly acquire an extraordinary increase in bulk. In making wine or syrup the seeds are easily separated from the pulp by the use of water. They are carefully collected, dried, parched, and pulverised, after which process they are digestible and nutritious.

The last species to be noticed is Echinocactus Wislizeni. This singular species of Cactus is commonly called by the Spaniards *biznacha*, and, being 20 inches or more in diameter, a section of the stem is often employed as a cooking vessel. The seeds are small and black, but when parched and pulverised make good gruel and even bread. The pulp of the fruit is rather sour, and not much eaten. Travellers in passing the Cactus wastes often resort to this plant to quench their thirst, its interior containing a soft, white, watery substance, of slightly acid taste, which is rather pleasant when chewed. It is a common sight to see on each side of the road these plants with a large perforation made by the thirsty traveller. An Indian when travelling and wishing to make a meal selects a large plant 3 feet or more long and 2 in diameter, cuts it down and hollows it out so as to form a trough. Into this he throws the soft portions of the pulpy substance which surrounds the central woody axis, and adds meat, roots, seeds, meal, fruits, or any edible thing on hand; water is added, and the whole mixed together. Stones are then highly heated and dropped into the mixture, and as they cool are taken out, licked clean, reheated, and returned to the cooking vessel until the mixture is thoroughly boiled. This is a favourite dish with the Indians of Arizona. The Papajo Indians pare off the rind and thorns of large plants of this species of Cactus, letting it remain several days to bleed, when the pulp is poured down to the woody axis, cut up into suitable pieces, and boiled in syrup of the Cereus giganteus or Cereus Thurberi. If a kind of sugar which is made by the Mexicans is attainable it is employed instead of the syrup, thus forming a good preserve. These pieces when taken out of the liquid and dried are as good as candied Citron peel, which they very much resemble in taste and substance. *F. L. S.*

Natural History.

Do Mosquitos Live on Animal or Vegetable Juices?—The mosquito is pretty widely known. Its larva, its chrysalis, and its perfect forms have been described. I do not remember, however, reading any description of its eggs. I remember the days when, as a boy, I used to scoop up the larvæ of mosquitos from stagnant waters, and place them in little pools of water, to observe their transformations. Then I thought there were two kinds; these afterwards I recognised as the larva and chrysalis stages of the same mosquito. Often have I observed the chrysalis coming to the surface of the water, and after a while bursting its shell and letting out the perfect winged insect. Often have I been pestered with their stings, and, what is worse than their sting, the penetrating buzz of the mosquito—well expressed by its Italian name, "zanzàra." Many times have I watched a mosquito settling on my hand, driving its proboscis into my skin, and sucking my blood, and filling and reddening its body with it. Often also, on the shores of the Mediterranean, have I seen mosquitos in the evening dancing in small clouds over people's heads as they moved along the shore. Never did I look upon this insect as other than a blood-sucker.

When I came to India I found my friend again as troublesome as in the South of Europe. There was no rest at night, except within a mosquito net, or under a "punkah" swinging close to my face. One thing I noticed—the Indian mosquito, as far as I know, is a nocturnal insect, but in Europe I was often bothered by it also by day, though much more so by night.

One day, in the evening, in India, on a wall round a lamp, I noticed more than six forms of mosquitos—probably either varieties or sexual forms. Some were large, others small; some had striped legs, others not; some had long feathery antennæ, others small ones. I have no doubt that, like other animals, there are many species of mosquitos. On my visiting Calcutta I was astonished to find how much larger the mosquitos were there than in Upper India.

On one occasion, in Lucknow, during the season, when the air swarms with insect life, and quivers with the notes of different insects, I captured an interesting little mantis, not very much bigger than a large mosquito. It had long legs and antennæ. I put it under a tumbler, and fed it for some time on mosquitos. It was quite a novel sight to see the cautious way in which this tiny mantis, balanced on four legs, approached the mosquito, and tentatively searched for it with its antennæ till it made sure of its position, and then pounced upon it.

As I have said, the different forms of mosquitos and their transformations are probably well known, but perhaps not so much is known of the habits of this interesting insect. In India, during the heat of the day, it is found inside houses, under chairs, tables, and other furniture. Probably the reason for its selecting these positions is in order to escape from the radiation of the roof by placing a screen between it and that. I have some notion that this insect has an exquisite sense of any change of temperature and of the hygrometric state of the atmosphere. Towards sundown the mosquitos in the house swarm, and make a distinct hum in a room. They become impatient to go outside, and can be seen making frantic efforts to get out against the panes of glass of a closed window. If the doors are then opened every one of the mosquitos will go out; and if you are clever enough to shut the doors behind them you can ensure a mosquitoless night and a comfortable sleep. Often have I done this, and often have I observed them again in the early morning making the same frantic efforts on the outside of the panes endeavouring to come in again and rest for the day in the same screened places of the house. On one occasion I visited a friend in the winter who was encamped in a Mango grove. He told me that he, his wife, and his children, had been worried and kept awake all night,

the tents being full of mosquitos; indeed, the faces and hands of all bore testimony to what he stated. I said, "I know something of the habits of these insects, and would endeavour to free their tents and mine also of this pest." At sundown I went into my tent, and heard the familiar hum of hundreds of mosquitos who wanted to go out. I rolled up all the blinds and curtains of all the tents, and in a quarter-of-an-hour or so not one was to be heard inside. The curtains were then let down, and we all had a peaceful night.

I had often heard people say that they would rather not have plants and creepers about their verandahs, because they had a notion these bred mosquitos. On one occasion I put a plant in a pot on a table in my room. At night I happened to pass by it with a lamp, and found its leaves covered with mosquitos, who appeared to me to be sucking the juice of the plant. Here I think I had discovered a clue to the real nature of the mosquito. I think that naturally the perfect insect lives by sucking the juices of plants at night; that in India, owing to the heat of the day and the dryness of the atmosphere, mosquitos seek the shelter of the interior of houses; that in the evening they would only be too glad to leave the house, if you would let them; if you don't they will have their revenge on you at night. Even if the doors are left open all night you will be free from them, except in the early morning, when they come in and have a nip at you before roosting for the day.

I have a suspicion that mosquitos, like other animals, change their habits according to circumstances. When at Venice on one occasion in September I was one evening at sundown looking out of the window on to the canal; I saw a number of mosquitos coming into the room through the window. I shut it, and kept them out. There the habits of this insect appeared to be reversed. During the day in September the atmosphere over the canals is warm and moist, but in the evening a chill occurs. It would therefore seem that in Venice at that season the mosquitos left the rooms in the morning for the open air—what to feed on I don't know—and returned to the warmth of the houses at night. Italians will tell you that if you leave the windows open, and have a light inside, the mosquitos will come in. I doubt whether they require the guide of a light to enable them to find the windows; but probably, like many other insects, a light would attract them.

With the foregoing clues I think now the statements of travellers and sportsmen in the jungles of Burmah, and of trappers in the backwoods of America and Canada, and other places, become intelligible. They tell you that in those solitudes mosquitos swarm. They say that sleep is impossible there without smearing your face and hands with greasy stuffs to caution them off. I could never understand what business the mosquito had in those jungles, under the supposition that it lived upon animal blood. Men did not live there, and animals were sufficiently protected by their fur. But as a vegetable feeder the mosquito no doubt plays some important part in the economy of jungles. What that part is will be an interesting problem for somebody to solve. *E. Bonavia, M.D., Etawah.*

Orchid Notes and Gleanings.

CYPRIPEDIUM SEDENI ×.—We have previously had occasion to mention the tendency that the flowers of this hybrid have to assume an abnormal appearance. In December, 1882, Mr. Kesterton sent us a monandrous flower similar to that described by Mr. Spencer Moore in the *Journal of Botany*. In that flower the sepals, petals, and lip were in their ordinary condition, but there was only a single stamen instead of the two usually met with. In the flower now before us, also sent by Mr. Kesterton, the sepals are all distinct instead of two being united as usual: the two lateral petals present nothing very uncommon, but are placed rather diagonally; the lip, in place of being bag-shaped, is nearly flat, with only a slight tendency to be hooded at the free end; and the column bears two lateral stamens, as a well ordered Cypripedium should do. Singularly enough, the barren stamen opposite the lip, which is so remarkable a feature in ordinary Cypripedia, and which in the flower first alluded to was represented by a perfect stamen, was in the present instance entirely absent. The normal Cypripedium has six potential stamens, in two rows, of which two of the inner row are usually developed, with a large barren stamen of the outer row above them. In the first flower five of the six—namely, two of the outer and all of the inner, were wanting; and in the second four of the six were absent, viz., all the three outer and one of the inner.

THE CULTURE OF CATTLEYAS.—In the *Illustration Horticole*, t. 526, a figure is given of Lælia elegans var. alba, a charming variety, with the sepals and petals white, the proximal lobes of the lip erect incurved, white, the distal or free lobe rounded, flat, rosy-lilac or magenta. In reference to this plate M. Linden gives the following cultural note:—"Cattleyas," says M. Linden, "require plenty of water, except during the resting period, when they only require sufficient to keep the bulb from shrivelling. During the growing period they like a high temperature, such as the East India-house affords, especially in the case of those which flower twice in the year, as C. Mossiæ, Loddigesii, intermedia, nobilior, &c. But at the end of autumn, when the bulbs are well ripened, the temperature may be lessened. Species which flower only once, as C. elegans, Mendeli, Dowiana, bogotensis, Trianæ, &c., also do well in a high temperature at the period of flowering, but will do very well in a warm greenhouse. Small species, like C. Dayana, nobilior, Acklandæ, &c., do best in wooden baskets filled with lumps of charcoal, or on a block with sphagnum, or even on a block without sphagnum, provided the atmosphere be sufficiently moist.

CATTLEYA REINECKIANA VAR. — In May last (vol. xxi., p. 609) we had occasion to speak of this lovely variety as grown by Mr. Hill at Sir N. de Rothschild's, at Tring Park, and can now place before our readers an illustration taken from a photograph (fig. 33). The flowers are like those of C. Mossiæ, but pure white except the throat of the lip, which is marked with magenta-coloured lines and an orange blotch.

NOTES ON NEW ZEALAND.

I WELL know the deep and kindly interest taken in this far-off "Britain of the South" by a large section of the British public, and especially by the now numerous class of gardeners, who, not content with the knowledge of plants to be obtained from them under cultivation or in the herbarium, look for information upon plant life from those who are privileged to work, live, and study amongst the glories and beauties of the vegetable kingdom in their natural homes. Many are the failures and bitter disappointments encountered in the cultivation of flowers and plants, which arise from the want of a knowledge of the conditions and surroundings of plants in their natural habitat. Many instances in support of this assertion could be cited, especially in the matter of potting compost and temperature. When in England I have often seen beautiful plants distorted into almost unrecognisable specimens, drawn, gaunt, and sickly, by being subjected to a treatment greatly different to the natural conditions of their existence. Plants at home are often grown in a rich and loose compost of peat, leaf-mould, and sand, which in their own land select strong friable clay in preference to the rich bed of vegetable humus which for generations has been accumulating at the foot of the clay bank upon which they grow to perfection. Many plants I have seen cast on to the rubbish-heap or thrown on one side as worthless because they refused to flower and flourish under conditions totally different from what unerring Nature adapted their particular forms and constitutions to revel in. These facts, as well as the knowledge that all colonial notes are interesting to the majority of the readers of this publication, have induced me to forward a series of papers upon plants and plant life with which I am constantly being in contact during my wanderings as a plant collector in various parts of the world; and for the purpose of making these notes readable and of interest to any who are desirous of leaving overcrowded England to settle in these bright spots of the earth, where there is ample room for all, I will combine incidents of travel and anything which will tend to convey a correct idea of this country with the information upon the habitat of plants.

New Zealand consists of three islands, or, properly speaking, two large islands and several islets. Combined, they form a larger country than England and Scotland together; contain over 64,000,000 acres; 20,000,000 of these are under forest, and, considering the mountainous nature of the country, a very small proportion of the whole area could be classed as worthless. It is situated between the parallels of 34° 15′ and 47° 30′ S. lat.; this position gives to the country conditions of climate ranging from that of warm to cold temperate regions; whilst the mountains with their perpetual snow, glaciers, and avalanches, especially in the Middle Island, stamp the flora as purely alpine. It will thus be seen that no plant indigenous to New Zealand should be looked upon as a stove-plant, and many and all from the elevated parts of the south should be either half-hardy or hardy in England. I am well aware that many have been tried and failed; but knowing that a great number of plants are found the whole length and breadth of this country, embracing a distance north and south of over 1000 miles, which must give to the same species of plant different constitutions, and hence degrees of hardiness, I am fully persuaded that numbers of plants which have hitherto failed would succeed in England if obtained from the coldest locality of their distribution. No one will convince me that the Tree Ferns, shrubs and trees worth a place in every garden, which I have seen decorated with icicles, borne to the ground with snow, and subject to long, damp, cold and frosty weather, will not stand the winter in England. From personal experience in this and other countries I know that the well-doing of a plant under cultivation depends a great deal upon the similarity of its natural and artificial home; or, in other words, the nearer we approach the natural temperature of the plant the greater our success in growing it. For instance, I have planted two lots of the same species of tree, viz., Cupressus macrocarpa, received from different parts of this island, one part low-lying and warm, the other elevated and much colder. Now, the locality in which I planted the trees being cold and high, the trees obtained from the south or cold part did the best, whilst those reared under warmer conditions had great difficulty in adapting themselves to the altered circumstances. If this is so apparent in plants of only two years of age, what must be the difference in the constitution of plants which have grown, reproduced, and perhaps originated in totally different conditions as regards temperature for upwards of a thousand years? My opinion is, that the bulk of the New Zealand plants which have been sent to England for outdoor cultivation, were obtained from the warmest places, because the ports of departure from which most plants have hitherto been sent are warmly situated, and containing most of the known plants in their vicinity; none from the cold and hardy districts have as yet been forwarded for the above purpose.

New Zealand is undoubtedly a grand country, and destined to become a great nation, chiefly because it is in every respect suitable for the permanent home of the Briton. Its climate is conducive to health, long life, and tends to develope or perfect the human constitution, instead of causing degeneration or relaxing of energy, as is often the case in many parts of the empire. The soil, taken as a whole, is exceedingly fertile, and the conditions necessary for agricultural and horticultural pursuits will stand comparison with any part of the world. Spacious harbours, railways, abundance of coal, mineral wealth, and, in fact, every facility for the advancement of a people, can now be seen in every part of the colony. That such a highly favoured country will, ultimately, take its stand as a power in the world, none can doubt. To be deeply impressed with the marvellous colonising character and power of the British race, we have only to visit the four great centres of population, Auckland, Wellington, Christchurch, and Dunedin, to travel through the settled districts, and remember whilst we move by steam-tram and rail, passing hundreds of comfortable homesteads, large estates, noble buildings, colleges and museums, that a half a century ago there things were in dreamland; and this country which now sends millions of tons weight of food and clothing to over-crowded England was of no use to the world, and all its life-giving treasures were unknown. New Zealand is to be congratulated upon having laid the foundations of every department necessary for the advancement of a great people and for the establishment of a great nation; with one exception, and unfortunately, this exception is one which renders all other efforts eventually useless, I mean that

part of a nation's duty which deals with the conservation and planting of forests.

The apathy and negligence displayed by the authorities of New Zealand in all matters connected with botanical gardens and forestry, is looked at by botanists and horticulturists with dismay and deep concern, not only from the love of trees and flowers, as many would think; but from a knowledge of the disastrous effects and the making and unmaking of a country contained in the practice of forestry. Now when we consider the superior quality of the timber trees indigenous to this colony, and the remarkable way in which Californian Conifers. European deciduous trees, and many Asiatic trees, thrive; and the numerous demands from Nature to plant, in the way of destructive winds, and uncertain seasons—it seems incredible that a body of highly civilised men, in a land blest with every condition favourable for the growth of timber, should slowly, but surely, be causing and allowing that country to drift into a second Cyprus. This to some may appear to be an exaggeration, or a mental flight of a "hobby rider," but if double the quantity of land were under natural forest, which at present amounts to about 20,000,000 acres, it would be of no avail in preventing the annihilation of New Zealand's best timber trees in the face of the reckless and indiscriminate cutting, clearing, and burning of the "bush" now practised throughout the length and breadth of these islands. The present annual amount of timber cut out of the forests in this country exceeds 400,000,000 superficial feet. In taking out this immense quantity great damage must, as a consequence of the unsystematic manner of forestry, result to the remaining arborescent vegetation. Besides this drain upon the forests there is the continual burning, and also the destruction caused by cattle, sheep, &c., to young trees.

Allowing for the increase of demand, which must take place when the superior quality of our best timbers is more widely known, and on the increase of population, the above amount must be doubled and multiplied again, so that if nothing is done in a few years hence many noble trees and valuable woods will become extinct or only represented by stunted struggling vegetation under greatly altered circumstances.

A glance at the flora of New Zealand will convince us of the moist character of the climate which prevailed when the members of it came into existence. The amphibious Phormium tenax, the perpetual moisture loving Todeas and Hymenophyllums, &c., the damp seeking Tree Ferns, flat-leaved Conifers, and the rank and rich growth of fungi, lichens, and mosses, all indicate an exceedingly moist condition under which the present "dying out" flora originated. In all the parts of New Zealand's forests through which I have travelled there is the warning and unmistakable stamp of the dying out tendency visible on all sides. The monarchs of these primæval forests are either stretched at full length upon the ground in an advanced stage of decomposition or are still standing erect, devoid of leaves or any sign of life; in fact, a scene of bushland in this country is readily imagined by picturing a great number of tall lifeless trees, giving an aspect of antiquity to the whole scene by their weird, grotesque, lichen covered branches towering above the existing vegetation.

Knowing that the absence of vegetation means little rainfall, it is not surprising that the arboreal plants of these islands should now begin to show the effects of the long raid that was made upon the forests by fire, axe, and cattle from the earliest records we possess of the Maoris up to the present reign of Mammon, to whom these grand and primæval forests are fast succumbing.

Later on in these papers I shall have occasion to refer to this matter again, but for the present I wish through your journal to draw attention to the great want of a Forest Department in this country, and to the wilful negligence displayed by those whose duty it is to establish, foster and encourage tree-planting and the protection of all indigenous trees. Unfortunately this folly and short-sightedness does not end with forestry, but extends its withering influence to the public gardens. Where such is the case, private gardens and every branch of horticulture remain in a backward state, and New Zealand is not an exception to this rule. I have been in many countries, and always made it a practice to visit the public gardens; but considering the favourable conditions for plant life out here, I place New Zealand as last on the list in botanical matters. That this should be the case in a country teeming with wonders of the vegetable kingdom, and full of pretty and majestic scenery, and with everything in the gardeners' favour compared to other lands, is deeply to be lamented. *C. Mudd.*

(*To be continued.*)

FLOWERS IN SEASON.

From Mr. Burbidge, Trinity College Gardens, Dublin, come—

Nicotiana glauca, a half shrubby perennial, with glaucous, long-stalked, ovate acute leaves, in some of which there is a tendency to obliquity at the base, an unusual feature in Solanaceæ, and the meaning whereof is not apparent. The flowers are borne in a long, loose, terminal, thinly-branched, leafless inflorescence, each flower about 1½ inch long, with a short tubular calyx, and a long slender yellowish tubular corolla, contracted at the throat, and divided at the limb into five short ovate lobes.

Billardiera longiflora is a charming trailing shrub, with slender wiry branches, and linear subsessile, entire, deep green, glabrous leaves. The flowers, produced in spring, are pendulous and campanulate, followed by oblong, obtuse, cuboidal fruits of a deep blue colour, which are very ornamental.

From Mr. Smith, Newry, come Philadelphus Yokohama?, a very handsome species, with pendulous shoots some 5 feet in length, covered with wreaths of flowers, and said to be the most graceful and profuse bloomer of the genus.

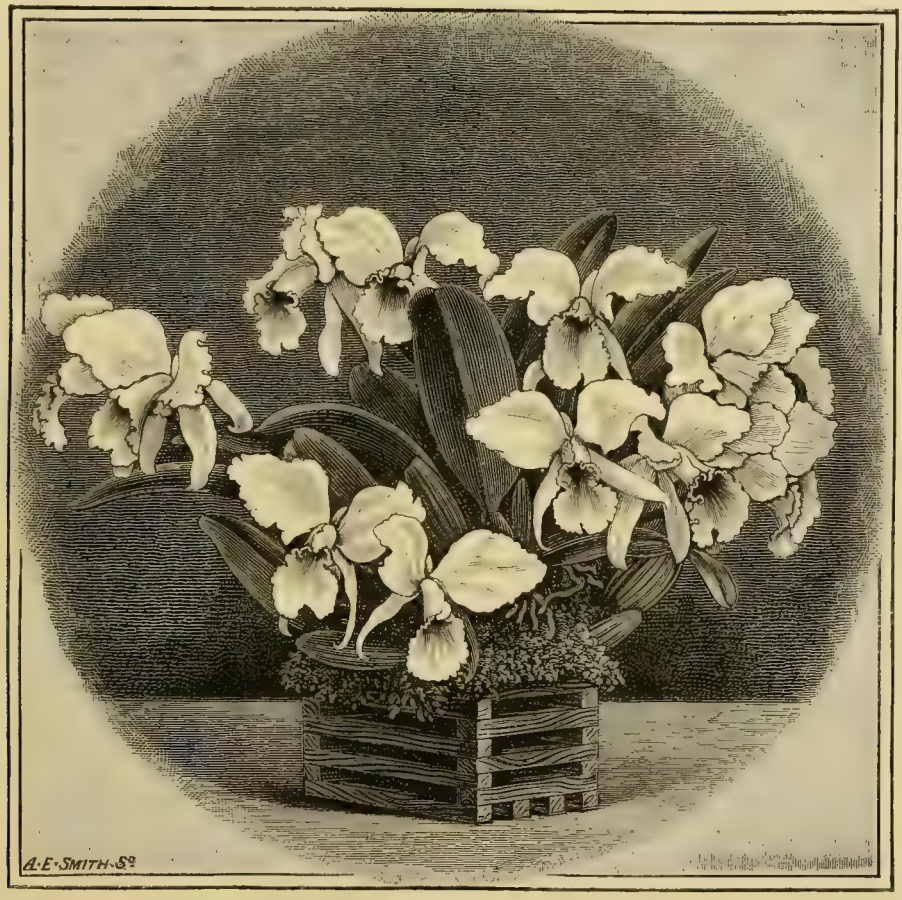


Fig. 33.—Cattleya reineckiana: flowers white, lip purple and gold. (see p. 172.)

Spiræa palmata.—Nothing need be said in praise of this, but for richness of colour no specimens that we have seen equal those sent by Mr. Smith, of Newry.

Heuchera Richardsoni is valuable for its palmate Vine-like foliage, each leaf being 3—4 inches across, dark green, with a reddish bronzy disc, which makes them valuable for cutting, their good qualities being enhanced by the length of time they remain unchanged in water.

Nothoscordum siculum.—A singular Onion-like plant, with tall shafts bearing at the top umbels of conical flowers, each about ½—¾ inch long, and of a peculiar pinkish-brown colour. Let no one attempt to dissect this under the simple microscope unless he be provided with a handkerchief, and unless he be proof against noxious smells; and yet Mr. Bentham says of the genus "odor alliaceus omnino deest." Perhaps this is not a Nothoscordum after all—but really we are not disposed to pursue the enquiry further!

Eurybia lyrata.—A desirable hardy Composite shrub, with lanceolate shallow-toothed leaves, green above, hoary on the under surface. The flowers are Aster-like, arranged in star-like white heads, each about half an inch across, along the ends of the branches. When the fancy sets in for ornamental shrubs this will be inquired for.

Sollya parviflora.—Amongst the very large number of handsome garden plants introduced from Australia the subject of this note is not by any means one of the least desirable. It is, however, but seldom seen. The slender thread-like climbing stems, with narrow leaves, and the beautiful deep bright blue flowers form a most attractive combination. The species is not difficult to grow, and requires but little space in which to develope. A good plant nicely in flower is now to be seen in the Temperate-house at Kew.

GRAPES AND TOMATOS.

In addition to the Bexley Heath and Dartford Heath nurseries, with the immense extent of glass they contain, Mr. Ladds has now started one at Swanley, which promises to soon vie with the Bexley establishment in the amount of glass which it will contain. Last autumn Mr. Ladds bought 19 acres of land adjoining the railway here, close to the Swanley station. It is high and dry, on a nearly level plateau, on one of the swells of high ground with which this part of Kent abounds; not a tree or any other object is there for a long distance to interfere in the least with sun or air. In September building was begun, and how the work was proceeded with may be judged by the fact that by spring fifteen span-roofed houses, each 200 feet long by 17 wide, and one 686 feet long by 25 feet wide, were finished and planted with Vines and Tomatos. The fifteen stand ends north and south, side by side, the eaves adjoining in two blocks, which are only separated by a space some 4 or 5 feet wide. Each of the two blocks, composed of seven and of eight houses respectively, consists of an outer wall of 9-inch brickwork, ends and sides alike, something over 3 feet high. On this rests a plate of wood 9 inches by 3, and which is clipped by stays made of strong flat iron, the bottom ends of which are T-shaped and embedded in large masses of concrete below the surface, inside the walls, and at about 7 feet distance from them. These ties are about 15 feet apart, and are calculated to bear an immense strain, such as a strong wind acting on the large extent of roof cannot fail to cause. At the eaves of each of the adjoining spans there are the usual strong timber uprights on brick footings, which support the eaves of the roof, and which are about 10 inches apart, so as to admit of the hinged flap which acts in the double capacity of a continuous shutter for the admission of air, and as a footway for getting along to do the requisite repairs. A purline composed of 1-inch gas piping runs the length of the roof on each side, midway between eave and ridge, and fixed to each of the roof bars by a strong iron staple. These purlines are attached to uprights, standing 15 feet apart, of the same kind of iron piping, with T-shaped ends embedded in concrete blocks similar to the side stays.

In this way the long 200 feet stretch of roof in each house is not only supported, but, what is of equal importance, is held down; the need of which during a gale of wind is not always sufficiently provided for. The glass is 21 oz., 17 inches by 13, bedded in putty, but none is used above. Each block of these houses is alike in construction. The top ventilation is provided for by means of lights hinged to the ridge, each worked by a pulley, with a balance-weight made of 2 feet of iron pipe, 2½ inches diameter, filled with cement. The two blocks of houses are braced together with iron stays across the 4 or 5 feet space already mentioned as separating them; these clip the wall-plates of each.

The big house is similar in construction to those already named, both as regards the walls and the way in which it is stayed with irons clipping the wall-plates, and let into blocks of concrete; but to further strengthen the roof the purlines, besides being supported and held by the uprights let into the floor, are tied together by cross bars at intervals of 15 feet. The roof ventilation is similar to that of the other houses, and the walls are provided with air-shutters on each side.

The water supply in all these houses is economically and amply provided for, the inch pipes mentioned as being used for the purlines are made on one side of each house to convey water, with taps and screw connections every 10 yards, to which can be attached a hose pipe; the supply is obtained from the water company. Mr. Ladds finds that the labour of carrying costs more than what he has to pay the companies, 10*d.*—per 1000 gallons in one of his places, 7½*d.* in the other.

Five of the 200-feet houses were planted on both sides at the beginning of March with one-year-old Gros Colmar Vines; these have made good even growth, and reached the top some time since; the other ten houses were planted later with Black Hamburghs raised from eyes this year—the big house with Gros Colmar, also from eyes; these are moving nicely, but all the houses are filled with Tomatos in full bearing, planted in rows 2½ feet apart across the houses, just leaving a path down the centre of each: they are trained to strings stretched from the floor to the roof, and are bearing an amazing lot of fruit. As will be easily understood the dry condition of the soil necessary for the Tomatos in their fruiting stages is too dry for the Vines, especially the latest planted ones from eyes this year, and which had not the chance of getting away like the year-olds whilst the Tomatos were in their earlier stages. But the crop of Tomatos is of so much consequence that this year the Vines have to stand second in consideration; they will be cut well back at pruning time: next season the companion crop will be Cucumbers, which, in their turn, will have to conform to the requirements of the Vines, which will be prepared for bearing half their length the summer following.

Where Vines are grown to such an extent as here described, it is obvious that border making, as ordinarily done, is out of the question; it thus becomes necessary that not only should the soil be naturally suited to the growth of the Vine, but that it should also be of a sufficient depth with—in addition if possible—a subsoil that will afford natural drainage. The nature of the soil in this part of Kent is such that it could scarcely be surpassed, both in quality and quantity, with here a bed of sandy gravel underneath. Some fourteen years ago, I understand, this land was covered with wood, which was then cleared, and has been arable ever since. Grape growers are divided in opinion about the advisability of adding dung to a new Vine border—some recommending its use, but a greater number being opposed to it. Mr. Ladds is not by any means amongst the latter, as may be understood by the quantity he uses: 160 tons of manure, part from the London stables and part such as is collected from the streets, was used for each of these 200-feet houses, which collectively amounts to 1500 tons to the acre and one-fifth, which is about the area enclosed—a prodigious quantity, and which, it is needless to say, has raised the ground considerably; a like proportion was applied to the inside of the big house. The land was deeply trenched, and the manure mixed evenly through it. By those who who do not approve of rich borders the soundness of Mr. Ladds' proceedings would scarcely be credited; yet he is not experimenting, having abundant evidence in the Vines he has now in bearing under similar conditions of soil at Bexley.

For the last two seasons Mr. Ladds has forced 20,000 Strawberries in pots; 100,000 are now being prepared—the houses to grow them in will be built this autumn. The Strawberries have up to this time been forced at Dartford Heath, occupying a number of 12 feet wide houses, each some 130 feet long. Immediately the crop was gathered the plants were turned out of the pots and dug into the borders, on which they had stood, the partially exhausted bone-meal mixed with the soil in which they were grown now helping a grand lot of Tomatos, which were ready to take the place of the Strawberries. Sixteen houses in one block are thus occupied with this crop, and ten others, similar in size, opposite to them, have for some time been in full bearing. I was shown the returns of the weight sold from this and the Swanley place in six days, from July 7 to July 12, which were—first size, 12,560 lb.; second size, 966 lb., or over 6 tons. How many tons per week will be forthcoming when the sixteen other houses at this place (not in bearing when I saw them) come in, with sixteen more, each 250 feet long, at Bexley, it would be difficult to guess. Besides all these there are some 7 acres in the open ground, most of which are now carrying fruit, some having been gathered before the end of July.

After the Strawberries were got in at Dartford Heath last winter but one, there were two houses remaining more than there were plants to fill; 100 maiden Royal George Peaches were purchased and planted the first week in March, 1883, so as to occupy both sides of the houses closely, with a view to their being thinned out. By the autumn they had so far filled the space that it was seen they could not remain a second season; every other one was taken up, and two more houses planted with them. The progress they had made in a single season from being first planted may be judged from their having this year given a crop of 400 dozen, which, as will be seen, is four dozen to each tree—those that were moved showing little difference except that the fruit was from a fortnight to three weeks later; these latter I saw, and can testify to the beautiful crop of handsome fruit just coming in.

The big vinery at Bexley, filled with Gros Colmar and Lady Downe's, is again bearing an enormous crop, considerably heavier than ever the Vines have carried before. The bunches average from twenty-four to twenty-six on a rod. Judging by the weight borne in previous years in this house, Mr. Ladds estimates the present crop at nearly 2½ tons. The Muscat-house, 130 feet by 25, standing near this, now presents such a sight as requires to be seen to be fully understood—for the immense weight of the crop, alike remarkable for the evenness of the berries and bunches, which are as free from any that are stoneless as the Alicante or Gros Colmar. Nothing short of the extent to which the roots in these houses are fed up to a little before the crop colours, could enable the Vines to support the load they have on them. The borders are dressed with different kinds of manure during the season. Last winter sprats were cheap, and 2 tons were laid on the Muscat border, and pointed in 2 or 3 inches deep; since then I understand they have had two dressings, one with sulphate of ammonia, and one nitrate of soda, and at the time I was there 1½ cwt. of guano was being given to this border, an inch or two of the surface loosened with the fork, the work being being finished by a good soaking of water laid on with a hose-pipe. Practice and scientific research alike point unmistakably to the advantages of mixed food for most plants, varying it according to the nature of the kind of plant to be dealt with, and the character of the soil it is grown in. Vines are no exception to this, though they do not by any means always get a mixture of manures. Mr. Ladds is here clearly in the right track.

Two more houses near, each 160 feet by 25, filled with Gros Colmar, two years planted, are this season bearing their first crop; like the other houses they are planted on both sides; the rods were cut back to half their length, and have been allowed to carry about twelve bunches each, which, weighty as it is, the Vines seem quite able to finish, judging from their strength; the berries are now well on with their second swelling. Three other houses, each 300 feet long by 25 feet wide, all Black Alicante, also two years planted, and treated as have been the Gros Colmar in the last-named houses, with Tomatos grown with them the first year, are quite as good in every way as the Colmars, bearing half way up a similar number of bunches, and as even as possible from end to end of the long street-like houses.

The Grapes alone here will this autumn be a sight such as has not before been seen in this country, and will afford no slight evidence of the extent of the demand. *T. B.*

COLONIAL NOTES.

Hong Kong: Trees in the Vicinity of Buddhist Temples, &c.—In some remarks concerning certain remarkable trees at present only known in the vicinity of Buddhist temples, the presence of these trees was attributed to their having been introduced by the priests in their migrations. Another view is, that these trees are really natives of the locality where they are now found, and which have been protected by the feeling of reverence for holy places common to all races, and which have thus escaped the ravages of the woodcutter or of forest fires. On this point we are glad to be able to give the opinion of one especially qualified to give an opinion. Dr. Hance writes:—"With respect to your remarks about trees around temples the case stands thus: I did say that, in places where the original virgin forest had been gradually cut down, it was only in the immediate circuit of temples that specimens of the almost extinct arboreal vegetation were preserved, and this is a statement that any competent observer, who is also a botanist, will confirm. But I did not say that no trees found in temple precincts had been brought by Buddhist priests in their migrations. On the contrary, some few years since I described from the grounds of a temple at Ilang Chau a fine Castanopsis, sent me by Bishop Moule, naming it C. tibetana, relying on the distinct assertion of the monks that it had been introduced from Tibet by pilgrim ecclesiastics. I think this will clear up any misconception as to my views on this matter. Now-a-days I fancy the *prêtraille* has very much deteriorated, and that there are few whose ideas are sufficiently above tea; rice, and greens to lead them to admire a graceful tree, and endeavour to introduc it to their native monasteries. *H. F. Hance, Hong Kong, June 7.*"

The Flower Garden.

The hailstorms and the low temperatures which occurred in July, have unfortunately tended greatly to destroy the bright appearance which the flower garden presented earlier in the season, so much so that the tenderest plants, such as Coleus and Alternanthera, have changed from a brilliant crimson to the dullest brown; and even the Pelargoniums and the more hardy plants were for a time checked in their growth and bloom, nor is the effect even now at all satisfactory, for in consequence of the comparatively low earth temperature the root action is weak, and under powerful sunheat we are now getting the plants immediately droop and many of the tenderer subjects, such as Mignonette, Tropæolums, and Iresines die off altogether from sheer exhaustion, although the soil is quite damp and the roots healthy, but inactive. To remedy this evil the surface-soil should be loosened, so as to allow the moisture to escape and admit the warmer air. A slight shade with evergreen branches over those plants which flag under bright sunshine will also be found advantageous for a day or two, till the proper earth temperature is again attained and root-action is more vigorous.

Daily, almost hourly, attention is now required in the removal of decayed leaves and flowers, the presence of which either in the parterre or herbaceous borders is always most objectionable. All irregular growths should also be immediately tied, pegged, or removed, and all walks and grass should be maintained in the best possible order.

As the time for propagating the autumn stock is now nearly at hand due preparation should be made for this purpose, not only by having cold frames ready at hand, but also in providing a moderate hot-bed for such subjects as require it, and when trimming the plants such cuttings should be propagated by introducing a few at a time as opportunities occur. Still continue the propagation of the spring plants by seeds, cuttings, and division, so as to recruit the amount, amongst which there is always great losses even when treated most carefully at the spring removal.

Lawns and walks should now receive special attention, the season having been so conducive to grass and weed growth; the mowing-machine, as well as the hoe and roller, should be kept constantly at work, so as to produce and maintain perfect order and neatness. *T. S. C.*

The Hardy Fruit Garden.

Walnuts in many districts are a splendid crop; those who still pickle their own will now find them in excellent condition for that purpose, and the trees will be benefited by being relieved of half their crop. So long as a table-fork will pass into the fruit they are fit for pickling, but if it is delayed till the shell begins to form it is too late. In southern counties the great heat will soon finish the Gooseberries; we find Philip I. and Smith's Nonpareil two very excellent late kinds. This month (with the exception of Morellos) will see the end of the Cherries. The Florence is a very fine kind, ripening on a north wall here, just now very sweet eating, short like a Muscat Grape, and nearly as good. The Belle Agatha ripens later on, and neither birds nor wasps will touch it. That fine old Pear, the Jargonelle, will be ripe in a few days, and it must be borne in mind that its season is very short, and it is quite useless to attempt to keep it beyond a week or ten days. After this kind comes Beurré Giffard, a most delicious kind. As the bush fruits will soon be over, one is glad of these, and early Apples to help out the dessert. During this month we have Mr. Gladstone, Juneating, Devonshire Quarrenden, Astrachan, and the Irish Peach. These last two are sweet and tender in the flesh, and if worked on the Paradise stock they come soon into bearing, and such bushes growing only to a small size allows a great variety to be grown on a small space. In speaking of Plums in our last, we quite forgot to mention the very earliest here, viz., Precoce de Tours, which is a most delicious kind, and has, notwithstanding the adverse season, yielded a fine crop on a tree with a south aspect. This month the Castle Kennedy Fig ripens, and the fruit must either be netted or put into muslin bags to preserve them from thrushes and blackbirds. Peaches on the open wall will now begin to ripen, at least the earliest kinds. In gathering these the trees should be gone over daily; in doing so place the four fingers under the fruit, and if it is ripe it will fall into the hand. As, perhaps, no fruit is more easily bruised than the Peach, they cannot be too carefully handled before appearing at dessert. If there are several kinds to choose from for packing, that known as the Malta will stand the journey better than any other we know, and it is, moreover, a good grower and of excellent flavour. We would here remark that good ripe fruit may be eaten at all times and seasons with impunity, nay, with benefit to the human system; but fruit which has got stale and shows signs of decay is most dangerous, and it is the duty of the gardener to be cautious in this respect, and see that what is daily sent to his employer's table is "good for food and pleasant to the eyes." *J. Rust, Eridge Castle, Sussex.*

The Kitchen Garden.

Seed Sowing, Planting, &c.—The beginning of next week in cold districts, and a week or ten days later in warmer localities, will be a good time to make a first sowing of winter Spinach, and again about ten or twelve days later in shallow drills not less than from 16 to 18 inches apart. About the 18th or 20th of this month Cauliflower and Lettuce seeds should be sown on a warm border for wintering in pits and frames, and to be transplanted under hand-glasses and in the open in early spring. For this purpose we prefer Early London, Walcheren, and Veitch's Autumn Giant Cauliflower, the latter to fill the blank that otherwise might, and frequently does occur between the supply obtained from the autumn-raised plants and those raised in heat in January; the Lettuces, the black-seeded Bath Cos, Cooling's Leviathan Cos (a select variety of the former), Hick's Hardy White Cos, and Lee's Immense Hardy Cabbage—four good all-round winter varieties. These sowings, however, should be made a few days earlier or later than the dates above given, according as the situation is cold or warm. The seeds should be sown thinly rather than otherwise, to prevent the plants from damping-off when they come up through being too close together, and be protected from the ravages of birds by a piece of netting supported by short forky sticks to prevent the former getting at the seeds through the latter. The seed of Lamb's Lettuce should be sown thinly in drills 1 foot apart and 1 inch deep in a warm border about the middle of the present month, as also the seeds above referred to; water through a fine rose in the event of the weather rendering it necessary at the time of sowing or afterwards. Turnips (Carter's Jersey Marrow and Jersey Lily are two excellent winter varieties) should also be sown about the middle of this month to yield a supply adequate to the demand during the winter and spring months. Continue to sow Radishes, Mustard and Cress in a warm situation; the latter we find comes up better when shaded with a mat for a few days after sowing. As soon as the seedlings of Cabbage Lettuce and Endive—the result of the seed sown late in July—are large enough to handle prick them out in small beds, and guard against the ravages of slugs by dusting a mixture of new soot and lime along the side and ends of the beds, and so soon as the young plants of Lettuce and Endive become large enough let good breadths be planted of each sort for autumn and winter use—the former to be lifted with balls of earth adhering to the roots and transplanted in cold pits and frames upon the approach of frost. Continue to make plantings of Broccoli, Savoys, and winter Greens as the ground for that purpose becomes vacant, also Celery (from late sowing) and Leeks.

Tomatos.—The weather which we have experienced during the last couple of weeks, while promoting growth in the plants has been unfavourable to the setting and developing of the fruit; we are, however, gathering good supplies of fruit from a few dozen plants which had their fruits half grown when we planted them out, at the same time we made our general planting with smaller plants, and which have supplemented the supplies previously yielded by plants grown in pots under glass. Attend well to the thinning and stopping of the shoots and leaves, so that anything like overcrowding of either may be avoided, and that the fruit may be fully exposed to the influence of the sun, upon the presence of which so much depends; and see that the shoots are tacked to the wall with nails and shreds as soon as they require it to be done, otherwise they will be liable to get damaged by the wind. My experience of Tomatos is, that if the thinning and stopping of the shoots and leaves are neglected—that is, if they are allowed to become overcrowded—both shoots and leaves, especially if the season be a wet one, exhibit symptoms (blotches) of the disease in consequence. These affected parts should be at once cut clean away, and the wounds and plants dusted over with a mixture of lime and new soot, which will arrest the spreading of the blotches. I specially mention this fact so that if any of your readers' plants may happen to be similarly affected they may, instead of quietly observing the progress of the disease, or, it may be, consigning the plants forthwith to the rubbish-heap, they may be induced to take action in the matter, not only by contesting the right of the enemy to be in the field, but also by asserting their right and power to drive him out of it.

General Work.—Peas and Beans intended for seed should be gathered as soon as the pods show signs of ripening, and be placed on shutters in pits or frames where they can have the sashes drawn over them to protect them from rain; or in dry sheds, where they can be shelled, labelled, and stored away on wet days. The old haulm should be cleared away, and the ground, by Dutch-hoeing and raking, be put in readiness for the planting of late Broccoli. Clip Box edgings in kitchen gardens, in either round or square fashion, but in either case it will be necessary to use a line and good taste in the operation; and according to the manner in which it is performed so also will be the effect, good or bad. Early Potatos, which, like the late ones, are in consequence of the heavy rains now showing signs of the disease, should, where not already done, be taken up, sorted, and put away on the shelves in the Potato-house—those intended for seed in one place, and those for table use in another. A portion of the ground thus cleared will come in for the winter crops of Spinach and Cauliflowers. A vigorous war must now be waged against weeds, which, owing to the recent heavy rains, fruit-picking and other pressing work, are more plentiful than desirable in most gardens at the present time, and in the destruction of which a couple of willing hands with the Dutch hoe can show good results for a day's labour. See that Lettuce plants are tied up in good time with a piece of matting, to get the heads well blanched; and that Vegetable Marrows and ridge Cucumbers are cut before they get too large for use: indeed, these should be cut rather under than over-sized. *H. W. Ward, Longford Castle.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Aug. 12	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Cottagers' Show. Clay Cross Horticultural Society's Show. Farringdon Horticultural Society's Show.
WEDNESDAY,	Aug. 13	Sale of Dutch Bulbs and Flowering Orchids, at Stevens' Rooms.
THURSDAY,	Aug. 14	Maidenhead Horticultural Society's Annual Show. Sale of Imported Orchids from Mr. F. Sander, at Stevens' Rooms.
FRIDAY,	Aug. 15	Sale of Established Orchids, ormed by the late W. Terry, Esq., at Stevens' Rooms. Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Aug. 16	Sale of Dutch Bulbs, at Stevens' Rooms.

THE COLOURING OF GRAPES is a subject which always excites the interest of gardeners, the more so that it is dependent to a large extent upon causes which are less under the control of the gardener than are other matters. The border may be properly constructed, the water supply may be sufficient, the temperature may be properly regulated, and all the cultural details attended to, but if light be deficient the result is not satisfactory, and it is just this element which the gardener is the least able to regulate properly. Some experiments made in Italy, and summarised in a recent number of the *Journal of the National Horticultural Society of France*, are of importance with reference to this matter. The experiments were made in various ways. The Grapes were enclosed at different periods in tin boxes so as to exclude the light entirely, while in other cases the action of diffused light was permitted by coverings of light canvas, the temperature in each case being noted. The Vines in this case were grown in the open air, the leaves being fully exposed to the light, so that their functions were in nowise artificially interfered with. Bunches of two varieties were enclosed in tin boxes, as above stated, some just before the expansion of the flowers, others after the flowering period, and others again just as the berries were beginning to colour. The berries were analysed, and the analysis compared with that of berries grown under different conditions at two different periods, viz., that at which they began to colour, and that when the berries were completely ripened. One hundred berries were analysed in each case, with the following results :—In all cases where the berries were grown in shade, their development was retarded as compared with those grown under ordinary conditions. The quantity of acid contained in the juice of the berries shaded till they began to colour, was always less than in the case of the berries allowed to grow in the ordinary way. Moreover the colouring of the berries was always in the main retarded by darkness, with certain variations. When the berries were completely obscured soon after flowering, other conditions being equal, they remained small, coloured tardily, the amount of acid and of sugar being much less than normal. The berries and the stalks also contained much less tannin or astringent matter than usual.

As to the berries light exercises no influence on their development or period of ripening after they have begun to colour. There are, therefore, two periods in the formation of the berry in which the action of light is entirely different. Light acts powerfully from the flowering period to the time when the berries begin to colour; it is less active from that time to the period of perfect ripening. This is exemplified by the following figures.

One hundred berries of Grapes grown under normal conditions yielded at maturity 22.92 parts of sugar. One hundred berries grown in darkness from the flowering state gave only 18.03 of sugar. The same number of berries takne from a box in which the bunch was exposed to diffused light (not shaded), and therefore exposed to a higher temperature, only yielded 14.49 grammes of sugar. One hundred berries grown in the dark from the time they began to colour, contained a larger proportion of sugar than those grown under natural conditions, viz., 27.38 grammes of sugar when the temperature was the same as that of the external air, but only 25.47 grammes when they were subjected to a higher temperature.

The proportion of acid was 1.625 grammes in the case of the berries shaded just prior to or shortly after flowering, and 1.446 in the case of those allowed to ripen in the dark after they had begun to colour.

The general conclusions drawn by the experimenter, M. PORTELE, are these :—(1), the Vine may flower and ripen its fruit in the absence of light; (2), the influence of light on the berries is quite different according to their stage of development, that is to say—(1), from the flowering period to the time the berries begin to colour; and (2) from this time till they ripen. Light is essential in the first stage, it is much less influential in the second.

It should be borne in mind that the first of these conclusions has reference to a climate in which the amount of light is always great, but it will not apply to our cloudy uncertain summers, where the light is rarely more than sufficient, and generally not that, to secure the proper carrying out of the first stage. Of course, all due allowance must be made in applying these principles in this country under such very different conditions. Ordinary black Grapes will ripen fairly well in the comparative but in the case of Muscats, they colour better when exposed to as full light as posssible.

—— HALESIA HISPIDA.—This fine hardy shrub is perhaps best known under the name of Pterostyrax, but we think gardeners will, quite independently of botanical grounds, be inclined to thank Messrs. BENTHAM and HOOKER for reducing the genus to the more easily remembered name of Halesia. Halesia hispida is a hardy Japanese shrub of recent introduction, with numerous white Deutzia-like flowers in long terminal racemes. A peculiar appearance is produced by the arrangement of the flowers on one side only of the branchlets of the inflorescence. The botanical history of the plant is well known, and our illustration (fig. 34) is sufficient to show the general appearance of the plant. It is decidedly one of the best recent additions to the number of hardy deciduous flowering shrubs. For the specimen whence our figure was taken we are indebted to W. E. GUMBLETON, Esq.

—— FALL OF THE LEAF.—Amongst other cases of premature fall of the leaf, a very curious one has occurred in Hypericum uralense. The lower parts of the leaf become dry and yellow, and at the margin there are pale brown spots, bordered by a dark brown line, and beyond this a bright red halo. There are abundant perithecia on some of the spots, but, unfortunately, neither Mr. BROOME nor myself have been able to find perfect fruit in them; for the present, therefore, we hesitate to give it a name. Like others, though now in the month of August, and after repeated thunderstorms, we have not seen the slightest trace of the fatal Peronospora, though we have constantly watched for its appearance. Hypericum uralense has stood several winters unharmed, and from its neat habit and pretty flowers it is a very desirable plant for the hardy border. *M. J. B.*

—— HABLITZIA TAMNOIDES.—Some plants have such a strong and characteristic individuality that, in spite of the smallness or inconspicuousness of their flowers, when taken singly they are attractive and even handsome when seen in a mass. The Hablitzia, when it has attained proper dimensions, may well claim the attention of cultivators, as an isolated specimen, or for grouping amongst shrubberies, or elsewhere to relieve the monotonous outline of low growing plants. It is remarkable and altogether anomalous in the order to which it belongs by its tall climbing habit. The small greenish flowers are produced in great profusion all over the upper part of the stems, and are very effective in their way. The plant is so anomalous in character that authors differ as to its relative position in the natural classification, whether it belongs to the Goosefoot family or should be included amongst the Amaranths. Only one species is known to science—a native of the Caucasus. A fine specimen may be seen in the herbaceous ground, Kew.

—— IVIES.—Those intending to plant Ivies on walls of limited areas, or in which there are many window openings and doorways, should be cautious not to employ rank-growing varieties like H. Regneriana, H. amurensis, H. algieriensis, H. palmata, or H. poetica, but rather to choose the smaller H. helix, H. caenwoodensis, H. rhomboidea, H. digitata, H. agglomerata, or the fine-foliaged sorts. The large, strong growing varieties of Ivy produce shoot and foliage so fast, when once established, that it is a tiresome affair to keep them within proper bounds, as the shoots will creep into the minute spaces between woodwork and stone or brick, under tiles and slates, and commit great havoc in a season if not kept well within the allotted space. They give also an easy means by which rats and mice can get into a building, and when they are old they are of service to the burglar in entering a house by the upper windows. With the weak growing, more delicate kinds, attention, such as has been mentioned, is not so needful, so that the householder has one matter the less on his mind—a consideration of some value in these days. A great growth of Ivy covering a roof is thought to be a pretty looking object by some people, conveying to them possibly some idea of a retreat away from the busy haunts of man, a castle of Sleeping Beauty or other nice but impossible place. But as a matter of fact the rustic looking Ivy-covered roof is an unmitigated nuisance, for the Ivy shoots uproot the slates and tiles, making the roof leaky, of course to the damage of the woodwork and ceilings below, and the foliage becomes the haunt of all the vagabond sparrows, rats, bats, or other vermin about the place. Here they are safe from molestation from below, and increase and multiply exceedingly.

—— IMPATIENS FLACCIDA. — A white-flowered variety of this has been grown in gardens for some time and disseminated under the names of I. alba and I. platypetala alba. I. platypetala was introduced to this country nearly forty years ago, and has tuberous roots and whorled leaves. The subject of this note, of which the type may be seen in the Begonia-house at Kew, is a bushy herbaceous plant with diffuse or spreading branches and scattered leaves. The central stem ascends in a beautiful zig-zag direction, and, together with the lateral branches, is stained with red, presenting a marked contrast to those of the white-flowered variety, which is pale green. The flowers, too, are a pleasing shade of purple, and so distinct from those of the variety as well as from the popular I. Sultani, that all three are not only admissible but even desirable in a collection of stove plants.

—— FICUS REPENS.—The difference between the small-leaved form of this plant, so often seen on the walls of stoves (but which, by the way, is nearly hardy), and the large-leaved form acquired when the plant is grown as a shrub, is so astonishing as to be almost incredible to those who have not seen the change and the intermediate stages. The shrubby form occasionally produces fruit, as in an example we figured in our volume xiv., p. 560. We are indebted to Mr. B. S. WILLIAMS for specimens of the plant in all their stages, with the fruit.

—— CANADIAN PLANTS. — In Mr. MACOUN'S *Catalogue of Plants of Canada*, which so far only includes the Polypetalæ, no fewer than 907 species and 243 genera are enumerated. The catalogue is issued at Montreal, under the auspices of the Geological and Natural History Survey of the Dominion. In view of the reviving taste for hardy plants, and in view of the necessity for looking to our forest supplies, this catalogue ought to be of great value, while the British Association visitors will be glad to be reminded of the existence of such a book even in its present incomplete state.

—— CHRYSOBACTRON HOOKERI. — If we could imagine our native bog Asphodel three or four times magnified in stature and robustness, a pretty correct idea would be formed of this Golden-rod from New Zealand. The leaves, however, are long, linear, and channelled, instead of being flat, and more or less sword-shaped, as in our native representative. The



Fig. 34.—Halesia hispida : hardy shrub : flowers white. (see p. 176.)

raceme of starry yellow flowers studded with the pure white anthers commence opening from the base upwards, and keep up a long succession of bloom as the stem elongates. The flowering period is lengthened if the weather is cool, or if the plant is grown in a cool moist position, fully exposed to the light, but more or less screened from the full glare of the summer sun. It is an appropriate subject for the bog-garden, seeing that it frequents rich alluvial plains and the banks of water-courses in its native country. It flowers yearly on the new rockery at Kew, and was figured many years ago in the *Botanical Magazine*, t. 4602.

—— GOVERNMENT CINCHONA PLANTATIONS IN JAVA.—A report on the Government Cinchona plantations in Java states that the number of trees at the end of 1883 was 3,299,500, as compared with 3,305,200 in 1882. Ledgeriana formed by far the largest proportion of the varieties cultivated, Succirubra standing next, and then officinalis; after which came Calisaya and Hasskarliana, and the lowest number belonging to lancifolia. The Government now sells by auction at Bandong the seed not required on the plantation. In consequence of the increasing cultivation of the Cinchonas by private enterprise the seed has been in great demand, and on this first auction as high a price as 2 florins per grain was paid for some lots from the original LEDGER trees. During the second quarter of the year considerable damage was done to the trees by an insect called Helopeltis Antonii, but by exterminating the insect as far as possible, and removing the infected trees or branches, the evil was overcome. As an accessory means the ground was thoroughly harrowed and manured.

—— ORCHID PRICES.—The following prices were realised at the sale of Mr. BOCKETT'S Orchids by Messrs. PROTHEROE & MORRIS on Friday last:—Phalænopsis Portei, £21; Cattleya exoniensis ×, £18 18*s.*; Cattleya gigas, NORMAN'S variety, £12 1*s.* 6*d.*; Lælia anceps, DAWSON'S variety, £7 7*s*; Dendrobium Griffithianum, £9 19*s.* 6*d.*; Cypripedium Fairrianum, £19 19*s.*

—— EXCELSIOR LAWN MOWER.—The Secretary to the Glamorganshire Agricultural Society writes that this implement, shown by Messrs. CHADBORN & COLDWELL, was Highly Commended.

—— WOODSIDE NURSERY, FINCHLEY.—The annual holiday of the *employés* of this nursery was held at Harpenden, on Saturday, August 2, when the single members managed to beat their married competitors at cricket.

—— SOLANUM JAMESII.—This is one of the tuber-bearing species which have lately attracted much attention, as possibly furnishing a means of obviating the severity of the Potato disease. It is a native of Arizona, and has glabrous, unequally pinnately divided leaves, with narrow segments and white flowers. It is seemingly of slender habit, and its tubers are stated to be of excellent flavour. The plant is figured and described by Sir JOSEPH HOOKER in the July number of the *Botanical Magazine*, tab. 6766.

—— APPLES.—After wide experience of the very indifferent character of the Apple crop in the metropolitan market gardens we were not a little surprised to find, when traversing a portion of Bucks the other day, that in not a few orchards and gardens Apples were positively plentiful. Especially was this the case about Farnham Royal and Burnham, some trees here and there literally hanging with the load of produce they bore. In Mr. JAMES' garden at Woodside, lying as it does truly under the shelter of a wood, three large Blenheim Orange trees are carrying a fine crop, and some small trees of various kinds are well fruited. Not only are such crops general in that district, but we noted with much interest in the woods remarkable crops of wild Crabs, their existence even at that unripe stage showing conclusively that boys are far less abundant in that locality than they are nearer London. Obviously the natural deductions to be drawn from the comparative abundance of Apples in this well wooded district are these:—That the trees have abundant shelter; that the force of sweeping easterly winds is much broken by many alternating belts of trees; that high and drier localities are better placed for Apple culture than are those situate at a lower and consequently moister level; and that the region of woodland is warmer than is the district where woods and forest trees are discountenanced. Almost every year brings sad experience of the treacherous nature of our spring seasons, and none has been more deplorable as far as fruit tree crops are concerned than the present year. That some localities should prove even partially exempt from the general failure seems to point to considerations well worthy of examination.

—— SOUTH AUSTRALIAN GARDENERS' SOCIETY.—We have received the annual report of this flourishing Society, which is highly creditable to the Colony. We append a list of the papers read, as there are many societies in the Mother Country of greater pretensions that would do well to imitate what is done at Adelaide:—

Twenty-five meetings in connection with the Society have been held during the year—three being special committee meetings, and twenty-two ordinary monthly and additional *interim* meetings—at which discussions, &c., took place as follows:—

July 7.—Exhibition of microscopic objects.

July 19.—Paper on "Potting;" also discussion on "Oxalis cernua."

August 4.—Discussion on "Potting;" also discussion on "Oxalis cernua" continued.

August 16.—Discussion "Diseases affecting Apples," and further discussion on "Oxalis cernua."

September 1.—Paper on "Pruning," read and illustrated by diagrams on a blackboard, followed by discussion.

September 20.—Paper on "Vine-pruning" read and discussed.

October 6.—Paper on "Pruning Fruit Trees and Roses," illustrated with sketches specially prepared, and a branch from a Pear tree showing system of pruning for past five years.

October 18.—Paper on "Glasshouses for Plant-growing" read, and followed by discussion.

November 3.—Subject of "Pruning" fully discussed.

November 15.—Paper on "Glasshouses for Plant-growing" further discussed.

December 1.—"Observations on Flowers, &c., on the Table," by the various exhibitors.

December 13.—Paper read on the "Pelargonium."

February 2.—Short discussion on "Oidium and the Santapola Vine," and paper on the "Pelargonium" discussed.

February 14.—Paper containing "Reminiscences of a Trip in Victoria" read and discussed.

March 1.—Paper read, entitled "A few words about Bees."

March 13.—Discussion on various plants, including the Fuchsia, Petunia, &c.

April 5.—Paper on "Bees" discussed.

April 17.—Paper on "Garden Walks" read.

May 3.—Remarks on "Bees," by Mr. Howard.

May 15.—Two papers read—"The Almond in South Australia," and "The Influence of Fungi on Vegetable Organisms."

—— TROPÆOLUM SPECIOSUM.—This beautiful perennial, looking, when in fine bloom, like a scarlet cloud on bushes over which it may be allowed to ramble, grows seemingly best near the sea, in positions screened from the rough winds. Its successful cultivation in such maritime localities would seem to point to the advisability of planting it in those, wherever practicable—the mild equable temperature, together with the saline properties of the air suiting the nature of the plant better than the conditions to be had in inland sites.

—— RUBUS CHAMÆMORUS.—A valued correspondent in the Lofoden Islands sends us specimens of this curious little species, of dwarf, almost shrubby habit, destitute of prickles, the leaves orbicular, somewhat palmately lobed, dentate, and of a rich bronzy-red colour. Even more striking is the fruit, very large in proportion to the plant, being about 1 inch in diameter, like a common Blackberry, but of a bright orange colour. To us the fruit seems rather insipid, but upon the borders of the Arctic circle one cannot be too particular as to fruit, and this fruit forms a valuable resource for the natives, who collect and preserve it. It is a plant rarely met with in Scotland.

—— OTTELIA OVALIFOLIA.—The species of this genus only number six or seven, yet they are widely distributed in the tropics of both hemispheres. This seems to be the only one introduced, which is to be regretted, since it belongs to a very neat and attractive class of aquatics. The flowers are ephemeral in their duration, opening in the morning and shrivelling up towards night, but the plant is very prolific, throwing up in succession its large white flowers which are marked with a purple spot at the base of each of the three inner perianth segments. The flowers may be compared to those of our native Frogbit, but are two-sexual, whereas in the latter they are only one-sexual. The leaves radiate from a solitary crown, and resemble those of Potamogeton natans, one of our commonest pond weeds, in shape but not in colour, being a dark green. The runner-like branches by which the Frogbit multiplies so rapidly are here absent. The Ottelia may be seen in the tank in the Victoria-house at Kew.

—— EREMURUS AURANTIACUS.—In the new rockery at Kew a plant of this has been flowering finely for some time. It was added to the collection last year through the medium of Herr MAX LEICHTLIN, who is well known for his liberality in the distribution of new or rare plants. The three-edged glaucous leaves are very narrow, and form a tuft at the base of a naked flowering stem of some 3 or more feet in height. The yellow flowers form a long raceme, that commences flowering from the base upwards, producing a continual succession of bloom for some considerable time. The plant is grown in a moist peat bed well shaded from the afternoon sun, and appears to enjoy its position. There are other species, and some with white flowers. All are stately objects, but require cultivation in pots or else a cool moist bed out-of-doors in the neighbourhood of London, on account of the dry, warm climate.

—— THE POTATO CROPS.—The reports of the condition and prospects received from so many diverse quarters of the United Kingdom, and published by us last week, show singular unanimity as to the comparative absence of disease, the wide area of the drought and consequent reduced produce in all early kinds, and finally the very promising appearance of the late sorts, the which, so far, are everywhere showing luxuriant growth, and, so far, little or no evidence of supertuberation. Thus all things point to a splendid crop of the national tuber, and through that a notable addition to the food of the people. To have reached the end of July with reports of disease seen of only the most inconsiderable kind shows a circumstance in the history of modern Potato culture well worthy of comment. There is every prospect that, with a good corn crop, one of the best for many years, we shall see a wondrous Potato produce, and these two things combined must help to keep food cheap through the winter. With only very moderate prices ruling for home produce the outlook for the foreign Potato grower is not fascinating, as whatsoever he may be enabled to accomplish early in the season yet when he has to compete in the market with our abundant crop his chance is poor indeed. With plenty of cheap and wholesome food the people, and the poorer section especially, may well find some spare cash to spend in other directions, and it is hoped trade generally may thus revive. It is worthy of remark that some of our fungoid correspondents have been either more anxious than gardeners to espy the symptoms of the disease or more successful. In any case the almost universal mention in the reports of the absence of disease so far shows that it has had to be sought for to be found. One thing is certain, that more really ripened leafage may now be seen than has been the case for many years.

—— LONICERA SEMPERFLORENS MINOR.—What is being grown at the Handsworth Nurseries, Sheffield, under this name is represented by a charming Honeysuckle bearing large clusters of red and golden flowers; it is distinctly floriferous, and of vigorous growth. Trained over wire trellises, as it is seen here, it makes an excellent specimen and decorative plant. It is always in bloom, and it does well in a cold house with Lapagerias. It is a very useful and attractive form of the Trumpet Honeysuckle, and is well worthy the attention of plant cultivators. It makes an admirable plant for a warm conservatory.

—— SUMMER STOCKS.—We saw the other day at Woodside, Farnham Royal, a very beautiful mass of summer Stocks, in many colours, and pyramidal and giant branching in habit, the proportion of doubles being very large, and in development all that could be desired. These were from seed furnished by Mr. ROEMER, of Quedlinburg, Germany, and represent a grand strain. The colour varied from pure white

through canary, rosy-cream, carmine, red, crimson, pale blue, puce, light purple, and violet, with several other hues, and all very pleasing. We fear there are too many gardens that are innocent of the rich perfume arising from such a mass of Stocks as this, and sadly lack the beauty and rich hues of colour incidental to their presence; yet a trifling outlay for seed will enable any one to have as fine a display as greeted us in Mr. James' garden.

—— Cyclamen Corms.—We noticed also that in frames there were planted out a large number of selected Cyclamen corms, with the object of breaking them well before repotting. Mr. James holds that, so treated, the old corms break up more strongly and regularly than when put dry into pots. The soil is loose and sandy, and is kept just moist on the surface, whilst the lights are shaded during strong sunshine. One or two corms lifted showed strong fleshy roots starting downwards, thus evidencing that they were doing well. In about a month they will be lifted and potted. Several beds of a grand strain of red-flowered pyramidal Mignonette evoke admiration, and a considerable effort is being made to induce fancy and show Pansies to do well. Though the position is warm, the soil is naturally cool, moist, and holding—conditions not often found in our southern districts.

—— M. Lucien Linden.—We are happy to congratulate M. Lucien Linden, of Ghent, on his marriage with Mdlle. Marguerite van den Hove, of Ghentbrugge.

—— Scabiosa caucasica var. amœna.—Perhaps this is the handsomest of all the cultivated Scabiouses. It grows about a couple of feet in height, has long stalked lanceolate lower leaves, and pinnate cauline ones. The flower-heads are very large, the outer flowers being remarkable for the large size of the three-lobed lower lip, in colour a rich blue purple. The type was introduced to cultivation many years ago by Loddiges, and was figured in the *Botanical Magazine*, t. 886.

—— Baskets of Flowers.—Generally at flower shows a very pretty exhibition results from a class for decorated baskets—a class specially suited to display the natural capacities of women to ornament with flowers the best rooms in their houses. Floral baskets are, perhaps, of more recent introduction than vases and epergnes, and may well have originated with the common practice on the part of ladies of using baskets with which to collect their flowers from the garden for domestic decoration, and the pretty unstudied results which sometimes flow from their use. Still it is evident that something more than mere unstudied labour is necessary to produce a prettily dressed basket, and we are not sure whether in this work there is really not a greater field open for the display of feminine taste than can be found in vase decoration. In dressing a basket with flowers it may well be thought desirable to give to the arrangement an air of negligence, just as though the flowers had been cut and placed in the basket for some other use. To produce such an arrangement requires real art. On the other hand, elaborate effort to obtain specially dressed effects in a basket is exceedingly bad taste. Too much material, and too much elaboration in its arrangement, produce faulty results that should always be condemned. We were very much surprised, the other day, to see that a very prettily dressed basket was rejected from the first place because the exhibitor had not dressed the handle with flowers. Surely handles are intended to carry baskets by, and though a twist of any simple climber may be pleasing round them, smothering them in flowers is absurd. Judges should remember that baskets are intended to be useful as well as ornamental.

—— Gooseberries on Waste Walls.—There are many who prefer ripe Gooseberries to other kinds, and there are few who despise a good dish of mellow Gooseberries on the dessert-table, when the sort is right. One matter in favour of Gooseberries is that they are not particular as to the place they grow in; they will thrive and bear freely where most other fruits will only exist without giving much or any return. Against a north wall, for instance, they succeed well, rarely failing to bear abundantly, if the position is not darkened by trees or other surroundings, or the opposite—of being too much exposed to cutting blasts. Yet how often may such walls be noticed with nothing on them, or occupied by fruit trees of some sort or other that do not yield as much fruit as would pay for the shreds they are nailed with, but where, if Gooseberries were in their place, a crop would seldom be looked for in vain. The fruit has one property so well known as scarcely to require naming—the ability to keep on the trees for so long after it is ripe, with the help of a little cheap netting to keep the birds off. We know gardens where, by utilising spare bits of wall of the description indicated, an acceptable addition is made to the dessert until far on in the autumn. In such seasons as this, when the crop of Plums and Pears in many places is all but *nil*, a good supply of late Gooseberries would be doubly acceptable.

—— Stachys coccinea.—Although frequently not able to withstand the variable temperature of an English winter, this Mexican species is decidedly a plant which it is safe to recommend for general cultivation. A pot of cuttings wintered in a cold frame makes certain of the species, and the young plants soon attain a good size, and produce a profusion of large bright scarlet flowers. It was introduced to this country in 1800, and was figured in the *Botanical Magazine*, t. 666.

—— Lathyrus tuberosus may be safely recommended as one of the best and most ornamental members of the genus Lathyrus. As, however, the tuberous roots are somewhat difficult to eradicate where the plant once obtains a thorough footing, it is as well to plant it in such a position where it may be allowed to develope without danger of its becoming a nuisance. If planted in a semi-wild spot or by a hedgerow, it produces a profusion of its richly coloured flowers and forms a very handsome object.

—— Lilacs for Forcing. — The best plants for this purpose are not those that are to be found growing in shrubbery borders, although these are not infrequently recommended for the purpose, but as they are very generally rough specimens that have received no particular preparation, the crop of bloom is but scanty. Moreover, the plants make, if used for decorative purposes, a disappointing feature in any arrangement in the greenhouse or conservatory. It will be found a far better practice to dig up yearly a few well rooted suckers of good sorts (the Persian is very good for forcing), to trim them up much in the same way as Gooseberry cuttings are prepared, only they should be 2½ feet to 3 feet in length. These should be planted in well prepared ground, at distances of about 2 feet apart. The spot chosen should be sunny and open, it can hardly be too warm for them. The standard form of training will be found the most appropriate for a decorative object, and is that one in which the growth of shoots can be best regulated and the balance of growth preserved. Should shoots spring from the roots they must be pulled up, and any side growths on the stem should be pruned back to a leaf or two. In two seasons, if they have been properly attended to, the plants will have made nice bushy heads and comparatively stout stems These little standard stocks will form capital subjects for budding or grafting superior kinds on. Among these latter are the double ones of recent introduction, of thoroughly ripened long shoots, that may be depended on to produce plenty of bloom. Strength in these main shoots will be best secured by ruthlessly cutting away all weak useless inner shoots, as is done in the case of the Rose. A rich mulch round each little tree will be of benefit in light gravelly or sandy soils, but in heavy ones it is detrimental, as keeping the sun's heat out of the soil, and thereby hindering the ripening of the wood. Watering must be attended to up to the end of July in very dry weather. All potting should be done as soon as, or just before the leaf falls, pots and tubs being used just big enough to hold the ball of roots, allowing for a little packing of loamy soil. After forcing the plants should be kept in a cool house till April, when they may be returned to their places to grow again for two summers before being used.

—— Arenaria gypsophylloides.—The white flowers of this species are not at all handsome individually, but they are produced in such profusion in branched panicles as to render the plant a decided acquisition in the mixed border. It grows about 1½ foot in height, and its rather long slender grass-like leaves assist in giving it an airy grace which is absent from many of its more showy relations.

Grand Yorkshire Gala.—The balance-sheet of the Grand Yorkshire Gala, at York, for the current year, has just been issued, and it being a document of an important and assuring character, is worthy of notice. The sum of £542 15*s.* 6*d.* was paid as prizes and judges' fees; £78 for bands; £270 for the hire of marquees and other erections; and £100 for fireworks. In addition £50 was paid for the hire of ground; and there is a large total of other necessary expenses. The receipts at the gates during the three days the exhibition was open amounted to £1400, and a further sum of £215 was derived from other sources. The promoters of this great and successful enterprise have now in hand the handsome sum of £1750, the great proportion of which is invested, and at a meeting of the guarantors and life members, recently held, it was decided to present the sum of £25 each to two of the York charities. The Society is therefore in a very satisfactory financial position. It has been proposed to the committee that the National Rose Society should hold an exhibition at York next year, a proposal which, it is believed, will be most favourably entertained. Ye impecunious societies up and down the country, struggling with manifold difficulties, take courage and hope for the best.

—— Presentation to Mr. Austen. — On Tuesday evening last a handsome Oak sideboard, together with an album of portraits, was presented to Mr. Austen on the occasion of his leaving the gardens at Ashton Court, near Bristol, to undertake the direction of those at Witley Court. The presentation was made by Mr. Webley, the Secretary of the Bristol Chrysanthemum Society, at a dinner at which a large number of Mr. Austen's friends and colleagues were present.

—— Publications Received. — *Illinois Crop Prospects.* — Vick's *Illustrated Monthly.* — *Science Monthly.* — *The Asclepiad.* — *The Jersey Gardener.*

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 4, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: —The weather has been generally fine and bright over south-western, southern, and eastern England, but cloudy or dull elsewhere. Very little rain, however, has fallen in any part of our islands. The temperature has been about equal to the mean in "Scotland, N.," but 1° or 2° above it in all other districts. The maxima, which were recorded on August 1 or 2, varied from 68° in "Scotland, N.," to 81° in the "Channel Islands," 83° in the "Midland Counties" and "England, S.," and 84° in "England, E." The minima were registered in most places on the 4th, and ranged from 40° in "Scotland, N.," to 51° in "Scotland, W.," and 53° in the "Channel Islands." The rainfall has been considerably less than the mean in almost all districts. Bright sunshine has varied from between 13 and 20 per cent. of the possible duration in most of the W. and N. districts to 36 in "England, E.," 42 in "England S.," 44 in "England S.W.," and 56 in the "Channel Islands. Depressions observed:—Very few depressions (and those small and shallow) passed over our islands during this period, but a rather extensive disturbance was observed to be travelling northwards, outside our extreme western coasts, on the 1st and 2d, causing the wind, which had previously been light and variable, to blow freshly or strongly from between S.E. and S.W., at all our western stations, and with moderate force from the same quarters in other parts of the country. As this depression passed away from our coasts the wind became light or moderate from the westward over the whole kingdom.

Gardening Appointments.—Mr. T. Garnett, late of Pound's Gardens, Devonport, as Gardener to E. S. Hett, Esq., Cavendish House, Clapham Common. —Mr. Nelson Church, late Foreman to Mr. Cooper, at Highbury, Birmingham, as Head Gardener to W. E. Everitt, Esq., Fenstall, Bromsgrove, Worcestershire.—Mr. David Burns, of Carton Gardens, Maynooth, to be Gardener at Farnham House, Co. Cavan.—Mr. Bethell, late Gardener to Sir Richard Wallace, succeeds Mr. Austen at Ashton Court, Bristol.—Mr. W. Prior, lately Gardener at Butterby Hall, has retired, in consequence of changes in the proprietary. Mr. Prior's address henceforth is Ripley, near Derby.

CURRAGHMORE.

This is a suggestive name in most parts of Ireland, but particularly in the South. The word itself is of Gaelic origin, and means the "great marsh." Appropriately, as if to connect the present with the long dark mediæval past, bunches of Rushes and Sedge grass are allowed to greet the eye some distance in front of the courtyard. There are few families that for at least two centuries fill so large a space in Irish history as the Beresfords—as landlords and great Irish nobles in the tented field, like Field-Marshal Beresford ; or in the more sober walks of peace, as the late Protestant Primate of all Ireland ; or the hero of a thousand hairbreadth 'scapes, like Lord Henry. But however alluring historical reminiscences may be, and however tempting a peep into the Dark Ages may seem, your journal is more concerned with gardening and collateral matters, and as a visitor to one of the most remarkable places in this or any other country, I merely here jot down a few hurried recollections from that point of view. The size and vastness of the desmesne is one of its most striking features. The drive in a right line from one lodge to the opposite is said to be more than 3 English miles ; while the boundary wall encloses 16,000 acres. The walks and carriage-drives are said to be more than 30 miles long —work for a man and horse driving briskly a whole day. Foxes are protected here, and both hare and fox-hunting have been possible within its extent alone. I understand the time is not long past when sixty hunters were always stabled at Curraghmore, and twice that number of brood mares, stallions, and fillies, in preparation. The huge riding-school is still here, a vast structure, and many a groom and jockey recently disemployed, when his lordship, the present Marquis removed his hunting establishment to England, are hoping to see again, what they speak of as "the good old times." But I must not digress further from the subject proper. Accompanied by some gardening friends, and a small party, we drove from "rare Clonmel," taking the Waterford Road, and skirting the silvery Suir, with a view far into Tipperary, and through one of the richest, best cultivated and smiling valleys, that much more travelled thanes than the writer have declared they have ever seen.

Admission, especially recently, at any of the lodges can only be secured by special order or a pass from the head forester (Mr. Robinson), which in all suitable cases, it is to be presumed, is readily given. One of the striking features here and there, driving along through the vistas of great old Oaks or patriarchal Pine trees, is the splendid crops (wherever a stretch is broken for the purpose of maintaining the fertility of the land) to be observed in the distance. Practically, therefore, the noble Marquis is a patron of stock, grain, green, and grass farming on an immense scale.

One of the sights the visitor may chance to see is the large herd of deer, that sniff the breeze and career to the highland slopes, for here there are hill and dale, open space and thickly planted woodland. A stranger here without a guide would be as certain to go astray as he would if dropped for the first time in Covent Garden !

Driving towards the gardens, and leaving the court square, pleasure grounds, and accessories until later, when we might have the company of the respected head gardener (Mr. R. Fairbairn), we admire, as we proceed, one of the great beauties of the place—the winding and snake-like bends here and there of the small river Clodiagh, with its playful fishes. Placid, small, and peaceful, it now meanders after two months of dry weather, but at other times the stream rushes fast and furious. Looking down on its varied smiling or troubled breast are many giants of the forest.

I should have stated that one of the great attractions of Curraghmore consists in its immense old forest trees —trees that have seen many weary centuries come and go, trees that the oldest inhabitants only remember as "just as you see them now." Some Firs and Pines on our way seemed to our accompanying friends to tower away 200 feet towards heaven—in reality they must have but fallen fractionally short of that. On the bank of the river, and near the garden entrance, is one of the finest Cedrus atlantica argentea that has yet come under my notice.

Though a considerable distance from the mansion, in years gone by, whoever selected the site for the houses and vegetable grounds must have been no mean judge. They are on a warm southern slope, entirely closed against all bad winds, and cover about 10 acres. On the highest ground is the "improvers' " bothy, and some distance beneath a handsome residence for the head gardener, already named. Though some years built, it has been as yet only occupied by a Fairbairn — the present occupant succeeding his brother, who some years ago left to take up the seed business in Carlisle. There are thirteen large houses and about a score of pits or frames, most of them heated underground from one of Weeks' large No. 1 boilers. I may as well say at once that, except you were prepared to place at my disposal a special number, I could make no pretence to describe their contents. Pine growing has at all times been a speciality here, and two large stoves are generally occupied for fruiting. We hear of Pines being sold in the London market for fabulously low prices, but one may venture to predict they are something very inferior to Mr. Fairbairn's. He has framed in his sitting-room a Certificate from the Royal Horticultural Society of London for an Enville Pine weighing 9 lb. 6 oz. Smooth Cayennes and Queens here, as elsewhere, are very certain bearers and general favourites, and, what is always so desirable, perfectly robust and free from scale or bug. It is easy to understand why Pines grown here are preferred to anything to be had in London, especially to the imported, which last are comparatively said to be as good as a "sweet Turnip." In the vineries here, too, Black Hamburgh is the sheet-anchor Vine. The early house was disposed of in May, then the succession Hamburghs and Muscat of Alexandria—very fine crops. Gros Colmar, very difficult to colour, is all that could be desired ; and Lady Downe's, in a cool house, seems likely to bridge over the Grape year. Mr. Fairbairn, it may be worth noting, attributes his extra Vine success this year to top-dressing his Vine borders with some loads of fowl manure before the fibrous roots began to feed. Before leaving the stoves I may note a method of growing Tomatos for early use deserving of imitation. Over the pathway, on a line with the eaves, and so placed as not to interfere with every ray of sun and light, was placed a shallow wooden box running the whole way, and containing just as much feeding material as was necessary, and no more. In this the Trophy Tomato was planted, and has been supplying his lordship's London establishment for a long time past. The few that remained seemed to indicate that this variety is a first-rate one for early work.

The sight from the entrance, too, must have been brilliant. Adjoining was a very healthy, promising Stephanotis, blooms of which are always welcome in London. This reminds me I gathered that the demand for cut flowers, &c., during the "London season" seemed enormous. Usually four large boxes have to be despatched every day, the packing requiring considerable care and supervision, adds, where necessary, much to a gardener's responsibility. This is a department of gardening well worth the notice of the horticultural Press, and which is seldom referred to ; the successful packing of fruit, when to be sent considerable distances, I have been assured by a Covent Garden fruiterer, not one gardener in fifty can do to perfection. To meet this demand, especially for cut flowers, some things have to be grown in enormous quantities. Pelargoniums and Fuchsias fill a house ; there are several houses, pits, and frames of Ferns, the preference being given to those useful for cutting, as Adiantum cuneatum and A. gracillimum. Here I would notice where table decoration has to be attended to by the gardening staff, a very useful arrangement of Lycopods, &c., in tin devices, to suit the size or shape of the tables or designs. Selaginella denticulata is a little beauty used in this way, always handsome, and requiring little care. Foliage plants, such as Dracænas, &c., are largely used for the same purpose, and when kept clean it is surprising what a useful thing Nerium Oleander elegans is. I may here stop to ask what has become of the white variety, which I cannot remember to have recently seen referred to? Outside whole squares are occupied by such things as Deutzias, Salvias, Spiræas, Chrysanthemums, Ericas, &c., for winter work ; while Tea Roses that have given baskets of flowers are getting their wood ripened and hardened. It was utterly impossible in one day to see the vegetable and fruit garden as well as the flower ground, &c., around the court, so we preferred the latter. Formerly, I understand, Lord Henry, and subsequently Lord John, in busy times, had as many as seventy hands in the gardens and grounds — generally forty were permanently employed ; now Mr. Fairbairn has to try to look after this immense place with something less than half the number. No doubt, rents are not paid as formerly, and too frequently economy commences in the garden ; but I must avoid such a debatable topic as the payment of rents, and, with you, regret it should affect gardening prospects.

A considerable lake flanks the pleasure ground, but only a fraction on the opposite side is bedded out, and would be unnoticed in the vast extent. One of the largest beds is formed of succulents, alternated with Coleus, Menthas, Mesembryanthemums, Herniaria, &c., the design being very effective. Herbaceous gardening is also patronised, but we were unable to reach it, having a return drive of 20 miles. The most conspicuous feature in front of the court, and in the centre of the flower ground, is the immense fountain which some of your readers may possibly remember in London, at the first International Exhibition, inaugurated by Prince Albert and Sir Joseph Paxton. This was purchased by the late Lord John, and erected, it is said, at an expense of about £5000. It is supplied with water from a lake in the hills some 3 miles away, and the imagination must try and picture the brilliancy of the scene when the various ideal mermaids and sea nymphs commence the play of their various hydrants in the rising or departing sunny glow. Before leaving we were privileged to see the shell-house—certainly the most remarkable sight observed. On our way we had to pass two monster allegorical bronze figures, that serve as sentinels—wolf dogs in deadly grips with the wild boar and Irish wolf. The shell-house is so-called from having innúmerable shells, principally marine ones, embedded in the cement that lines the interior. The height is about 20 feet, and is dimly lit from small windows above. In the centre is the statue, life-size, in pure white marble, of Kathleen, Countess of Tyrone, the fair lady that built this in 260 days, exactly 130 years ago. In hurriedly closing, you must allow me to acknowledge the courtesy we received, especially from Mr. and Mrs. Fairbairn.
W. J. Murphy, Clonmel.

FRUIT NOTES.

Strawberries. — In the interesting notes on varieties of Strawberries grown at Mentmore (p. 107) the writer states that Triomphe de Paris, President de la Cour, and James Veitch are varieties of no particular merit. I cannot say that I agree with the writer in his condemnation of these varieties, for with me, on a light soil, this season, all have turned out well. It is true Triomphe de Paris is not a prolific variety, but under good cultivation it yields very large and good-flavoured fruit. I had rows planted this last spring side by side of President de la Cour, Vicomtesse Héricart de Thury, and Pioneer. The first-named yielded a prolific crop of very fine fruit. With me this is a strong grower, as well as a good bearer. I have a two-year-old plantation on a heavier and cooler soil which even exceeded the latter in fruitfulness and quality. I forced a hundred plants of this variety this last season, and found it an excellent variety for the purpose. I have potted off a much larger quantity this season. As regards Pioneer, I am not very favourably impressed with its outdoor qualities, but I know a friend near me who forces it on an extensive scale, and judging from what I saw of the plants when in bearing, I consider it an excellent variety for forcing. Vicomtesse Héricart de Thury comes in the earliest of all the varieties I possess, but does not produce very fine fruit, or in quantity, on our light soil. The Countess, too, is a shy bearer. Loxford Hall Seedling is decidedly the finest late Strawberry we possess. This bore very well, although planted late this spring, and on light soil, but then I mulch liberally with well-decayed manure, and give abundance of water in dry weather. I am glad to see that our old varieties, Sir Joseph Paxton, Sir Charles Napier, and Bicton Pine, come in for their well-deserved share of praise. These good old sorts will undoubtedly hold their own against new-comers for some time yet. Before closing these notes I must not omit to mention that grand improvement on British Queen, Dr. Hogg, a much hardier and more prolific variety than the former. The alpine (red and white) Strawberries are not grown so extensively as they ought to be. We grow these on a large scale, and with very little trouble can produce a dish of Strawberries daily from the latter end of May until November. It is a most prolific Strawberry, and can be grown on banks, or any spare corners, and their tiny

fruits will be appreciated when their larger brethren have ceased to yield. *T. W. S.*

Pear Grand Soleil.—This is figured in the last number of the *Bulletin d'Arboriculture*. It is a first-class Pear, ripening in November, of medium size, regularly pyriform, with a short stalk set in a shallow basin. Skin light reddish-brown, flesh white, melting, perfumed, slightly acid.

Alexander Peach. — Having had for the last three years a tree of Alexander, and one of Hales' Early, growing in a cold Peach-house under exactly the same conditions, I think I may confidently affirm that not only is Alexander an excellent Peach, as all will agree, but that it is distinct from Hales' Early in several points. First and foremost it is fully ten days earlier than Hales' Early, and each year there has been the same difference; secondly, the fruit of Alexander is larger, and with a brilliant red on the sunny side, while Hales' Early deepens to purple when fully exposed. Both are slightly clingstone, and both excellent in juiciness and flavour. *E. H. Woodhall.*

Home Correspondence.

The Wordsley Wonder Pea.—This early blue wrinkled marrow Pea was sent out during the present year by the Messrs. Webb & Sons, of Stourbridge. It is a robust growing variety, and, being of a free branching habit, the seed should be sown thinly in the rows so that the haulms, from 2½ to 3½ feet high, according to soil and weather, may have proper room to develope themselves and to fill the handsome curvilinearly shaped pods with which they are heavily cropped, and which contain from nine to twelve large Peas, each of good colour and the finest flavour. In short, this is a Pea that is likely to be extensively grown when it becomes better known, especially by market growers, on account of its dwarf habit, great productiveness, and good constitution. I shall try it with the earliest varieties next year, and, all being well, report the result in the columns of the *Gardeners' Chronicle*. *H. W. Ward, Longford Castle.*

Double Ivy-leaved Pelargoniums. — While fully agreeing, from a few years' experience—indeed there were none, I believe, five years ago—with all you urge in commendation of these (p. 146), permit me to add at least one that I consider a greater acquisition than any you name—I mean Comtesse Horace de Choiseul, raised if I remember aright by M. Lemoine, and issued in this country about three years ago from the well-known "Home for Flowers." I prefer it to any other as a basket plant, as the colour is a warm rose, with a brilliant satiny surface to the petals. If well cared for they are enormously large in the trusses. I have not seen them yet, but do you not think the effect would be remarkable to plant them out and train them up conservatory pillars? The Comte, same name, makes a desirable pot plant also. *W. J. Murphy, Clonmel.*

Charcoal Kilns.—In answer to the enquiry of a correspondent about charcoal making, we offer two illustrations that show a method of manufacture differing from that usually adopted, which is that of burning on the bare ground, and covering with soil or sods to exclude the air. These kilns are made of brick, one course being sufficient, bands of iron or timber framework being added to strengthen the brickwork with greater economy. The usual style is conical, and the size is 24 feet in diameter, with an equal height, holding about 40 cords of wood. The difference in price is 1½*d.* per bushel in favour of these kilns as compared with the usual mounds, the burner being furnished with the use of the kilns, and the timber standing, the kiln burning costing 2½*d.*, and the other 3½*d.* The kilns must be lined to about half-way up with firebrick, the cost of which will vary with the locality, but will be about £200, and as 40 to 50 bushels of coal have been made per cord the extra yield on good charcoal and the lessening of the cost of making soon covers any extra outlay on the cost of the kilns. The wall of the kiln (fig. 35) is carried up nearly straight for 6 feet when it is drawn in, so as to become bluntly conical. Upon the top a plate of iron is fastened in the manner of the keystone of an arch, and bands of iron are passed round the kiln and drawn tight with screw bolts and nuts to strengthen it. Double doors of sheet-iron are made at the bottom and near the tops, by which it is either filled or emptied, and a few air-holes (B), which may be stopped with loose bricks, left in the bottom. The second figure (fig. 36) shows a kiln of another shape made to burn 3000 bushels of charcoal, or about 80 cords of wood. The shape is a parallelogram, having an arched roof, and it is strengthened by a framework of timber 10 inches square. As the pressure of the gas is sometimes very great, the walls must be built a brick and a half thick to prevent their bursting. The usual size is 16 feet wide and high, and 40 feet in length, outside measure. The time occupied in filling, burning, and emptying a small cone is about three

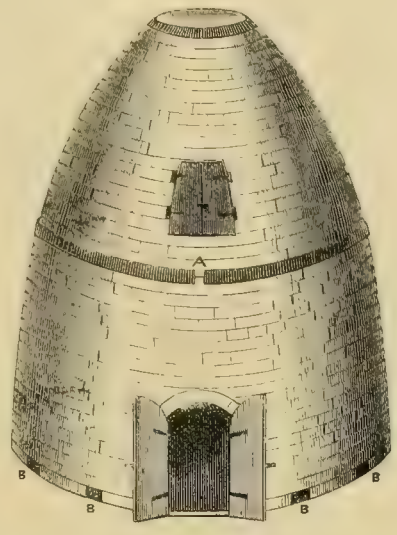


Fig. 35.—Kiln for burning charcoal.

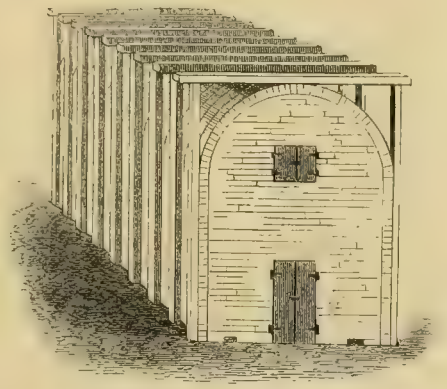


Fig. 36.—Kiln for burning charcoal.

weeks, and four weeks is required for the larger ones.

Postal Box.—Our illustrations (figs. 37, 38) show a cheap and efficient style of box in use in Germany.



Fig. 37 — Postal box, closed.

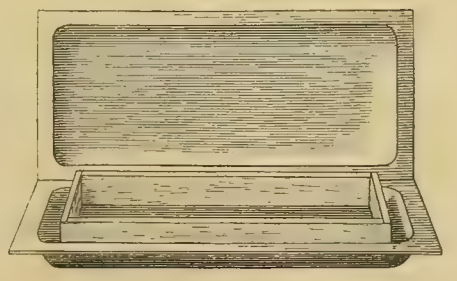


Fig. 38 — Postal box, open.

It consists simply of two pieces of cardboard, each moulded, by immersion in hot water, into a dish-like form, and strengthened in the interior by four strips of wood fastened together so as to form a loose frame. The plant is placed within the loose frame, and the shallow dish-like boards form the covers, which are kept in place by string. *X.*

The Fruit Crops.—These are again a miserable failure when compared to the beautiful and plenteous bloom we had in all our fruit tree departments. Apricots had a splendid bloom, but even with careful protection are with us a failure, and so also in the neighbourhood. Plums, after so promising a bloom, are, both on walls and standards, a complete failure. The leaves and shoots were for a long time crumpled up, as if a hot singeing blast had passed over them, and require a considerable amount of hand labour to free them, so that they may have a chance of forming growth and fruit-buds for next year. The earlier varieties of Cherries all shared the same fate; Morellos, being later, are better, or were more fortunate in passing through or between the successive devastating waves of cold. Pears, to use a sailor's phrase, were swept away clean by the board. Apples evidently had the advantage of a comparative lull in the storm, but they, too, had a rough time of it, as only the more hardy varieties have succeeded in establishing anything like a crop. Small fruits, such as black and red Currants and Gooseberries, are thin, but they are of very good quality. The earlier blossoms of Raspberries were nipped, so that in some instances the fruit was gathered from auxiliary blooming. Strawberries fortunately fared better, and where the beds were well watered and mulched—with tan or other material—before the dry weather set in, were gathered in great abundance. Quantities of jam were made, and I hope every child, during autumn and winter, will have bread and Strawberry jam without stint. It was Dr. Butler, or, if not he, some one else, who said of Strawberries, "Doubtless God could have made a better berry, but doubtless God never did." The season is a favourable one for all kinds of vegetables—Peas, Beans, Potatos, Cabbage, &c., in great and rich profusion; Lettuce in abundance, and crisp and cool as "cat ice" on a frosty morning. We are now amongst our fruit trees, tying, thinning, pinching, &c., preparatory for another year; for although we have for the last few years been very much disappointed, still like true Britons we are not yet either dismayed or disheartened—

> "For fruit tree battle once begun,
> Bequeathed from skilful sire to son,
> Though baffled oft is sometimes won."

Wm. Miller, Coombe Abbey Gardens, July 28.

Potato Disease.—The hot, dry weather of the past week appears to have once more quite arrested the growth of the Potato fungus. I have again visited the South Essex localities near the Thurrocks, and no trace of the mildew is to be seen. I have also gone over the South Bedfordshire positions again, and not a mildewed leaf is to be met with. In the bad position near Dunstable, where the crops seemed in a fair way to utter destruction, the growth of the mildew has been quite stopped, the old disease patches on the leaves have dried up and fallen to the ground. A gardener to whom I spoke, correctly said that the disease had not had time during the few damp days of July to reach the tubers from the leaves before the hot dry weather again put a stop to its growth. Everything once more bids fair for a grand Potato harvest. Even the damp white mists of morning and evening are absent from the positions north and east of Middlesex. Last January (see *Gardeners' Chronicle*, January 26, 1884, p. 121) I sent you some Magnum Bonum Potatos, perfectly sound outside, but full of disease patches inside. The sharpest eye could not detect any trace of disease in the skin or bark. How could the disease have got in except through the haulm? The examples (a few out of many) were forwarded by one of the largest firms of plant merchants in Britain. One of the diseased examples I halved and planted in my garden. The two halves have made fine plants, each a yard across with no trace of disease. The hybernating mycelium has not at present "gone up," no doubt it died suddenly. *W. G. Smith.*

—— Ten days ago I had one half of my crop dug up, the disease having quite destroyed the growth, and in some few places penetrated to the tubers; since then I have had the remainder dug up under similar conditions. Last season I was able to keep it in check for a few days by carefully picking off the few spots on the leaves, but this season, with the rapid change of extreme drought to the hot genial thunder showers, the development of the disease was so rapid that nothing could be done to check it. The crop was good, and quantity all that could be desired. The disease is quite prevalent around this part, particularly amongst the early kinds. *J. Tyerman, Penlee House, Tregonev, Cornwall, July 30.*

Cryptogamic Society of Scotland. — The tenth annual Conference will be held at Kelso on September 3, 4, and 5, 1884. Fellows who have papers to read at the Conference are requested to communicate with the Rev. Dr. Stevenson, Glamis, Forfar.

REPORTS ON THE FRUIT CROP, 1884.

(*Continued from p. 140.*)

SCOTLAND.

BANFF. — Apples and Pears are both generally deficient in quantity, and what fruit there is is not first-class. The failure is no doubt owing to the crop being much too heavy last year, combined with an absence of sun during the summer months, which left wood and fruit-buds imperfectly ripened at the fall of the leaf. Plums are good on sorts which did not bear heavy crops last year. Victoria and Damsons are the worst, Coe's Golden Drop, Gages, Jefferson, Goliath, and Early Prolific are all plentiful. Apricots are a large crop, clean and fine fruit. Peaches and Nectarines are a full crop on some trees, growth healthy and strong. Cherries of all kinds very good. Bush fruits and Strawberries are all plentiful. *J. Webster, Gordon Castle.*

CLACKMANNAN.—The fruit crops in this district (as you may judge from my report) are inferior to what they have been for the past two or three seasons. During the spring months the display of blossom on the wall trees and standards looked remarkably well, and had every appearance of a plentiful return of fruit, but during the setting period most of the flowers fell to the ground, and this accounts for our unfavourable report. Small fruits, on the whole, are an average crop. Strawberries are a splendid return. *Thomas Ormiston, Alloa Park.*

EAST LOTHIAN.—The only Apples bearing a full crop this season are Lord Suffield, Keswick Codlin, Warner's King, Gloria Mundi, Alfriston, King of Pippins, and Oslin; and in Pears—Jargonelle, Beurré Rance, Easter Beurré, Louise Bonne of Jersey, and Gansel's Bergamotte on walls with west aspect. Small fruits have been long in ripening, and with showery weather now are difficult to gather dry for preserving; Raspberries especially are an abundant crop. *W. McKelvie, Broxmouth Gardens, Dunbar.*

INVERNESS.—Owing to the wet autumn and mild winter which we had here, the soft wood of our wall trees—Peaches, Plums, Apricots, and Pears—did not ripen well; however, the early blossom gave promise of an exceptionally good crop, which we endeavoured to protect by canvas, with small success, owing to the easterly winds to which they were exposed, and several nights of hard frost coming on during the months of May and June, with a scorching sun by day, which soon reduced our prospects of a wall crop to its present standard. Our Apple trees were fairly well covered with blossom, but the May and June frosts soon thinned them. Cherries were well represented, and looked as if they had survived the frosty element, but the fruit when about half formed began rapidly to fall. Small fruit suffered very little by frost, their most deadly enemies being greenfly and caterpillar. Strawberries present a very good appearance, but owing to wet weather prevailing here lately they are somewhat hard and deficient in flavour. *Angus Macdonald, Balmacacan.*

MID LOTHIAN.—Fruit trees generally flowered freely and set good crops, but the heat and long drought of June, followed by the heavy rains of the last three weeks, caused great numbers of the young fruit to drop off, leaving only a thin crop in most cases. Insect attack was rather severe in the hot weather, and helped to thin the crop in many orchards and gardens. The best crops of Apples are on the following sorts:—Warner's King, Lord Suffield, Hawthorden, Cellini, King of the Pippins, and Cox's Orange Pippin. Pears: Louise Bonne of Jersey, Marie Louise, Easter Beurré, and Hessle. Small fruits are a fine crop, but Strawberries have been much spoilt with the heavy rains of the past three weeks. Gooseberries, Raspberries, and Currants are abundant and fine, and clear of insects. Peaches and Nectarines on open walls are a better crop than we have had for many years, if the weather will only keep warm enough to ripen them. *Malcolm Dunn, Dalkeith.*

ROXBURGH. — With a few exceptions there was never a better promise of the fruit crops than this season, the trees being covered with an abundant healthy bloom. I think the failure of Plums, Pears, and Peaches must be attributed to the cutting easterly winds and sharp frosts which prevailed during the flowering period. Here, and in a few other well sheltered places in the county, there is an average crop of Apples and Plums. *John Galloway, Minto Gardens, Hawick.*

ENGLAND.—NORTHERN COUNTIES.

NORTHUMBERLAND.—Perhaps owing to the frost we had in the end of April, fruit crops in this neighbourhood are smaller than they would otherwise have been, wall fruit especially, with the exception of Cherries, which are very abundant and good. Pears are nearly a complete failure. *Thomas Bowie, Chillingham Castle.*

DURHAM.—Apples are a thin crop, but clean, although small. Pears are likewise thin, and if a good autumn do not favour us they will be a very second-rate lot. Plums are thin and poor; Cherries are good and represent a fair crop; Peaches, Nectarines, and Apricots are very poor indeed, I might say scarcely any; Strawberries have been good, but bad to get, owing to the frequent rain. Bush fruits are thin, but upon the whole good; the spring frosts injured all. *J. Hunter, Lambton Castle.*

YORKSHIRE.—Apricots, Peaches, and Nectarines are clean, healthy, and good. Plums very variable, Victorias generally a good crop. Cherries generally a good crop, very filthy with black-fly. Apples a good crop, clean and healthy. Pears generally a very moderate crop, both on walls and standards. Strawberries abundant and large, and excellent quality. *Robert C. Kingston, Brantinghamthorpe, Brough.*

EASTERN COUNTIES.

LINCOLN.—Plums and Damsons fine bloom, but all destroyed with the late severe frosts. Apples at one time seemed like average crops, have fallen much of late, but the trees are looking much healthier than for these last three years, as also Peaches and Nectarines, and all other kinds of fruit trees have a much healthier appearance than for these last three years. *Geo. B. Tillyard, Brocklesby Park Gardens.*

NORFOLK.—The Apple crop in this district is very partial, being full and good in some places, while in others few or none are to be seen, the most abundant bearers being Blenheim Orange, Irish Peach, Dr. Harvey, and Winter Majetin. Pears generally are thin. The best appear to be Winter Nelis, Ne Plus Meuris, and Seckle. The latter in its season is surpassed by no Pear grown for flavour. Peaches, Nectarines, and Apricots were never better. Bushels were removed when small, and still the crop is heavy. The number of Plums set was enormous, but in consequence of the drought and other destructive agents the trees have been considerably lightened, and the only trees now bearing good crops are the following:—Golden Drop, Green Gage, Victoria, Pond's Seedling, Jefferson's, Orleans, and Damsons. *A. Lancaster, Holkham.*

SUFFOLK.—The fruit crop, taken altogether, is considerably under average in this neighbourhood. Apples and Pears are, I think, in most places a failure owing to the severe frosts we experienced when the trees were in bloom. Peaches and Nectarines, where protected, are carrying good crops. Small fruits, too, have been abundant and fairly good. *J. Mill, The Gardens, Rendlesham Hall.*

ESSEX.—There were very heavy crops of stone fruit here both on walls and otherwise until April 23 and 24, when the ground thermometer registered 15° and 14°.5 of frost, which also killed Apple and Pear bloom in bud, Morello Cherries only escaping, which are very good and plentiful. Plums, Peaches, and Nectarines very good in orchard-house. *James Vert, Audley End.*

HOME COUNTIES.

KENT.—The wall fruit was affected, as it so frequently is, by white frosts, and attacks of insects also injured it. Plums and Damsons are extremely few and far between. The trees were attacked directly the leaves appeared by the Aphis Pruni, which in most cases entirely prevented either the fructification of the blossoms or the growth of the tiny fruits after fructification. The exceptions are those trees which were washed with soft soap and quassia solutions, upon which some fruit will be produced. Currant bushes were also covered with Aphides, and their fruit damaged to some extent, though the quantity of the crop was not materially lessened. Some growers washed these bushes in the same manner as the Plum and Damson trees, with good effects. Nuts hang very singly, especially Filberts; Cob nuts are rather better. *Charles Whitehead, Barming House, Maidstone.*

MIDDLESEX. — One remarkable feature in the Apple crop is, that although some varieties are bearing fairly, it is not those which generally yield when there is a failure with most kinds as is the case the present season; as instance, Keswick Codlin, Manx Codlin, and Lord Suffield, are in many gardens this year bearing very little. King of the Pippins, Cox's Orange Pippin, Northern Greening, and some other favourite sorts, are this season in most gardens bearing much better than they usually do in bad Apple years. *T. Baines, Fern Cottage, Palmer's Green, N.*

HERTS.—Until April 22 fruit trees of all kinds looked unusually promising for abundant crops of fruit, Pears and Plums setting freely; but the severe frosts from the 21st to the 24th, averaging from 11° to 16°, according to altitude, blighted all our hopes. Pears and Plums were the most injured. Apples not being in flower generally are partial; but upon the whole under average. Victoria Plums also escaped in a few places. Apricots and Peaches, where protected, set freely and promise to be good. Strawberries have also been an abundant crop and good. Gooseberries and Currants heavy crops and good. Walnuts and Filberts appear plentiful everywhere. *Richard Ruffett, Panshanger.*

SURREY.—The fruit crop in this part is, with two exceptions (Pears and Plums), good and plentiful. Peaches and Nectarines are plentiful and good. Apples are excellent and good. Although last year was quite an exceptional one, this year promises to excel in quantity and quality. The varieties that do best here, taking the quality and free-bearing, are Duchess of Oldenburgh, Lord Suffield, Stirling Castle, Cox's Orange Pippin, Dumelow's Seedling, King of Pippins, Hawthornden, Court of Wick, Yorkshire Greening, Waltham Abbey Seedling, Osler's Blenheim Orange, Herefordshire Pearmain, Stone's Seedling. Pears bearing good crops are:—Easter Beurré, Ne Plus Meuris, Jersey Gratioli, Winter Nelis, Beurré de Capiaumont, Louise Bonne of Jersey, Prince Albert, Hughes' Prince of Wales, Bergamot d'Esperen. Cherries are good. Gooseberries, Currants, black and red, are very fine and heavy crops. Strawberries, although the first spikes were cut off by frost, turned out plentiful and very fine, some of the fruit turning the scale at 2½ oz. Nuts are above the average. Plums are quite a failure, not even a Damson to be found in the orchards. *A. Evans, Lythe Hill, Haslemere.*

BUCKS.—This is the worst fruit season we have had for nine years. Plums in the district are a failure. The Plums were in full bloom when the frost came, and destroyed all in this neighbourhood. The following varieties of Apples are bearing good crops on the Paradise stock:—Mr. Gladstone, Irish Peach, Scalet Nonpareil, Yellow Ingestre, Lady Henniker, Cellini, Cox's Orange Pippin, Lamb Abbey Pearmain, Margaret, Warner's King, Rymer, D. T. Fish, Worcester Pearmain, Ringer, Besspool, Henry Morny, Emperor Alexander. *J. Smith, Mentmore.*

BERKS.—Apples, Pears, Plums, and Cherries, all suffered very much from cold north-east and east winds and frosts, frequently after storms of hail and sleet, during the last week of April and beginning of May. From April 10 to May 1 there were frosts registered consecutive varying from 4° to 10°, 12° and 14°, on April 21, 22, and 23 respectively, when the blossom suffered most. Cherry and Plum trees have also been much blighted, but the wood of Apples and Pears is good and clean, with promising buds for next season. The small fruits have been very abundant, but trees and fruit suffered very much from blight until we had some thunder-storms, which cleaned them. *T. Jones, Royal Gardens, Windsor.*

SOUTHERN COUNTIES.

HANTS.—It is something fresh in my experience to have to write that Pears are a failure; but what wonder that such is the case now, when from the 20th to the end of April the minimum thermometer registered 24°, 22°, 21°, and, on one occasion, 18°, or 14° of frost? Apples being later in blossom escaped, but only partially, so many trees are fruitless. Peaches, Nectarines, and Apricots, being well covered up with canvas blinds, were saved. Plums are very thin, and the trees terribly blighted. All other fruits, Strawberries in particular, have been excellent. *W. Wildsmith, Heckfield Place.*

WILTS.—Excepting small fruits, such as Currants, Raspberries, Gooseberries, and Strawberries, and protected Peach and Apricot trees, the fruit crop of 1884 may, hereabouts at any rate, be pronounced a

failure; and judging from the information that reaches me from various quarters, this statement will be echoed through the *Gardeners' Chronicle* from most counties throughout the United Kingdom, as also will the assertion that to the frosts of April coming after the unusually mild winter is to be attributed the cause of another remarkably bad fruit year. Plums have suffered even more severely with us than Apples and Pears; of the latter, the only variety that has anything like a crop is Glou Morceau, and of the former Keswick Codlin. The following varieties of Peaches and Nectarines are carrying fairly good crops on the open walls, the trees having been protected while in flower by blinds, raised and lowered by means of ropes and pulleys, viz.:—Bellegarde, Têton de Venus, Violette Hâtive, Early Louise, Sea Eagle Peaches; and Stanwick, Elruge, and Pine-apple Nectarines. *H. W. Ward.*

Devon.—The weather during the flowering period was most favourable for the Apricot, Peaches, and Nectarines—full crops of each. The foliage on the two latter is better than usual, and every promise of a fine crop. Pears, with a very few exceptions, are a failure; Plums entirely so, the aphis being unusually troublesome. Early Cherries set a good crop, but owing to the drought were not of very good quality. Morellos shared the same fate as the Plums and Pears. A few trees on a wall more shaded from the early morning sun, and therefore later in opening their bloom, escaped, and are carrying good crops. Bush fruits have been excellent, especially Gooseberries. The mid-season Strawberry crop suffered much from drought. The rain came just in time to save the principal fruit. Ours were doubly mulched in the spring, but being on the side of a hill and very light soil our moisture soon drains away. Figs are promising. *D. C. Fowell, Powderham.*

WESTERN COUNTIES.

Worcester.—Owing to the late spring frosts the crop of Pears, both on the walls and on standard trees, is very light indeed, and many of the fruit are scarred; Plums also (with the exception of the local Pershore Plum) are very scarce indeed. Apricots are a good even crop, ripening up clean and free from gum. Apples are a very heavy crop, more particularly the Blenheim Orange, Worcester Pearmain, Hawthornden, and Red Astrachan. Bush fruits of all kinds are a very good crop, although in places subject to blight. Strawberries a very heavy crop but the late sorts much damaged by rain. *Walter Child, The Gardens, Croome Court, Severnstoke.*

—— The greatest disappointment this year is the failure of the Plum crop, which was destroyed by frost when the trees were in bloom; the trees are also so badly blighted by greenfly that I fear they will be permanently injured by it. Apricots are abundant everywhere, no frost having occurred to injure them when in bloom; when the later frosts came there was foliage enough to shelter the fruit, which had set so abundantly. Of Pears there are scarcely any, except on walls, where there is a nice sprinkling of clean fruit. All kinds of small fruits are abundant and good, also Walnuts. *A. Barker, Hindlip Hall, Worcester, July 24.*

Monmouth.—Apricots which were protected with a wide glass coping when in blossom have an abundant crop of fine fruits; the "set" was so satisfactory that thinning of the fruit had to be freely performed. Plums, Pears, and Cherries alike suffered severely from the unseasonable destructive frosts which prevailed when they were in blossom. Crops of the two former are almost a complete failure, and the Plum trees have been badly affected with aphis. Of the latter Morellos are good. Apples are partial, the trees in some orchards being heavily laden, while those in others are cropped very lightly. Blenheim Orange, King of the Pippins, and Golden Spire Pippin are amongst the varieties which carry heavy crops. The crops of all kinds of small fruits are a good average, and of good quality. Of Strawberries Loxford Hall has again proved of invaluable service for dessert late in the season. *Thomas Coomber, The Hendre.*

Cornwall.—The Apple crop in sheltered situations is a full average, but most of the orchards exposed to east and south-east winds are a total failure—the fruit in all cases clean and good. Pears are a full clean crop in most places about here. Peaches and Nectarines are a very partial crop; some trees good, and many with but few fruits. Strawberries about here have been small, but of excellent quality. *James Marton, Pencalenick, Truro.*

MIDLAND COUNTIES.

Salop.—Peaches and Nectarines are fairly good; Apricots were a mass of bloom, but the frosts thinned them sadly after setting. Plums are partial; some trees (on walls) are well loaded, others thin. Cherries are good all round. Apples, though a good crop, are falling off to an alarming extent. Pears are nearly a complete failure—Louise Bonne of Jersey is our best. Figs are a good crop; small fruits are very large crops, especially Gooseberries. *A. S. Kemp, Haughton House Farm.*

Leicester.—A dry spring, even with considerable cold, evidently favourable for Peaches and Apricots. These, with only slight protection, and in some instances without any, are producing great crops and making vigorous growth. Plums were in full bloom and very promising when severe frost, on April 22, 23, 24 (7° and 9°), completely destroyed the blossom in every stage. Pears suffered in the same way, and the crop is the worst I ever knew. Apples were later in blooming, but even undeveloped buds were killed: the crop is very partial. Gooseberries were greatly injured, and Currants were affected only in a less degree. Strawberries and Raspberries suffered from drought. *W. Ingram, Belvoir.*

Notts.—Our Apricot wall, about a quarter of a mile long, is protected by glass. The crop is remarkably fine. We gathered some ripe fruit ten days ago. Pears and Plums were almost a failure: the latter suffered much by the cold. Apples generally are a good crop and look well. Black Currants, with us, suffered more than red. Gooseberries, owing to being little forward, were thick, and escaped with little harm. *R. Carr, Welbeck.*

IRELAND.

Fermanagh.—The late frosts and cold winds about the time of setting proved very disastrous; I never saw a finer bloom all over the country. *W. Magee, Florence Court.*

Kilkenny.—In this garden and neighbourhood large fruits in general are very scarce. There was an abundance of blossom, but very few fruits set, owing to the cold frosty winds we experienced during the flowering period. Small fruits are very plentiful and good in quality. *W. Gray, Woodstock Park.*

CHANNEL ISLANDS.

Jersey.—The fruit crop this season, taken as a whole, will be a fair average, some over and some under. The dry weather in May caused the Apricots and Plums to shed their bloom. The heavy hailstorm on the 5th ult. punctured the most exposed fruits of the Apples and Pears, which, besides disfiguring them, will cause them to rot. Currants, Gooseberries, and Raspberries are a fair average crop, and Strawberries have been abundant and good, realising very fair prices. Nuts are not grown, the climate being too moist. The Eugenia Ugni, or fruiting Myrtle, produces abundance of its spicy-flavoured fruits in sheltered situations. *C. B. Saunders, St. Saviour's.*

Reports of Societies.

The Liverpool Horticultural Association: *Aug. 2 and 4.*—The annual summer show of this Society took place on the above days at Sefton Park, which, as regards proximity to the town and adaptability for the purpose, it would be difficult to surpass. This year the committee have thrown the competition open in all the classes, on which proceeding they are to be congratulated. It is often said, and not always without reason, that committees in the provinces are more mindful of fencing round that which they look upon as their own snug preserves than of securing the best display by fearless open competition in letting in outsiders, no matter from whence they come. The course adopted by the Liverpool committee is doubly commendable, composed, as it is, wholly of gardeners.

The show was very fine collectively and extensive; many of the plants staged were of unusual size and examples of skilful cultivation. In the competition for groups of plants effectively arranged, and which the committee make a leading feature of the show, an unusual amount of good taste was evinced, several of the exhibitors having evidently got the correct measure of both form and colour of the materials employed, and, what is quite as important, an eye to the due proportion of each. There was a large and good display of fruit, much the greatest portion of which was in beautiful condition—Grapes, Peaches, and Nectarines especially. Cut flowers, as always here, were in great force, sufficient being staged to in themselves make an attractive exhibition. Vegetables also were well represented, showing by their excellent condition the presence of much more moisture in the locality than has been this season experienced in the neighbourhood of London and the counties south thereof

Stove and Greenhouse Plants.—In the class for twelve stove and greenhouse plants, six flowering and six fine-foliage, Mr. Mease, gr. to C. W. Neumann, Esq., Wyncote, Allerton, took the lead with a grand collection, many of which were of immense size; the flowering examples included Allamanda Hendersoni, Clerodendron Balfourianum, Bougainvillea glabra, Ixora Williamsii, Erica Irbyana, and E. æmula, all well bloomed; with them were Croton Weismanni, C. variegatus, C. Queen Victoria, each 8 feet in diameter, with Latania borbonica, Pritchardia pacifica, and Gleichenia Mendeli, proportionate in size. Mr. Cypher, Cheltenham, who was a good 2d, had, amongst others, beautifully flowered plants of Ixora Williamsii, Stephanotis floribunda, and Allamanda grandiflora, with a fine example of Cycas circinalis, and Crotons Disraeli and Queen Victoria, smaller than his opponent's, but splendidly coloured. With ten stove and greenhouse plants, half in bloom and half fine-foliage, there was a close run between Mr. Cox, gr. to W. H. Watts, Esq., Wavertree, and Mr. Jellico, gr. to F. H. Gossage, Esq., Woolton, the former having 1st honours. In his group was a well-flowered Ixora coccinea, Erica Exquisite, and Kalosanthes Dr. E. Regel, the latter 5 feet through and profusely flowered; the foliage plants comprised Dicksonia antarctica, and an excellent example of Alocasia macrorhiza variegata, 8 feet across. Mr. Jellico had a creditable collection, both as regards the flowering and fine-leaved plants of which it was composed. Six stove and greenhouse plants in flower.—Here also the competition was close, Mr. Cypher taking 1st, with the flesh-coloured Ixora Westii, bearing some twenty heads of its charming delicately tinted flowers; I. regina, likewise beautifully bloomed; Erica obbata purpurascens, E. ampullacea Barnesii, Anthurium Scherzerianum, and Bougainvillea glabra; Mr. Mease, who came in 2d, had, in a nice half dozen, a beautiful specimen of E. Parmentieriana rosea, and Anthurium Andreanum. Four stove and greenhouse plants.—With these Mr. Cox was 1st, showing amongst others a nice specimen of Plumbago capensis. Heaths.—With four, Mr. Mease had 1st, showing nicely flowered plants of E. insignis, E. metulæflora, E. Shannonii, and E. æmula; 2d, Mr. Cypher, who with others had well bloomed examples of E. tricolor Wilsoni, and E. tricolor Holtordii.

Single Specimens.—Stove plant: 1st, Mr. Cubbon, gr. to Mrs. A. Johnson, with Allamanda Hendersoni; 2d, Mr. Cox. Greenhouse plant: 1st, Mr. Mease, with a large and well-bloomed plant of Erica ampullacea Williamsii; 2d, Mr. Gowen, gr. to J. Cunningham, Esq. Single Palm or Cycad: 1st, Mr. Hurst, gr. to W. B. Bowring, Esq., with a large and well grown plant of Phœnix rupicola; 2d, Mr. Cubbon, showing Cycas revoluta. Tree Fern: 1st, Mr. Cubbon, who had a good specimen of Dicksonia antarctica; 2d, Mr. Foster, gr. to J. Brancker, Esq., Wavertree. Single Fern (not tree variety): 1st, Mr. Evans, gr. to Mrs. Lockett, with a beautiful example of Goniophlebium subauriculatum; 2d, Mr. Johnson, gr. to Gilbert Winter Moss, Esq., Aigburth, who had Adiantum Farleyense, in good order.

Foliage Plants were present in good condition, and, having plenty of variegated kinds amongst them, there was an absence of the sombre appearance too often found in groups of this description. In the class for eight Mr. Mease was a good 1st, showing, amongst others, Croton Williamsii, C. Disraeli, and C. Prince of Wales, all large and densely clothed with finely coloured leaves; the last-named variety was quite 7 feet through, well furnished all round, half covering the pot with its elegant long drooping foliage—a grand plant. 2d, Mr. Cubbon, who also staged a handsome lot, the best of which were Croton Weismanni, Cycas revoluta, and Latania borbonica. Six fine-foliage plants.—1st, Mr. Jellico, staging in a nice group good examples of Croton Hendersoni and Alocasia metallica; 2d, Mr. Foster.

Ferns were well shown by Mr. Stephenson, gr. to Mrs. Horsfall, who was easily 1st with eight exotic varieties, his most noteworthy examples being Davallia Mooreana, D. bullata, and Gymnogramma chrysophylla; 2d, Mr. Evans. Six exotic Ferns.—1st, Mr. Gowen, with nicely grown plants of Goniophlebium subauriculatum, Pteris scaberula, Gymnogramma peruviana argyrophylla, Davallia Mooreana, Gleichenia speluncæ, and Adiantum Veitchii; 2d, Mr. Hurst. Hardy Ferns.—1st, Mr. Foster, with medium sized specimens in fresh condition, and suffiently varied in kinds; Mr. Barber, gr. to Mrs. Barnsley, who was second, also had well managed plants. Three filmy Ferns.—With these likewise Mr. Foster took 1st, showing Todea superba, T. pellucida, and Trichomanes radicans, in nice condition.

Tuberous Begonias, &c.—These were present in quantity. In the class for ten, five single and five double (prizes given by Messrs. Laing & Co., Forest Hill Nursery), Mr. Mease was 1st, Mr. Evans 2d; 3d, Mr. Johnson, gr. to J. W. Moss, Esq. Six tuberous Begonias.—1st, Mr. Stephenson; 2d, Mr. Hurst. Three tuberous Begonias.—1st, Mr. Evans; 2d, Mr. Johnson. Caladiums, very well done, were contributed by Mr. Mease, who in a well matched collection had Auguste Lemoine, Meyerbeer, and Prince Albert Edward, in beautiful condition; 2d, Mr. Leather, gr. to A. M. Anderson, Esq., also showing a fine set of plants. Six Coleus.—1st, Mr. Eaton, gr. to W. H. Shirley, Esq., with dense bushy plants; 2d, Mr. Bustard, gr. to J. Lewis, Esq. Achimenes were nicely shown, Mr. Mease being 1st, with four; Mr. Hurst 2d. Petunias, double.—1st, Mr. Stephenson, whose plants were well grown and full of flower; 2d, Mr. Bustard. Single Petunias.—1st, Mr. Hurst, with a nicely bloomed

half-dozen ; 2d, Mr. Bustard. Zonal Pelargoniums were smaller than sometimes met with, but were mostly well bloomed ; with six, Mr. Stephenson took 1st, Mr. Bustard 2d. Four zonals.—With these Mr. Stephenson was likewise 1st, staging all double varieties, very well bloomed ; 2d, Messrs. Fleming & Sons. Three zonals.—1st, Mr. Gowen ; 2d, Mr. Hurst. Fuchsias were not so well represented as usual at Liverpool, Mr. Hurst taking 1st for six, Messrs. Fleming & Sons 2d. Three Fuchsias.—1st, Mr. Cox, gr. to W. H. Watts, Esq., with nicely flowered examples, much the best shown ; 2d, Mr. Bustard. Gloxinias.—These were beautifully shown by Mr. Gowen, who had 1st for six with grandly bloomed plants of erect varieties ; 2d, Mr. Evans.

ORCHIDS.—The display of Orchids was limited, but the plants were mostly well flowered. In the class for four, Mr. Bostock, gr. to E. Harvey, Esq., took the lead with Cattleya Leopoldi, bearing three spikes, one of which was of unusual size, and highly coloured ; C. crispa, Zygopetalum Gautieri, and Saccolabium guttatum, with three fine fine spikes ; 2d, Mr. Edwards, gr. to S. Walker, Esq., who had a well flowered lot, consisting of Saccolabium Blumei majus, Dendrobium Dearei, Aërides quinquevulnerum, and Odontoglossum Roezlii. Single Orchid.—1st, Mr. Mease, with Saccolabium Blumei majus, bearing three very good spikes ; 2d, Mr. Foster, who had a moderate-sized plant of Cattleya crispa—a beautiful variety, the sepals and petals a purer white than usual, the lip large, open, and beautifully feathered with deep lilac ; Mr. Cubbon was 3d, with the deep chocolate-lipped variety of Cattleya crispa. With six Selaginellas Mr. Cubbon had 1st, Mr. Foster 2d. Cockscombs were well shown by Mr. Flanagan, who was 1st for six ; 2d, Mr. Cox.

TABLE PLANTS.—These were present in quantity, most of those shown being well adapted for the purpose, light, feathery, and not too large. With six Mr. G. Mease, gr. to W. Nichol, Esq., took the lead ; Mr. Cubbon being 2d. Hardy herbaceous plants.—With three Mr. Hurst had 1st, staging good examples of the blue and the white varieties of Campanula pyramidalis and Lilium speciosum.

GROUPS OF PLANTS, arranged for effect, filled the centre of a very large tent. In the class confined to a space of 250 feet, Messrs. R. P. Ker & Son took 1st honours with an arrangement in every way meritorious : the raised centre was thickly carpeted with Adiantum cuneatum, in the middle of which rose an elegant foliage plant, and here and there a bit of colour to relieve the green ground of the mound was introduced, the rest of the space was also covered with Adiantum, out of which, at considerable distances apart, sprung single-stemmed examples of Crotons, Dracænas, and fine-leaved Palms, with a few irregular bits of colour secured by the introduction of suitable flowering plants ; 3d, Mr. Francis. The 1st prize for a group of 150 feet went to Mr. Mease, whose exhibit was very effective, being arranged much in the way of the winning group in the larger class, the whole surface covered with Adiantum, the raised centre being furnished with a good plant of Phœnix reclinata with the pot hid, and a sufficient number of tall, light-leaved plants stood at intervals with a few flowering and variegated subjects to give the needful colour, which, as it ever should be in such arrangements, was not over-done ; Mr. Cox was a close 2d ; Mr. Cubbon, 3d, also putting up an effective group. Semicircular group occupying a space not exceeding 100 feet.—1st, Mr. Jellico.

ROSES were unusually well shown for the time of year. With forty-eight single blooms Messrs. F. & A. Dickson, Chester, were 1st, staging a fine lot of blooms ; Messrs. Perkins & Sons, Coventry, 2d ; Messrs. Mack & Son, Catterick Bridge, 3d. Twelve Teas, Noisettes, and hybrid Teas.—1st, Mr. T. B. Hall, Rock Ferry ; 2d, Messrs, Perkins & Sons. Twenty-four Roses.—1st, Mr. T. B. Hall. Twelve Roses.—1st, Mr. T. B. Hall, 2d, Mr. Brownbill, gr. to J. Hargreaves, Esq. Twelve Roses, any dark variety.—1st, Messrs. Mack, with fine Alfred Colomb; 2d, Messrs. Dickson, who had Mrs. Jowitt, in beautiful condition. Twelve Roses, any light variety.—1st, Messrs. Dickson, showing Madame Eugène Verdier; Messrs. Mack 2d, with Comtesse de Sereneye. For a box of Roses, tastefully arranged, Mr. Waterman, gr. to A. Tate, Esq., had 1st ; Mr. T. B. Hall 2d. Miscellaneous cut flowers were grandly shown, Mr. Mease taking 1st for eighteen stove and greenhouse varieties, showing beautiful bunches, lightly put together, the best of which consisted of Cattleya crispa, Miltonia spectabilis, Dipladenia amabilis, Stephanotis, Anthurium Andreanum, red and white Lapagerias, Ixora Duffii, and Disa grandiflora ; 2d, Mr. Bustard.

HARDY HERBACEOUS flowers were also well shown by Mr. E. Hardy, who was 1st, with twenty-four varieties ; 2d, Mr. Mease. Twelve bunches hardy herbaceous flowers —1st, Mr. T. Bright ; 2d, Mr. Waterman. Hand bouquets were splendidly done, Mr. Cypher taking 1st in the class for two ; Messrs. Turner, Liverpool, 2d ; Mr. J. Downes, 3d ; both showing good examples. Single bouquet.—1st, Mr. Mease ; 2d, Mr. T. Robinson. Stand of flowers.—1st, Mr. Barber ; 2d, Mr. Bustard. Bouquet of wild flowers.—1st, Mr. H. Mercer ; 2d, Messrs. Turner.

FRUIT, as already mentioned, was finely shown. With eight dishes Mr. Edmonds, Bestwood Park, Nottingham, was 1st, staging Black Hamburgh and Muscat of Alexandria Grapes, a Queen Pine, Chancellor Peaches—unusually fine ; Elruge Nectarines, White Ischia Figs, Bigarreau Cherries, and William Tillery Melon ; 2d, Mr. Ward, gr. to F. H. Oakes, Esq., Alfreton, his best dishes being Violette Hâtive Nectarines, Bellegarde Peaches, and Muscat Hamburgh Grapes ; the latter especially were in beautiful condition ; 3d, Mr. Wallace, gr. to the Rev. W. Sneyd, Keele Hall. For six dishes, Mr. Elsworthy, gr. to A. R. Gladstone, Esq., had 1st, with nice examples of Muscat of Alexandria and Black Hamburgh Grapes, Bellegarde Peaches, Brown Turkey Figs, scarlet Premier Melon, and Elruge Nectarines—the last very fine ; 2d, Mr. Mease, his best dishes being Muscat of Alexandria and Black Hamburgh Grapes and Chancellor Peaches. Two Pines.—1st, Mr. Bennet, gr. to the Hon. C. H. Wynne, with a pair of Queens. Single Pine.—1st, Mr. Bennet. Four bunches of Grapes.—Here Mr. Young, gr. to J. Evans, Esq., Prescot, was to the fore, with handsome well finished examples of Black Hamburgh, Muscat of Alexandria, Foster's Seedling, and Madresfield Court ; 2d, Mr. Middleton, gr. to R. Pilkington, Esq., who had Madresfield Court, Black Hamburgh, Muscat of Alexandria, and Buckland Sweetwater, nicely finished. Two bunches of Black Hamburghs.—1st, Mr. Ward, with medium-sized bunches of large, even, hammered berries, black as jet, and heavily bloomed ; 2d, Mr. Baker, gr. to Alderman Rayner. Two bunches of Muscat of Alexandria.—With these Mr. Middleton took the lead, having beautiful bunches full of large even berries, higher coloured than usually seen until later in the season ; 2d, Mr. Elsworthy. Two bunches of black Grapes, not Hamburghs.—1st, Mr. Ward, with Madresfield Court, in beautiful condition ; 2d, Mr. Wilson, gr. to H. Cunningham, Esq., who likewise had Madresfield Court in good order. Two bunches of white Grapes, not Muscats.—With these Mr. Chappell, gr. to G. Ledward, Esq., had 1st, with finely coloured Buckland Sweetwater ; 2d, Mr. Bennett. Dish of Peaches.—1st, Mr. Elsworthy, with Bellegarde, large and finely coloured ; 2d, Mr. Edmonds, who had fine examples of Royal George. Dish of Peaches (A).—1st, Mr. Elsworthy ; 2d, Mr. T. Bright. Dish of Nectarines.—1st, Mr. Bennett ; 2d, Mr. Hurst. Dish of Nectarines (A).—1st, Mr. Slaney, gr. to Sir T. Earl ; 2d, Mr. Bennet. One Melon, green-flesh.—1st, Mr. Hartwell, gr. to Lord Newborough. Six dishes of hardy fruit.—1st, Mr. Lambert, gr. to Col. Wingfield ; 2d, Mr. Bounds, gr. to Miss Crossfield. Basket of miscellaneous fruit, arranged for effect.—1st, Mr. Mease ; 2d, Mr. Elsworthy.

VEGETABLES were in fine condition. With a collection of twelve varieties, Mr. Almond, Maghull, took 1st ; Mr. Condon, gr. to W. Chambers, Esq., 2d. Twelve dishes of vegetables (amateurs).—1st, Mr. Lambert ; 2d, Mr. Slaney. Six dishes.—1st, Mr. S. S. Parker ; 2d, Mr. Thrupp, gr. to H. J. Walmsley, Esq.

HARDY SHRUBS AND TREES.—Messrs. Caldwell & Son, Knutsford, were the only exhibitors in the class for hardy shrubs and trees, and well deserved the Society's Gold Medal which was awarded them.

The Liverpool Horticultural Company exhibited several large groups of a highly meritorious description ; one was composed almost wholly of Roses in pots, in nice bloom ; another had something like a couple of score of the old blue and white Campanula pyramidalis, with a margin of low flowering and fine-leaved plants ; another had a centre of dark single Dahlias, with a broad border of flowering and handsome leaved plants. These groups were all effective, and received a High Commendation, as also did the following :—Messrs. F. & A. Dickson, Chester, for a miscellaneous collection of plants ; Messrs. R. P. Ker & Son, Aigburth, for a miscellaneous collection ; the Liverpool Horticultural Company, for a collection of Vines in pots ; Messrs. J. Laing & Co., Forest Hill, for a collection of double and single Begonias ; Messrs. R. Pearson & Sons, Nottingham, for zonal Pelargoniums ; Messrs. J. Dickson, Chester, for Roses and hardy flowers ; Messrs. H. Cannell & Sons, Swanley, for Pelargoniums and Begonias ; Messrs. D. Low & Sons, Manchester and Edinburgh, for horticultural erections ; Mr. J. Webster, Wavertree, for horticultural erections ; Mr. J. Bramham, for boiler and wirework ; Messrs. Knight, for horticultural sundries ; Mr. H. Cæsar, Knutsford, rustic summer-houses ; Messrs. W. Glassey & Co., Liverpool, garden utensils ; Messrs. Pearson & Co., Nottingham, horticultural erections.

The Royal Southampton Horticultural : *Aug. 2 and 4.*—This successful and flourishing Society held their great summer show of plants, fruits, vegetables, and flowers in the Society's own grounds at Westwood Park, than which it would be difficult to find a more suitable place for the holding of an exhibition of such magnitude in the vicinity of our large provincial towns. The arrangements, too, in connection with the staging of exhibits and other details of the show were all that could be desired, and the exhibition committee, from the courteous chairman, Captain Gibbs, and General Lacy, downwards, and the energetic secretary, are to be congratulated upon the success of the show, which was a highly representative one ; and the weather being everything that could be desired, and the attractions to the grounds so varied and tempting, the numerous large tents and the grounds were, therefore, crowded with visitors, who were evidently delighted with the contents of the individual tents, and in which the judges made the following awards :—

PLANTS. — In class 1, for twelve stove or greenhouse plants, six in bloom and six foliage, distinct, there were four entries. Mr. J. Cypher, nurseryman, Cheltenham, was 1st, with large, fresh, well grown plants of Croton Queen Victoria, grandly coloured and about 7 feet through ; Latania borbonica, Croton angustifolius, 6 feet through and finely coloured ; Dasylirion acrotrichum, Kentia Fosteriana, Bougainvillea glabra, a very neat plant and profusely flowered ; Kentia australis, Allamanda nobilis, Erica obbata, Ixora Williamsii, balloon form, 6 feet through and covered with large trusses of well developed flowers ; Erica Kingstoniensis a fresh, neat, and well flowered plant ; Ixora Pilgrimii, about 5 feet high and 4 feet through ; Mr. Tudgey, nurseryman, Waltham Cross, and Mr. James, nurseryman, Norwood, being respectively 2d and 3d in the order in which their names are.

In class 2, for the best groups of miscellaneous plants arranged for effect, there were nine entries, the 1st being awarded to Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, for a choice and neatly arranged group edged with Maidenhair Fern and Panicum variegatum ; 2d, Messrs. J. C. & H. Ransome, nurserymen, Hill Lane, Southampton ; 3d, Mr. Blandford, gr. to Mrs. Haselfoot, Moor Hill, West End ; 4th, Mr. J. Amys, gr. to the Hon. Mrs. Eliot Yorke, Hamble Cliff, Southampton ; 5th, Mr. J. F. Mould, nurseryman, Pewsey, Wilts, in whose group was a well flowered Eucharis amazonica ; and Highly Commended were Messrs. Jackson & Son, Kingston-on-Thames.

In class 3, for collection of fifteen miscellaneous plants, not less than six to be in bloom, there were five entries, Mr. J. F. Mould was easily 1st with a very meritorious collection, consisting of Dipladenia Brearleyana, Allamanda nobilis, Dipladenia hybrida, Allmanda Hendersoni, Gloriosa superba, a grand plant, about 4 feet through ; Bougainvillea glabra, Kalosanthes puniceus, very fresh, and well flowered ; Erica Austiniana, fresh, and profusely flowered ; Croton Sunset, Croton Queen Victoria, a plant very well coloured ; Gleichenia rupestris, 6 feet through ; Cocos revoluta, Croton Andreanus, C. majesticus, and Dracæna Goldieana ; 2d, Messrs. Jackson & Son, whose best plants were Stephanotis floribunda, Allamanda cathartica, Ixora Williamsii, Clerodendron Balfourianum, Dipladenia Brearleyana, Statice profusa, Rhynchospermum Lindeni, and Croton medio-variegatus ; 3d, Messrs. Ransome, whose best plants were Croton medio-variegatus, Bougainvillea glabra, Anthurium crystallinum, and Alsophila excelsa ; 4th, Messrs. Oakley & Watling, St. Mary's Road, Southampton.

In class 4, for fifteen miscellaneous plants, not less than six to be in flower, there were only two entries. 1st, Mr. E. Wills, with a fresh, well-grown lot of plants, of, among others, Erica Parmentierii, Alocasia Lowii, Croton Queen Victoria, Bougainvillea glabra, a Kalosanthes, Latania borbonica, Cocos Weddelliana, Dæmonorops melanochætes, Areca lutescens, Verschaffeltia splendens, Dasylirion acrotrichum, Clerodendron Balfourianum, Mr. N. Blandford being a good 2d, his best plants being Allamanda Hendersoni, Bougainvillea glabra, and Croton Disraeli, beautifully coloured.

In class 5, for nine miscellaneous plants, not less than three to be in bloom, there was only one entry ; the 1st prize being awarded to Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, for a very praiseworthy collection.

ORCHIDS.—Class 6, for a collection of Orchids, occupying a space 6 feet by 4 feet.—1st, Mr. T. Osborne, gr. to J. Buchan, Esq., Wilton House, Southampton, with a neat collection of choice varieties, including Odontoglossum Roezlii, Dendrobium Dearei, Cattleyas, &c. ; Mr. James being a good 2d, and Mr. N. Blandford 3d.

In class 7, for a collection of nursery stock, Messrs. Oakley & Watling, Mr. Kingsbury, Bevis Mount, Southampton, and Mr. G. Windebank, were awarded the prizes in the order named ; and in class 8, for the best six Begonias, in flower, distinct, the prizes were awarded to Messrs. E. Wills, J. Osborne, and J. Amys, in that order.

Class 9, for four double Begonias, distinct, Mr. Molyneux secured 1st with small but well flowered plants, and Mr. Privett 2d ; only two lots staged.

FERNS.—For six stove or greenhouse Ferns, distinct, there were only two entries, and the prizes were awarded to Mr. E. Wills, for Davallias polyantha and Mooreana (the latter 7 feet through), Microlepia hirta, Adiantum Farleyense, Dicksonia antarctica, and Adiantum cardiochlæna ; and Mr. J. Amys, in the order in which their names appear.

Class 11, for four stove or greenhouse Ferns, distinct (nurserymen), there were, like the preceding class, only two entries, Messrs. Jackson & Son securing the 1st position, with Dicksonia antarctica, Platycerium grande, Lomaria gibba, and Platycerium alcicorne major ; Mr. H. James being a good 2d ; and in a similar class (12) for gardeners Mr. W. Peel, gr. to Miss Todd, Sidford Lodge, Shirley, was 1st, followed closely by Mr. F. J. Cox, gr. to R. K. Wyndham, Esq., Corhampton House, Bishop's Waltham, and Mr. N. Blandford.

Class 13, for six distinct varieties of Fuchsias (two entries).—1st, Mr. Wills ; 2d, Mr. J. Osborne ; and in the following class, for four distinct varieties (two entries), the prizes went respectively to Mr. W. Joy, nurseryman, Shirley, and Mr. G. Busby, gr. to F. Williams, Esq., Thornhill Hall, Bitterne.

Class 15, for six Pelargoniums, zonal or nosegay, single, distinct (three entries).—1st, Mr. N. Blandford ; 2d, Mr. Wills ; and 3d, Mr. G. Windebank. For four distinct varieties Messrs. Ransome were the only exhibitors, and secured the 1st prize with an even fresh lot, as they also did in the next class for six distinct double or semi-double varieties, with L'Année Terrible, Louise Barthere, Madame Baltet, Evening, and Raispail—a grand lot ; 2d, Mr. Wills. There were only two awards made in this class. For four double or semi-double Pelargoniums Mr. Betteridge, Bassett, secured chief position, the 2d and 3d going to Mr. R. West, gr. to J. R. Wigram, Esq., Northlands, Salisbury, and Mr. W. Blandford, in that order.

Class 19, for six variegated Pelargoniums, two golden tricolor, two bronze, one silver tricolor, and one silver-

edged, distinct.—There were only two entries, and Mr. R. West and Mr. E. Wills secured the 1st and 2d positions in that order.

Class 20, for six Celosia pyramidalis. There were three entries. Mr. J. Osborne was a good 1st, Mr. E. Wills and Mr. H. W. Hunt, gr. to R. Moss, Esq., Weston Grove, Woolston, being 2d and 3d respectively.

In the class for six Achimenes, distinct, there were only two competitors, namely, Mr. Osborne and Mr. Wills, who were awarded the 1st and 2d prizes. The prizes offered for six Coleus, distinct, of pyramidal growth, were awarded in the following order:—1st, Mr. R. West; 2d, Mr. Wills; and 3d, Mr. H. W. Hunt. And for a like number of mosses, distinct, two lots were staged: the 1st prize being awarded to Mr. Wills for six grand specimens, and the 2d to Mr. Busby.

Class 25, for six plants for dinner-table decoration, distinct, and pots not to exceed 6 inches.—1st, Messrs. Jackson & Son; 2d, Mr. Wills; 3d, Mr. J. Kingsbury; 4th, Mr. J. Cox. Mr. James Cypher secured the first place for the best specimen Erica, a fresh and grandly flowered plant of E. ampullacea Barnesii; Mr. Amys 2d, with E. Ibyana; and Mr. I. Mould 3d, with E. Fairreana. Mr. N. Blandford had the best specimen Orchid (Peristeria elata), Mr. J. Osborne 2d, and Mr. H. James 3d. Mr. J. Cypher had the best fine-foliage plant, a Cordyline indivisa; 3d, Mr. Amys, with a plant of Croton interruptus, badly coloured; 2d prize withheld. In the corresponding class for the best stove or greenhouse plant in flower (four entries), Mr. Amys secured 1st honours, with a well-flowered plant of Trachelospermum jasminoides; Mr. F. J. Cox 2d, with Allamanda Hendersoni, and Mr. H. James 3d, with Rondeletia speciosa major. For a single specimen Fuchsia there were only two competitors, and a 1st and 3d award were made to Mr. Wills and Mr. W. Joy, in that order. Mr. H. W. Hunt obtained 1st place for specimen Coleus, pyramidal growth, with Butterfly; Mr. E. Wells 2d, with Mrs. G. Simpson; and Mr. R. West 3d, with Pompadour. For six hardy Ferns Mr. E. Wills was 1st; Messrs. Jackson & Son 2d, and Mrs. Waterman, 2, Bevis Place, Southampton, 3d. For six Petunias, distinct, Mr. Wills was again to the front with well-grown and finely-flowered fresh plants; Mr. J. Osborne, 2d—only two lots being staged. Mr. Windebank had the best six plants of Mignonette; Mr. T. Osborne 2d, and Mr. R. West 3d, with standards trained umbrella-fashion. For six Balsams.—1st, Mr. Osborne; 2d, Mr. Windebank; no 3d awarded. For a like number of Cockscombs Mr. H. W. Hunt was 1st, with fine combs; Mr. Osborne 2d, and Mr. Windebank 3d.

Class 38, for a new or rare plant.—Mr. T. Osborne was awarded a 1st prize for Cypripedium ciliolare.

Amateurs.—For groups of miscellaneous plants arranged for effect.—1st, Mr. H. E. Chamberlain, Fitzhugh, Southampton; 2d, Mr. E. Chamberlain; 3d, Mr. Betteridge; 4th, Charles Birch, Avenue Hotel, Southampton. For four Fuchsias there were only two entries, the 1st and 2d being awarded to Mr. Betteridge and Mr. C. Birch in that order; and for four Pelargoniums, zonal or nosegay, Mr. Betteridge was 1st, and Mr. Vokes, Leigh Road, Eastleigh, 2d; no 3d. For four Petunias, distinct, Mr. W. Betteridge was the only exhibitor, and secured the 1st place; as he also did in the next class for a like number of Begonias, in flower; Mr. C. Birch 2d, and Mr. Privett, 54, The Avenue, 3d. Mr. Hobby, Shirley Road, Southampton, secured the 1st place for a specimen greenhouse plant, in flower; Mr. Birch, 2d, and Mr. Betteridge 3d—The latter gentleman being 1st for a specimen Fuchsia, and Mr. C. Birch 2d.

Division 2: Table Decorations.—For the most elegantly dressed table with fruits and flowers (plants admissible), 1st, Mr. J. Cypher, for a very light and neat arrangement of choice flowers and fruits, including a good Pine-apple; Mr. J. R. Chard, Florist Depôt, Clapham, being a very good 2d; Mr. F. E. Chamberlain, Fitzhugh, Southampton, 3d; and Miss Bertha Flight, Conshill, Twyford, 4th. There were five entries. The first three exhibitors in the preceding class were placed in the same position for the best dressed epergne, and for the best group of three stands or vases arranged with flowers and foliage. Miss Bessie Flight secured the 1st prize for light and gracefully arranged stand, Miss Chamberlain, Alma Road, Southampton, 2d (3d withheld), and Mrs. R. H. Perkness, Shirley Road, 4th.

Cut Flowers.—For the most tastefully arranged basket of cut flowers, Mrs. Frazer, Bevis Valley, Southampton, took 1st, Miss Golding 2d, and Mrs. Perkins 3d; and in the next class, for basket of wild flowers and grasses, Miss Bessie Flight was 1st; Miss Stratton, Northcroft, Portswood, 2d; Miss Golding 3d; and Messrs. Drover, nurserymen, Fareham, 4th. Mr. Chard was 1st for the most elegant ball bouquet, with a good arrangement of choice flowers; Messrs. Keynes & Co., Castle Street Nurseries, Salisbury, being a very good 2d; Mr. Cypher, 3d, and Mr. Hillier, nurseryman, Winchester, 4th. In the corresponding class for a bridal bouquet Mr. Chard was again to the front with an admirable arrangement of choice fresh flowers, Mr. Cypher and Messrs. Cross & Steer, Ford Nursery, Salisbury, being only a few points behind. For six buttonhole bouquets, distinct, Mr. Chard repeated his success in the two preceding classes, with an arrangement that elicited great praise from visitors; 2d, Mr. S. Wakeman, gr. to Mr. Lovibond, St. Anne Street, Salisbury; the 3d and 4th going to Messrs. Drover and Mr. Hillier in that order. For twelve bunches of cut flowers, distinct, a dressing of Fern allowed, Mr. Budd, gr. to F. G. Dalgety, Esq., Lockerly Hall, Romsey, was 1st, with a choice collection of hothouse blooms; Mr. F. Thomson, gr. to W. Bring, Esq., Norman Court, Salisbury, being a good 2d; Mr. Hillier and Mr. Axford, Winchester, being 3d and 4th in that order. For twelve spikes of Gladioli there were only two competitors, viz., Mr. W. Piper, nurseryman, Parkstone, who was a good 1st; and Mr. Drover, nurseryman, Ventnor, secured the 2d place. In the next class, for twelve spikes of bulbous plants, the Rev. R. Dashwood, Romsey, was 1st; and Mr. H. Guillaume, 12, Oriental Place, Southampton, 2d—only two entries. There were six entries for twelve varieties of hardy herbaceous cut flowers: Mr. Molyneux secured 1st place, Mr. H. Guillaume 2d, and Mr. F. Thomson 3d. Mr. Molyneux was again 1st for twelve blooms of Carnations or Picotees, Mr. Guillaume 2d, and the Rev. R. Dashwood 3d. For twelve trusses, distinct, of Pelargoniums (zonal or nosegay) there were four entries, Mr. Molyneux being once more to the front, followed by Mr. Flight, Rev. R. Dashwood, and Mr. Hillier in that order. For twelve single trusses of double or semi-double Pelargoniums Mr. Molyneux was again 1st, with a very praiseworthy lot of blooms; and the Rev. R. Dashwood 2d—only two entries. In the class for twelve Dahlias, distinct, there were only two entries, the 1st prize being awarded to Messrs. Keynes, Williams & Co. for perfect blooms of Rev. J. B. M. Camm, Hon. Sidney Herbert, Lady Gladys Herbert, Mr. W. Hoskins, Joseph Ashby, Flag of Truce, George Dickson, Constancy, Henry Walton, Reporter, James Service, and Miss Browning; Mr. W. Betteridge took the 2d position. Messrs. Keynes were again 1st for twelve bunches of pompon Dahlias, three blooms of each, and not less than eight varieties, with Lady Blanche, Darkness, Pure Love, Little Bobby, Dora, Golden Gem, White Aster, Isabel, Flora McDonald, Peacemaker, and Nemesis—a very neat and fresh lot of blooms; the same celebrated firm being again 1st for twenty-four Roses, with an even fresh lot of bloom, Messrs. Cross & Steer being a good 2d, and Mr. Hillier 3d. For twelve Roses, distinct, the Rev. R. Dashwood was 1st, with a fresh even lot of blooms; Mr. Flight 2d, and Mr. West 3d. Mr. H Guillaume was 1st for twelve bunches of cut flowers, distinct; Mr. Privett 2d; the name of the 3d exhibitor did not appear, which was also the case in the next class, for six Roses, in which Mr. Betteridge and Dr. Seaton, Rutland Lodge, Bitterne, took 1st and 2d honours in that order. In the last class (for six spikes of Gladioli) in this division there was only one entry—Mr. Guillaume—who obtained a 2d award.

New Dahlias.—Messrs. Keynes, Williams & Co., of Salisbury, were awarded Certificates for two new Dahlias, named respectively Mrs. Langtry and General Gordon; the former is fawn colour, heavily edged and shaded with maroon, full size, and of fine form; the latter yellow, beautifully striped with scarlet, in the way of Parrot, but colouring much brighter, and more decided than in that variety. They are both first-rate flowers, and should be included in every grower's list.

Division 3: Fruit.—Fruit was shown largely, and for the most part well. There were four entries for the prizes given by the Southampton Tramways Company for eight distinct kinds of fruit. Mr. Howard, gr. to the Earl of Radnor, Longford Castle, Salisbury, secured 1st position with Providence Pine, Muscat of Alexandria and Black Hamburgh Grapes, Elruge Nectarines, Goshawk Peaches, Moor Park Apricots, Brown Turkey Figs, and Cox's Gem Melon; Mr. F. Thomson being a good 2d, Mr. J. Budd 3d, and Mr. Edwards, gr. to the Duke of St. Albans, Bestwood Lodge, Nottinghamshire, 4th. In the class for six kinds of fruit (Pine excluded) there were only two entries, namely, Mr. Molyneux and Mr. Jones, gr. to Lord Calthorpe, Elvetham Park, Winchester, both showing well, especially good being the 1st prize collection—Mr. Molyneux's. In the class for three bunches of black Grapes Mr. Budd was 1st, with well-finished, even-sized bunches of Black Hamburgh, followed closely by Mr. Molyneaux and Mr. H. W. Ward with Madresfield Court; and Mr. S. Saunders secured the 4th place with Black Hamburghs. Mr. Molyneux was 1st in the corresponding class for three bunches of white Grapes, with well-coloured Muscat of Alexandria; Mr. Hills, gr. to Viscount Gort, East Cowes Castle, 2d; Mr. Thomson, with immense but unripe bunches of Muscat of Alexandria, 3d; and Mr. Hillier 4th. For two bunches of black ditto there were only two lots staged—Mr. Molyneux 1st with Madresfield Court; and Mr. Axford 2d. For a like number of bunches of white Grapes there was only one exhibitor, Mr. J. Osborne, who secured a 1st with Buckland Sweetwater. In the single bunch class there were four entries, and the prizes were awarded in the following order:—Mr. Molyneux (with Madresfield Court), Mr. Ward (with the same variety), Mr. Axford, and Mr. Saunders; and in the corresponding class for whites there were a like number of entries, Mr. Molyneux, Mr. Ward, Mr. Budd, and Mr. Thomson taking the prizes in that order, with Muscat of Alexandria. There was only one Pine-apple shown, and for which a 2d prize was awarded to Mr. Ward. There were five scarlet-fleshed Melons staged—1st, Mr. W. Saunders, gr. to J. East, Esq., Longstock House, Stockbridge; 2d, Mr. Molyneux; 3d, Mr. Cox; 4th, Mr. Ward. Out of four entries in the class for a green-fleshed fruit Mr. Ward was 1st, with Hero of Lockinge; 2d, name of exhibitor not given; 3d, Mr. Budd. There were seven lots of Peaches staged—Mr. G. Windebank 1st, with Chancellor, nicely coloured; 2d, Mr. Osborne; 3d, Mr. Jones, with large Princess of Wales; and 4th, Mr. Thomson. Out of five lots of Nectarines Mr. H. W. Hunt was 1st, with Pine-apple; Mr. Budd 2d, Mr. Thomson 3d, and Mr. Ward 4th. Mr. Budd was 1st for six dishes of outdoor fruit, with Apricots, Plums, Cherries, Raspberries, and red and white Currants; Mr. Jones being a good 2d, Mr. Saunders 3d, and Mr. Thomson 4th. There were only three dishes of dessert Apples shown—1st, Mr. H. Fiford, Rounhams, near Winchester, with Early Red, Margaret, Red Streaked, Juneating, and Irish Peach; 2d, Mr. Windebank; 3d, Mr. Saunders; and in the corresponding class for kitchen Apples six lots were staged: Mr. Windebank secured 1st place, with Lord Suffield, Mère de Ménage, and Wiltshire Lass; 2d, Mr. Fiford; 3d, withheld; 4th, Mr. Saunders. For four dishes of hardy fruit, distinct (amateurs), four lots were staged—1st, name of exhibitor not given; 2d, Mr. Vokes; 3d, Mr. Betteridge.

Division 4: Vegetables.—Vegetables, as usual, were shown largely and well. Mr. Cox was 1st for the chief prize, viz., a collection of twelve distinct kinds, with Girtford Giant Runner Bean, Cream Marrows, Evolution Pea, fine Trophy Tomatos, Pragnell's Exhibition Beet, Telegraph Cucumbers, Fulham Prize Celery, White Leviathan Onion, Purple Globe Artichoke, Veitch's Autumn Giant Cauliflower, Sutton's Improved Carrot, &c.—a fine show altogether; 2d, Mr. Saunders; 3d, Mr. Molyneux; 4th, Mr. Ward. In a similar class for nine kinds, Mr. G. Busby, gr. to F. Williams, Esq., Thornhill Park, was 1st, with a clean even lot; Mr. Budd being a good 2d, Mr. Amys 3d, and Mr. H. W. Hunt 4th. For eight varieties of Potatos (four round and four kidneys) there were eight lots staged, Mr. Saunders taking 1st, with Cosmopolitan, Covent Garden Perfection, Sutton's Prizetaker, Beauty of Hebron, Adirondack, Rector of Woodstock, Fillbasket, and Reading Russet; Mr. Ward 2d, Mr. Oxford 3d, and Mr. Molyneux 4th. Mr. Saunders was 1st for twelve spring-sown Onions, with splendid examples of White Leviathan, as large as autumn-sown bulbs; 2d, Mr. Vokes; 4th, Mr. Cox; the 3d being withheld. For a like number of autumn-sown bulbs Mr. Amys took 1st, Mr. Axford 3d; 2d and 4th awards did not appear. There were twelve entries for the best brace of Cucumbers, the prizes going to Mr. Shadwell, gr. to Hay Morant, Esq, Manor House, Ringwood, for Tender and True; 2d, to Mr. Ward, for Newton Hero; and 3d, to Messrs. Drover. For the special prizes offered by Mr. Laxton, of Bedford, for the best twenty-four pods of Laxton's Evolution Pea, there were ten entries, and Mr. Saunders had the best, Mr. West the 2d best, and Mr. Fiford the 3d best; and for a like number of Laxton's "John Harrison" Bean there were nine entries, but only 1st (Mr. R. West) and 3d (Mr. Saunders) awards were made, the samples being too old and rusty. Mr. Vokes had the best twelve bulbs of Laxton's Sandy Prize Onion, Mr. Cox 2d, and Mr. Ward the 3d.

The Cottagers' Classes were well and keenly contested, and the various exhibits, especially the Potatos, Onions, cut flowers, and window plants, for the most part remarkably good.

Not For Competition.—Messrs. Lucombe, Pince & Co., of Exeter, staged a remarkably fresh and well grown lot of foliage and flowering plants, also Roses and other cut flowers, which were very neatly arranged, and attracted much attention from gardeners and amateurs alike as they entered the large plant tent. These included grandly flowered plants of Stephanotis floribunda, Allamandas nobilis and Hendersoni, Clerodendron Balfourianum, Orchids, &c. Messrs. Cross & Steer, of Salisbury, staged several boxes of their Carnations, The Governor and Louise Ashburton, in fine condition. These stands, which had a chaste effect in the lower end of the fruit and cut flower tent, elicited great praise from visitors, the ladies being loud in their commendations—as also did the Roses staged by Messrs. Keynes & Co. We must not omit mentioning that the Hants and Isle of Wight Beekeepers' Association tent, &c., formed an interesting feature of the show.

Garden Furniture in every shape—water-barrows, garden wheel-barrows, galvanised wrought-iron water-tanks, garden engines, mowing machines, garden tables, chairs, lounges in great variety, flower vases, hot-water pipes, tree protectors, wrought-iron garden arches, &c.—was exhibited immediately inside the entrance to the show grounds by Mr. Frank Shalders, of 17, High Street, Southampton, and received its own share of attention from visitors entering and leaving the grounds.

One of the features of the Southampton show was a large exhibition by Lankester & Sons, of Southampton, of hot-water boilers for horticultural and house heating. They exhibited thirty boilers, some of them ingeniously adapted to the back of ordinary fire grates, for heating houses. The principal boiler, however, was the "Lankester" horticultural boiler, of which this well known firm state that it is the most lasting, efficient, and economical boiler yet introduced for horticultural heating. It is made in eleven sizes, and heats from 150 to 2000 feet of pipe.

Peterborough Horticultural and Cottage Garden Society: *Aug.* 4.—This represented an attempt to resuscitate an old society. For many years there was a horticultural show at Peterborough, then it appeared to have got pretty much into the hands of the clergy, and it got split up into parochial organisations; by-and-bye these failed, and for a few years Peterborough was left without a show. The commencement on this occasion must be held to be decidedly satisfactory; the whole thing was worked up in about three months, and of necessity it had its aspects of imperfection. These will be improved upon another year, for there appeared to be so much public support forthcoming as to make it pretty sure the new venture was set fairly afloat. The show was held under canvas, in what is known as the Font Hill Field, a portion of the Cathedral precincts, by the permission of the Dean, and one way of access was through the Cathedral yard. Two good-sized tents sufficed to take the exhibits, and no doubt these will not

only be more numerous another year, but also larger in size, as exhibitors have a full year before them now in which to prepare.

The leading feature was the cut Roses, and here Mr. John House, of the Eastgate Nurseries, came to the fore, staging fine fresh flowers of remarkable quality for this season of the year. In the open class Mr. House was 1st with thirty-six single blooms, twenty-four ditto, and twelve ditto, the most noteworthy flowers being Baron Hausmann, Mrs. Jowett, Queen of Queens, Camille Bernardin, Jules Finger, Alfred Colomb, A. K. Williams, Marie Baumann, Baron Gonella, Mdlle. Marie Verdier, Mdlle. Eugène Verdier, Madame Victor Verdier, François Michelon, Baroness Rothschild, Harrison Weir, and La France; Messrs. W. & J. Brown, nurserymen, Stamford, were 2d. Mr. House also set up a box of cut blooms of William Allen Richardson, which created great interest. Mr. House, whose contributions greatly helped the show, was 1st with twelve Gladioli and twelve Dahlias, showing very good flowers for the first week in August. In the class for twelve single Dahlias there was a close run between Messrs. Brown and J. House, the former having the most perfect specimens, but both were very good. The best blooms of Carnations and Picotees also came from Mr. House.

One of the leading exhibitors was Mr. A. Harding, gr. to the Dowager Marchioness of Huntley, Orton Hall, Peterborough. He was 1st with the best collection of stove and greenhouse plants arranged in a group, Mr. J. House being 2d, and Mr. James Loomes, florist, Whitlesea, 3d. These groups occupied a conspicuous position down the centre of the large tent. Thus Mr. Harding had decidedly the best six foliage plants, showing good stuff of an ordinary character; Mr. Stringer, gr. to W. W. Wells, Esq., Holme, being 2d. Exotic Ferns were also a leading feature, and in the class for eight plants Mr. Harding secured 1st honours, Mr. J. House taking 2d place. In the class for six Ferns, Mr. Stringer was 1st with a very nice fresh lot; Mr. Harding coming 2d. Caladiums were small, but they were fresh and clean, and will no doubt be seen to much greater advantage next year, and the same remarks apply to Pelargoniums, Fuchsias, Gloxinias, &c. In the way of flowering plants there were some very good Balsams, and the tuberous-rooted Begonias were decidedly satisfactory and also improving plants. Mr. Harding staged twelve capital bunches of hardy flowers; one exhibitor in this class had put up single Dahlias under this heading.

Fruit was somewhat restricted in quantity. Mr. W. Cole, gr. to J. H. Hartley, Esq., Thorpe, had the best two bunches of Grapes, showing Black Hamburgh—Mr. J. Razzal, gr. to the Lord Bishop of Peterborough, being 2d, with some well-coloured Alicantes. Mr. Harding was 2d for white Muscats that were unripe. Mr. J. House had the best collection of fruits; Mr. W. Clark, The Gardens, Thorpe Hall, being 2d. In the way of hardy fruits, Lord Suffield and Potts' Seedling were well shown as culinary, and the red Juneating as dessert Apples. There were some excellent Jargonelle Pears, Bon Chrétien and Doyenné d'Ete being also shown. Some very fine Apricots were staged.

Mr. G. Rogers, Whittlesea, had the best collection of vegetables, Mr. Harding being 2d. In all the vegetable classes—open, amateurs, and cottagers—good vegetables were shown, but it would be a decided improvement if the Potatos were shown washed. Lye's Favourite, a coloured round, appears to do well in this locality; and very fine Myatt's Ashleaf were exhibited. Schoolmaster turns out well in this locality.

There were classes for bouquets, table decorations, buttonholes, &c., in which the competitors were ladies. There was also a class in which some excellent honey was shown, and a large and interesting contribution in this way was made by Mr. J. Howard, a local bee-master of some repute. Messrs. J. Laing & Co., Stanstead Park Nursery, sent a stand of cut blooms of very fine Begonias; while Mr. T. Cook, a local seedsman, set up a collection of garden appliances, flowers, &c., that was highly commended. There was a large attendance, and the character of the weather was all that could be desired.

Buckingham Horticultural: *July* 29.—This Society is one of the oldest in the kingdom, having, we understand, been established some fifty-five years, and held exhibitions uninterruptedly during that time. On the present occasion the display in the various classes was quite equal to the average in quantity, and in most cases the exhibits were of a superior character. The show was held in the grounds belonging to G. R. Ellis, Esq., which are nicely situated, and convenient to the town—a matter of no slight importance, as the public, although they enjoy the handsome flowers and fine fruit, do not usually like to travel far to see them.

In the open class for twelve ornamental plants, the prizes given by the Hon. J. G. Hubbard, M.P., and Lieut.-Colonel Morgan, there was only one competitor—Mr. Miller, gr. to R. Loder, Esq., Whittlebury, who was 1st with a creditable collection, the best of which were Croton majesticus, C. angustifolius, nicely coloured; Latania borbonica, and Areca sapida, all large and in nice condition. Six ornamental plants.—1st, Mr. Hickinbottom, gr. to A. Byass, Esq., with a moderate-sized half-dozen, containing Latania borbonica and Seaforthia elegans, two serviceable Palms for decorative purposes. Single foliage plant.—1st, Mr. Haskins, who had Pandanus Veitchii in good condition; 2d, Mr. T. P. Willis.

In the class for a group of plants arranged for effect there was only one exhibitor—Mr. Haskins, gr. to the Duke of Buckingham, Stowe, who had 1st with a pretty lot of plants very nicely arranged and well chosen as to both form and colour.

Six stove and greenhouse plants in bloom. Here Mr. Miller took the lead with a group, in which was Allamanda Schottii, large and well flowered. Single stove or greenhouse plant.—1st, Mr. Miller, with an Allamanda.

Ferns were well shown, in mostly moderate-sized plants and fresh as to condition. In the open class for six Mr. Miller was again 1st, with well grown plants, the best of which were Asplenium nidus-avis, Adiantum Farleyense, and Woodwardia radicans; 2d, Mr. T. P. Willis.

In the division confined to members of the Society, the 1st prize for six stove and greenhouse plants in flower was awarded to Mr. Miller, for the best collection in the show. Amongst them was a beautifully bloomed Dipladenia amabilis, a well grown specimen, with large flowers and fine healthy foliage; Bougainvillea glabra, and Allamanda Schottii. Single stove or greenhouse plant.—1st, Mr. Miller; 2d, Mr. J. de Fraine. Ferns in this division also were well shown, Mr. Miller here likewise having 1st honours, with a fresh, well grown half dozen, in which was Davallia Mooreana, Adiantum Farleyense, and Lygodium scandens, the latter trained in the form of a cylinder; 2d, Mr. T. P. Willis. Single foliage plant.—1st, Mr. Hickinbottom, with a clean, well managed example of Latania borbonica. Six tuberous Begonias.—1st, Mr. Thorpe. Four Fuchsias.—With these Mr. Hickinbottom took the lead, having moderate-sized examples; 2d, Mr. Thorpe. Six zonal Pelargoniums.—In this class Mr. J. de Fraine had 1st, Mr. Thorpe 2d.

CUT FLOWERS.—Of these there was a large display, forming one of the principal features of the show. In the open class for twelve bunches Mr. Haskins was 1st, showing a good collection; 2d, Mr. W. S. Miller. Twelve bunches of cut flowers (members of the Society only).—Here Mr. Swann, gr. to Lord Penrhyn, Wicken Park, took 1st, with a nicely arranged collection; Mr. Haskins being a close 2d. Six bunches hardy herbaceous flowers.—1st, Mr. Haskins; 2d, Mr. Anstiss. Roses were only moderate, taken as a whole, but in the class for twenty-four varieties, three blooms of each, Mr. Mattock, New Headington Nurseries, had 1st honours, with, for the advanced time, a very good stand; 2d, Mr. Ridge. Twelve single blooms.—In this class also Mr. Mattock took the lead, staging a nice lot of flowers; 2d, Mr. Ridge. Tea varieties were beautifully shown by Mr. Mattock, who was 1st with twelve. Twenty-four varieties of Pelargoniums.—1st, Mr. Mattock; 2d, Mr. Tailby. Twelve single Dahlias.—1st, Mr. Mattock; 2d, Mr. Haskins.

Mr. Haskins was the only competitor in the class for a dinner-table laid out with fruit and flowers, or with flowers alone, and well deserved the 1st prize awarded him. The arrangement was remarkable for its simple elegance, so different from the overdone affairs often met with. Comparatively few flowers were used, and these were placed thinly amongst a groundwork of Ferns for the base of the centre stand, and around the two small Palms used right and left; small specimen glasses, with a spray of Fern and a small flower or two each completed the arrangement. Mr. Haskins was equally successful with a bouquet, staging a nice example, principally composed of white flowers, with a little blue and pink; 2d, Mr. Anstiss. Nine buttonhole bouquets.—Here, again, Mr. Haskins took the lead with a very pretty lot; Mr. Tailby was a good 2d.

FRUIT was staged in moderate quantity and fair condition, but some of the Grapes were unripe. In the open class for eight dishes Mr. Willis was 1st, showing a nice collection, the best of which were Grapes, Peaches, Nectarines, and a Melon; 2d, Mr. Price, gr. to the Hon. Percy Barrington, Westbury Manor, in whose exhibit the Peaches and Nectarines were very good. Eight dishes of fruit, confined to members of the Society only.—1st, Mr. J. de Fraine, with a creditable lot, containing Black Hamburgh Grapes, Peaches, Nectarines, and a Melon; 2d, Mr. Humphreys, gr. to Colonel Drummond. Two bunches of black Grapes.—1st, Mr. Price, who had medium-sized, very well coloured fruit, a little rubbed in carriage; 2d, Mr. Miller. Two bunches of white Grapes.—1st, Mr. Richardson. Dish of Peaches.—1st, Mr. Price, with fine, fully ripe fruit; 2d, Mr. Willis. Dish of Nectarines.—With these Mr. Price was also 1st, staging large handsome fruit; 2d, Mr. de Fraine. Dish of Apricots.—1st, Mr. Price; 2d, Mr. Sturdy. Cherries, 1st, Mr. W. C. Pierce; 2d, Mr. Holton. Strawberries.—1st, Mr. Swann; 2d, Mr. Humphreys. Melon.—1st, Mr. Price; 2d, Mr. A. C. Rogers.

Farnham Royal: *July* 31.—Held in a small field in the charming rural Buckinghamshire village which gives it its name, and in glorious weather, this originally established cottage gardeners' society has now taken a wider field of operations, and offers prizes not only to local gardeners, but also to growers for the neighbouring markets, so that the sympathy of most of the gardening classes is enlisted. An odd feature for a society under special clerical patronage was the introduction of a special enclosure for dancing in the evening, and many swains and lasses, in the presence of their admiring, perhaps envious elders, tripped it gaily on the light fantastic toe. The flower show is, in fact, a sort of local *fête*, and is thus made to promote the happiness of rich and poor together. A roomy tent, devoted almost exclusively to the gardeners' classes, was made exceedingly gay by means of nearly a dozen pretty plant groups of divers forms and attractiveness, the best of which came from Mr. Finlayson, gr. to L. S. Hall, Esq., Farnham Chase. This was a pretty and tastefully arranged group, consisting of the customary plants. Mr. Lirt, gr. to S. L. Price, Esq., Farnham Royal, was 2d; and Mr. J. Hussey, gr. to Lady Paulet, of the same place, was equal 3d, with Mr. Collings, gr. to E. R. Arden, Esq., all having nice collections. A group exhibited by Mr. Powell, gr. to Montague Williams, Esq, also of Farnham Royal, was Highly Commended.

Mr. Finlayson took the 1st prize for a collection of fruit with black and white Grapes, fine Walburton Admirable Peaches, Elruge Nectarines, High Cross Hybrid Melon, and other fruits; Mr. Powell was 2d with black and white Cherries, fine Lancashire Lad and Green Gage Gooseberries, &c. Mr. Finlayson received a well-merited commendation for a fine plant of Clerodendron fallax, superbly flowered. Mr. Mitchell was the only exhibitor in the trade growers' classes, having some beautiful hardy fruit, and also capital vegetables. He also staged a good collection of Potatos, chiefly American kinds, and whilst showing a very handsome dish of the old striped Juneating Apple, Mr. Powell had a not less handsome lot of the old and rare white Juneating Apple. Cottagers' fruits were excellent, the best six dishes, all of great merit, consisting of Raspberries, white, red and black Currants, Gooseberries, and Early Julien Apples. The best four dishes of Potatos were Prizetaker, Reading Russet, Schoolmaster, and Cosmopolitan, and the best white kidney was the latter also—a very fine sample; Ashleaf Kidney coming next. Schoolmaster was the best round, being followed by Silverskin and Reading Russet. Throughout the whole of the cottagers' classes the quality was excellent, and the competition good. Forty-three wild flower nosegays were staged by school children, and were the brightest of the kind we have seen this season. The neighbourhood of streams and ponds enabled the exhibitors to gather many rich-coloured flowers, including the beautiful rosy-flowered Lythrum Salicaria, and the better known Mullein; also sprigs of the cherry-coloured Willow Herb, yellow and blue Cornflowers, Harebells, Scabious, hardy Heaths in various forms, and many beautiful flowers, showing the locality to have no lack of Nature's floral productions. That the show was held in the midst of harvest work did not seem to detract from its popularity.

Warwick Amateurs' and Cottagers' Show: *July* 30.—This was the fourth exhibition of what is a flourishing society, and what is peculiar about it is, that only *bonâ fide* amateurs and cottage gardeners and allotment holders are permitted to exhibit, and so rigidly is the qualification of an amateur held to, that a person who is in most respects a *bonâ fide* amateur had his exhibits refused, because a few weeks ago he joined another in growing Tomatos for market.

Hitherto the exhibitions of the Society have been held in the Corn Exchange of the county town, but last year it was found quite inadequate for the purpose. A desire was expressed to hold the show in the Castle grounds, and a site was offered, but it was held by the committee to be one so generally inconvenient, that it had to be refused. The show was therefore taken to the exhibition building, a spacious erection near to the railway station—a model building in its way, being composed of wood, corrugated iron, and glass, and covering a large extent of ground. It is well adapted for exhibition purposes, save and except that the ventilation is a little defective. Long lengths of tables were placed down the buildings, an asphalted space of considerable extent in the centre being reserved for promenading and dancing in the evening. Most valuable collections of plants, not for competition, greatly helped the show. Mr. A. D. Christie, of Warwick Castle Gardens, sent some which were placed in one of the central stages. On the corresponding stage, Mr. West, gr. to T. W. Arkwright, Esq., set up an excellent lot; while Mr. R. Greenfield, gr. to Thos. Lloyd, Esq., of The Priory, and Mr. Moorhouse, gr. to G. H. Wilson, Esq., Ernscote, sent many plants that did well to place against the exterior walls, and form effective groups near the orchestra and other places. Three fine plants of Datura suaveolens, furnished by Mr. T. H. Kendall, were objects of considerable interest, and their large white flowers emitted a powerful fragrance.

The plants shown by amateurs consisted of Begonias, Fuchsias, Pelargoniums, Liliums, &c., generally nicely grown and flowered. Cut flowers, unfortunately, were placed in a part of the building where the sun's rays fell upon them, and they soon showed signs of exhaustion. There were Roses, greenhouse and hardy flowers, Dahlias, Asters, Zinnias, Stocks, Pansies, Carnations, and Picotees—the most successful exhibitor of the three last-named was Mr. Thomas Haynes, formerly of Derby, a Tulip grower of good repute a few years ago, and now the curator of the Warwick Free Library. In the garden at the rear of this building he still grows a few Tulips in addition to those named above, and not a few other things, such as Stocks, Delphiniums, &c.

Amateurs' fruit was mainly of a hardy character, and comprised Strawberries, Plums, Cherries, &c., and in their several classes there were very fine Gooseberries in considerable variety, Raspberries, Currants, &c.

VEGETABLES.—Of these there was a considerable extent, and while in most classes the keenest competition ensued, it was principally in the Potato classes that the chief battles were fought. The Potato fancy finds a congenial home at Warwick, and one of the leading growers is Mr. H. J. Banks, a prominent tradesman in the town. In the class for four varieties he was well ahead with Grampian, International Kidney, Vicar of Laleham, and Radstock Beauty. He also staged four dishes in duplicate that would have taken the 1st prize in the absence of the others. They were Woodstock Kidney, Brinkworth's Beauty (one of the Rose type), Vicar of Laleham, and Adirondack; 2d, Mr. H. J. Payton, with Queen of the Valley, Vicar of Laleham, Bresee's Prolific, and Bountiful. Mr. Banks had the best dish of White Kidney, staging International; Mr. J. W.

Glover being 2d with the same, and Mr. G. Stevens 3d, with Snowdrop. In the class for coloured kidneys, Mr. Stevens was 1st, with Mr. Bresee in excellen form; Mr. R. M. Divers being 2d, with Bountiful, and Mr. Banks 3d, with the same. Mr. Banks had the best dish of white round, staging White Emperor, which was perhaps the premier dish in the whole show; Mr. S. W. Cooke was 2d, with Sutton's First and Best. In the class for a dish of coloured round, Mr. Banks was 1st, with Reading Russet, very fine, staging also a very fine dish of Blanchard; Mr. Glover was 2d, with Vicar of Laleham, and Mr. Chaplin 3d, with Reading Russet. Mr. Fosbrooke had the best collection of six vegetables, and Mr. H. J. Banks the best four dishes of fruits.

Bouquets, table-decorations, and the like, were largely shown, and were in some instances of much merit.

Prizes were offered for collections of plants, fruits, and vegetables, shown by dealers. The 1st prize went to Mr. C. Wilson, seedsman and fruiterer, Warwick, who staged a fine collection, the fruit and vegetables being particularly good. Mr. J. Morris, seedsman, Warwick, was 2d.

The productions of cottagers were numerous, and deserving of much praise. It was stated that each year finds a keener competition, one result being that the prize-money is more equally distributed than in former years. The Banksian Medal of the Royal Horticultural Society was offered to the cottager taking the greatest number of 1st prizes, the fortunate winner being Joseph Bumford, a labouring man, who has obtained his honours only by persistent effort.

Mr. F. Perkins, nurseryman, Leamington; Mr. Wills, of the same place, Mr. J. Forbes, Hawick; Mr. R. Greenfield, of the Priory Gardens, Warwick, contributed a great quantity of cut blooms of a miscellaneous character. It is to the exertions of the last mentioned gentleman that so much of the success of the show is due,

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Massachusetts Horticultultural Society: *Boston, June* 28.—The free weekly exhibition of the Society held to-day was not as large as usual, from the fact that the annual Rose and Strawberry show occurred a few days previous. Miss S. H. Story exhibited a large collection of cut flowers, Mr. C. M. Hovey showed a seedling Syringa, five seedling Cacti, one cut specimen of Aloe mitræformis, and two specimens of Pæonias, Emile Lemoine and Florence Hovey. Mr. S. Lockwood, jun., exhibited a basket of Cherries.

July 5.—This was prize day for Delphiniums. Dr. H. P. Walcott exhibited fine spikes of these flowers, and was awarded 1st prize; Mr. B. G. Smith took the 2d prize, and he also had a large collection of other plants. Mr. C. M. Hovey showed the native Rhododendron maximum. Mr. F. Parkman exhibited seedlings of Iris Kæmpferi. Mr. E. Sheppard a fine collection of Phlox Drummondi and Sweet Williams. Mr. N. Manning, of Reading, Mass., showed a large collection of herbaceous plants, all of which were carefully named, and which, to many persons, was the most interesting collection in the hall. The following were some of the plants shown:—Lilium elegans bicolor, L. elegans Beni, L. elegans Natsutii, L. elegans Incomparable, L. elegans grandiflorum, L. elegans multiflorum grandiflorum, L. ælegans staminosum, L. elegans citrinum, L. pardalinum, L. candidum, L. concolor, L. bulbiferum, Alyssum; Malva, white and pink; Sedum Maximouetskei, Spiræa Ulmaria, S. Ulmaria foliis variegatis; Delphinium simplex, D. formosum, D. grandiflorum, D. grandiflorum cœlestinum; Achillea Millefolium roseum, A. ægypatica, A. nivea; Lathyrus latifolius, Yucca angustifolia, Polemonium cœruleum, Genista tinctoria, Aquilegia chrysantha, Centaurea calocephala, Anthemis tinctoria, yellow and white; Pentstemon barbatum var. Torreyi, P. pubescens, Heliopsis lævis, Gypsophila paniculata, Dicentra eximia, Lythrum Salicaria, Betonica officinalis, Veronica spicata, light and dark blue; Lychnis chalcedonica. B. Moore & Son made a large display of hybrid purpetual Roses, and also Mr. W. H. Spooner. Mr. H. Partridge showed black Tartarian Cherries, and Mr. S. Lockwood, gr., Coe's transparent Gage, both of which were awarded a 1st prize. The Belle de Bavay, a new variety of Plum, was shown by Mr. B. J. Smith. Mr. W. Henstis showed the Henderson Cabbage, and Mr. J. Crosby, White Portugal Onions.

July 12. — The free weekly exhibition to-day was a very good one, both fruits and flowers being well represented. David Allen, gr. to Mr. R. M. Pratt, exhibited the following Orchids:—Dendrobium Dearei, Lælia majalis, Cypripedium Swanianum, Epidendrum vitellinum, Aërides maculosum. Messrs. Hovey & Co. showed two Orchids, viz., Lælia purpurata and Vanda tricolor, as well as a small plant of the new Statice Suworowi. Mr. W. Manning, Reading, Mass., exhibited a large collection of herbaceous plants, all carefully named, among which the following were noticed:—Campanula trachelium, Lilium pardalinum, Betonica officinalis, Lathyrus latifolius, Tanacetum vulgare, T. nivulum, Lilium testaceum, Coreopsis lanceolata, Commelina rapunculoides, Centaurea calocephala, Papaver alpinum. Miss S. H. Story showed the following, all carefully named:—Gypsophila paniculata, Dianthus barbatus, Galium boreale, Helianthus multiflorus, Achillea Millefolium, Coronilla coronaria, Delphinium, Lythrum Salicaria, Spiræa sorbifolia, Lythrum latifolium, Aconitum Napellus, Coreopsis lanceolata, Spiræa Ulmaria. Mr. R. T. Jackson exhibited a large collection of alpine and other flowers, some of which were collected by him in Switzerland, among which are—Erythræa diffusa, Campanula cæspitosa, Œnothera fruticosa, and Lilium martagon var. Dalmaticum, Campanula rotundifolia, and a double variety of Lychnis chalcedonica, the last two being cultivated native plants. Mr. S. Gardener showed Hymenocallis macrostephana and five handsome specimens of Ericas, namely two of E. Juliana and three of E. tricolor major. Dr. H. P. Walcott showed six seedling Delphiniums of 1883 and 1884. Mr. Parkman made a large display of Iris Kæmpferi. Miss E. M. Harris showed cut Hollyhocks, and three other exhibitors made good displays of the same flowers including some specimens of the double Japanese varieties. *A Correspondent.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 6, 1884.

Month and Day.	Barometer		Temperature of the Air.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		Wind.		Rainfall.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 59 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
July	In.	In.	°	°	°	°	°	°				In.
31	29.99	+0.24	78.0	56.0	22.0	66.8	+4.5	59.1	77	N.W.		0.00
Aug. 1	29.87	+0.12	80.5	57.0	23.5	67.9	+5.6	59.6	83	N.W. : N.E.		0.00
2	29.78	+0.03	83.5	58.5	25.0	68.9	+6.6	57.3	65	W.		0.00
3	29.91	+0.16	73.5	54.0	19.5	62.0	−0.2	51.9	70	N.W.		0.00
4	30.07	+0.32	73.0	51.5	21.5	60.3	−1.9	49.5	66	N.W.		0.00
5	30.06	+0.31	77.0	46.0	31.0	61.4	−0.7	50.0	68	N.W. : N.E.		0.00
6	29.93	+0.19	79.0	52.0	27.0	65.0	+2.9	55.6	72	S.E.		0.00
Mean	29.94	+0.20	77.8	53.6	24.2	64.6	+2.4	54.7	72	N.W.		0.00

July 31.—Very fine day and night, occasionally overcast.
Aug. 1.—Very fine day and night.
— 2.—Very fine day and night. Lunar halo.
— 3.—Fine day, bright intervals. Fine clear night.
— 4.—Fine day and night.
— 5.—Very fine day and night.
— 6.—Very fine day and night.

LONDON: *Atmospheric Pressure.*—During the week ending August 2, the reading of the barometer decreased from 29.92 inches at the beginning of the week to 29.81 inches by 9 A.M. on the 27th, increased to 30.14 inches by 9 A.M. on the 28th, decreased to 30.08 inches by 9 A.M. on the 29th, increased to 30.21 inches by 9 A.M. on July 30, decreased to 30.19 inches by 3 P.M., and increased to 30.21 inches by midnight on the same day, decreased to 29.93 by 9 A.M. on August 2, and was 30.02 inches by the end of the week.

The mean reading of the barometer for the week was 30.07 inches, being 0.11 inch higher than last week, and 0.14 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 83°.5, on August 2; the highest on July 27 was 67°. The mean of the seven high day temperatures was 73°.9.

The lowest temperature was 52°, on July 31; on July 30 and August 2 the lowest temperature was 58°.5. The mean of the seven low night temperatures was 55°.7.

The greatest range of temperature in one day was 25°, on August 2; the smallest was 13°, on July 29 and 30. The mean of the seven daily ranges was 18°.2.

The mean temperatures were—on July 27th, 59°.7; on the 28th, 59°.4; on the 29th, 61°.6; on the 30th, 63°.5; on the 31st, 66°.8; on August 1st, 67°.9; and on August 2d, 68°.9. Of these the first three were below their average by 2°.5, 2°.8, and 0°.7 respectively; and the last four were above by 1°.2, 4°.5, 5°.6, and 6°.6, respectively.

The mean temperature of the week was 64°, being 4°.5 higher than last week, and 1°.7 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 139°.5, on August 2. The mean of the seven readings was 120°.1.

The lowest reading of a minimum thermometer with its bulb placed on grass was 44°.5, on July 27th. The mean of the seven readings was 48°.

Rain.—Rain fell on the 27th, 28th, and 29th of July, to the amount of 0.41 inch,

ENGLAND: *Temperature.*—During the week ending August 2 the highest temperatures were 83°.5, at Blackheath, 81°.5 at Nottingham, 80° at Truro and Bristol; the highest at Cambridge and Sunderland was 69°, at Brighton 74°. The general mean was 77°.2.

The lowest temperatures in the week were 44° at Cambridge and Sunderland, 46° at Hull; the lowest at Blackheath was 52°, at Liverpool 51°.7, at Plymouth and Preston 51°.5. The general mean was 49°.2.

The greatest ranges were 32°.8 at Wolverhampton, 32° at Hull, 31°.5 at Blackheath; the smallest ranges were 22°.7 at Brighton, and 25° at Cambridge and Sunderland. The general mean was 28°.

The mean of the seven high day temperatures was highest at Blackheath, 73°.9, at Truro 72°.4, at Brighton 72°; and was lowest at Cambridge and Sunderland, 63°, at Bradford 64°.6. The general mean was 68°.2.

The mean of the seven low night temperatures was highest at Brighton and Preston, 56°.5, at Liverpool 56°.4; and was lowest at Wolverhampton, 51°.8, at Cambridge and Sunderland 52°.2. The general mean was 54°.5.

The mean daily range was greatest at Blackheath, 18°.2, at Truro 18°, at Nottingham 16°.8; and was least at Bradford, 9°.3, at Preston 9°.9, at Cambridge and Sunderland 10°.8. The general mean was 13°.7.

The mean temperature was highest at Blackheath, 64°, at Brighton 62°.4, at Truro 61°.6; and was lowest at Cambridge and Sunderland, 55°.8, at Bolton 57°.5 The general mean was 59°.5.

Rain.—The largest falls were 0.90 inch, at Plymouth, 0.84 inch at Bristol, 0.50 inch at Preston; the smallest falls were 0.04 inch at Truro and Hull, 0.08 inch at Cambridge and Sunderland. The general mean fall was 0.34 inch.

SCOTLAND: *Temperature.*—During the week ending August 2 the highest temperature was 74°, at Glasow; at Aberdeen the highest was 65°.3. The general mean was 69°.6.

The lowest temperature in the week was 40°.9, at Greenock; at Leith the lowest temperature was 48°.9. The general mean was 45°.3.

The mean temperature was highest at Paisley, 59°.1, and lowest at Aberdeen, 56°. The general mean was 57°.4.

Rain.—The largest fall was 0.18 inch, at Edinburgh; and the smallest fall was 0.07 inch, at Aberdeen. The general mean fall was 0.10 inch.

JAMES GLAISHER, F.R.S.

Variorum.

SARRACENIA RUBRA, Walt., grows in sandy soil, principally on the plains habitually inundated during the months of April and May, but where the water does not exceed a few centimetres in depth. This species never exceeds 30 cent. in height, with extremely slender pitchers, the diameter of which is never more than 1½ cent.; there are many different varieties remarkable for a pretty reddish tint. *Roezl, in "La Belgique Horticole."*

THE BOWER BIRD. — Our attention was here attracted by a peculiar looking bed under a bush close by our track, and two heaps of snail-shells and bits of white limestone close outside the bed. This we at first took for a black fellow's "gunyah," or hut, but on dismounting we found it to be a bower-bird's bower, or playground. The bower was constructed of long fine grass, closely matted together, and firmly fixed to the bush above and on each side at about 2 feet from the ground, thus forming a pretty little arch. The ground inside the bower was closely carpeted with the same kind of grass, and in the centre, which was slightly hollow, there was a handfull of the green berries of Alphitonia excelsa and Carissa ovata, which evidently had not been brought there to be eaten, but through a whim of those singular birds. The bower was not above 2 feet long, and there were two neatly constructed arched entrances at one end, but only one large one at the other. One of the heaps contained 200 or 300 shells, but the other only forty or fifty. We saw no birds. *P. A. O'Shanesy on the Flora of Queensland.*

SARRACENIA PSITTACINA, Mchx., is met with in similar positions in the plains, but it shows a preference for little hillocks 15—30 cm. in height, where it is sheltered from the direct force of the inundation although its roots still enter the water. The leaves of this species grow in a horizontal direction, or even downwards, on those specimens which are seen in their natural station, hence there are pretty rose-coloured tufts which are more conspicuous because each plant bears on the average twenty to thirty leaves. The size of the pitchers is not remarkable, the largest that I have seen were scarcely 12 cent. in length by 2 cm. in diameter. I found this pretty species, too sparingly diffused over Europe, on a vast prairie burnt by fire; only a few plants remained, in all the rest the above-ground portions had become a prey to the flames, and the search for the plant was therefore surrounded by special difficulties. *Roezl, in "La Belgique Horticole."*

Obituary.

WE regret to record the death of Miss EMILY J. LEONARD, of Meriden, Ct., U.S.A., on July 16, aged forty-six, widely known for her botanical attainments and as a classical scholar and writer on political economy. She was an accomplished French, German, Latin, and Italian scholar; translated Bianqui's *Political Economy*, which is now used as a text-book in many colleges, and was also noted as an eloquent and interesting public speaker. She was born in Meriden, Ct., and began life as a school-teacher. Of late years she has devoted herself to scientific and literary studies.

—— JOHN L. GARDENER.—Also, on July 24, the death of John L. Gardener, of Brookline, Mass., U.S.A., near Boston. He was a son of the late Samuel P. Gardener, whose picturesque mansion and spacious garden, stretching back from Summer Street nearly opposite Hawley Street, were very attractive features of the Boston of forty years ago. Mr. Gardener was a graduate of Harvard College of the class 1821. He retired from business many years ago, and devoted himself to the care of his property. Mr. Gardener had a marked fondness for horticulture, and the excellence of the productions of his grounds was shown in the number of prizes awarded to him by the Massachusetts Horticultural Society, of which he was a Life Member. He was eighty years of age at the time of his death.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

*** The attention of our readers is particularly requested to the following questions, in the hope that some of them may kindly furnish suitable replies.

CAN any of our readers inform W. Reid where plants of Molospermum cicutarium and Montagnea heracleifolia can be procured? ED.

DAPHNE PONTICA.—A fine bush of this, after having occupied the same position for several years, is now dying branch by branch without obvious cause. Can any reader suggest the cause or remedy? The drought may have accelerated the death.

DEODARA WOOD.—I should feel greatly obliged if some of your numerous correspondents, would favour me with some more information respecting the wood of this tree—if imported into England from India, where it can be got, and the price? If not imported, is it possible to get it at a reasonable rate for use here in place of the immature red deal now in use in this country? Your correspondent speaks so highly of its size, durability, &c., that I am anxious to know more about it, and would be thankful to any one for information as above. *Charles F. Garry.*

PEACHES AND NECTARINES. — What good-sized Peach or Nectarine comes in next after Hales' Early, so as to fill up the interregnum of ten days between that and the next to ripen? Early Albert and Dr. Hogg I find unsatisfactory, or no earlier than Royal George and the usual run of good mid-season sorts. Golden Eagle is a fine addition to late sorts. *E. H. W.*

Answers to Correspondents.

BEGONIAS: *O. P.* Your article will appear in an early number.

BOTANICAL DRAWING: *X.* By far the best treatise is that published some years ago by Fitch in these columns, but unfortunately it has not been reproduced, except in a French version. Copy those figures, and when by practice you have obtained some dexterity of hand, draw some simple leaf from Nature, proceeding gradually to more complex things. If your object be to become a botanical draughtsman, eschew at first all attempt at what is called artistic drawing. Truth, and completeness of form, outline, and perspective, are what you must aim at specially, not suggestive picturesqueness. Accurate reproduction, not imagination, is what is required.

CARNATIONS: *E. M. E.* We cannot undertake to name florists' flowers. The same answer applies to "W. M. B."

DISEASED LARCH: *H. S. M.* From your description the trees are badly affected with the Larch aphis, Chermes abietis. We should cut them down and burn them. Properly prepared petroleum emulsion might be tried with a fire-engine, if expense were no object.

EXHIBITION RULES: *M. H.* The rule is a stringent one, but it is one that is very necessary in the interests of both judges and exhibitors, and should always be adhered to. We think members of the committee should abstain from exhibiting. Gardeners can have no special cause for complaint even if they are not readmitted till 3 P.M., as they have already seen everything early in the morning.

SEWAGE: *W. M.* Your drainage being doubtless much diluted, could be carried from its receptacle, in water-carts having a hose attached, and be applied to unfed grass-land, to the lawns, and also to strong growing crops in the kitchen garden; or it might be made to enrich compost-heaps, Vine borders, old orchard land under grass, &c. The earth (if dry) quickly deodorises all such matters, when not used in excess.

GINGER-BEER: *Tea-totaller.* Yes, decidedly, if yeast is used the fluid will contain alcohol, and even if yeast be not intentionally added, the natural process of fermentation will result in the formation of alcohol. If you wish to avoid this, buy some ginger-beer powders of the chemist. They consist of tartaric or citric acid, and of carbonate of soda, but contain no alcohol.

GRAPES DOING BADLY: *H. G. Jones.* By your own proving, the evils complained of arise from the ill-made Vine border, wherein the Vines may wander as wide and as deep as they are able into therefore poor, infertile soil, at a great distance from the surface. Replant them carefully, and make a proper border for them, and the Vines will repay you any reasonable outlay in that direction.

INSECTS: *Camjee.* The insect sent, which came out of an imported Orchid root, is the larva of a beetle (new to us) allied to the genus Cebrio. It is now full-grown, and will do no more injury to your plants. *W. —J. M.* The minute insect eggs found on the Polygonum aviculare have hatched into the very small larvæ of one of the Chrysomelidæ, or plant beetles. They are evidently those of the Chrysomela (Phædon) polygoni, Linn. *W.*

NAMES OF PLANTS: *M.* Sison Amomum.—*W. R.* Sophronites grandiflora and Oncidium concolor.—*A. O. Walker.* Mulgedium sibiricum, Odontoglossum Wallisii; the Pelargonium we fail to identify—it is probably a garden variety.—*W. M. B., Neath.* Echinops sphærocephala, the Globe Thistle.—*G. Berg-man, New York.* Oncidium concolor. — *G. L. M.* Dendrobium calceolus.

PELARGONIUM: *G. L. M.* A variegated Pelargonium, with semi-double blooms, is uncommon, and is worthy of propagation.

PICOTEE: *G. T. D. Fish.* A nice regular bloom, that would, under good cultivation by a florist, develope some superior points, and is at any rate an excellent border kind, if sufficiently robust and free-flowering.

ROSE: *East End.* We cannot undertake to name Roses. Better send to a specialist for the name.

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CATALOGUES RECEIVED.

B. S. WILLIAMS, Upper Holloway, N—Bulbs.
W. CUTBUSH & SON, Highgate, N—Bulbs.
FRED. BURVENICH PÈRE, Ghentbrugge, Belgium—Vines, Strawberries, Chrysanthemums, &c.
WAITE, NASH, HUGGINS & Co., 79, Southwark Street, S.E.—Bulbs.
W. DRUMMOND & SONS, Stirling—Bulbs.
DAMMANN & Co., Portici, Naples—Vegetable and Flower Seeds.
LOUIS VAN HOUTTE, Ghent—Bulbs.

COMMUNICATIONS RECEIVED. — H. C. G. (Figs, next week). —H. W. W.—W. H.—J. M.—Robertson Munro (too late for this week).—H. E. Ryde.—H. N. E.—J. S. B.—P, Lofoden Isles.—J R.—C. B. P.—W. J. L.—W. P. (Apples, next week).—C. M. O.—J. O'B.—Wanderer.—J. R. J.—H. E.

Markets.

COVENT GARDEN, August 7.

PRICES for soft fruit have been well maintained, and, with supplies falling off, the demand has been good. House fruit is dull. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Cherries, ½-sieve	7 0	12 0
Currants, black, per ½-sieve	3 9	..
— red, ½ sieve	3 6	4 0
Figs, per dozen	2 0	3 0
Grapes, per lb.	1 6	3 0
Lemons, per case	10 0	14 0
Melons, each	2 6	4 0
Pine-apples, Eng., lb.	3 6	4 6
— St. Michael's, each	2 0	5 0
Strawberries, per lb.	0 4	1 0
Peaches, per doz.	2 0	10 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0
Asparagus, English, per 100	4 0	8 0
Aubergines, each	0 4	..
Beans, French, lb.	0 4	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 0	..
Carrots, per bun.	0 6	..
Cauliflowers, English, dozen	4 0	6 0
Celery, per bundle	1 6	2 6
Cucumbers, each	0 6	1 0
Endive, French, per dozen	2 0	..
Garlic, per lb.	0 6	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	3 0	4 0
Lettuces, Cabbage, per dozen	1 6	..
— Cos, each	0 2	..
Marrows, each	0 3	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 0	2 0
Onions, per bunch	0 6	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 9	..
Peas, English, quart	1 6	..
Radishes, per doz.	1 6	..
Rhubarb, per bund.	0 4	0 6
Small salading, per punnet	0 4	..
Spinach, per strike	3 0	..
Tomatos, per lb.	1 0	..
Turnips, new, bun.	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £6 to £8 per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Begonias, per doz	4 0	12 0
Calceolarias, per doz.	4 0	9 0
Cockscombs, d z.	3 0	6 0
Coleus, various, doz.	3 0	6 0
Cyperus, per dozen	4 0	12 0
Dracæna term. do.	30 0	60 0
— viridis, per doz.	12 0	24 0
Erica, various, doz.	9 0	18 0
Euonymus, various, per dozen	9 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 0	7 0
Foliage Plants, various, each	2 0	10 0
Fuchsias, per doz.	4 0	12 0
Heliotrope, doz.	4 0	9 0
Hydrangea, per doz.	9 0	18 0
— paniculata, doz.	18 0	36 0
Lilium longiflorum, per dozen	24 0	36 0
— lancifolium, doz.	9 0	18 0
Marguerite Daisy, per dozen	8 0	12 0
Mignonette, per doz	4 0	6 0
Myrtles, per doz	0 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums (show), per dozen	6 0	18 0
— scarlet, per doz	3 0	9 0
Petunias, per dozen	3 0	6 0
Rhodanthes, p dozen	4 0	6 0
Spiræa, per dozen	8 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0
Arum Lilies, 12 blms.	3 0	6 0
Bouvardias, per bun.	0 9	1 0
Calceolaria, 12 sprays	0 6	1 0
Carnations, 12 bun.	2 0	6 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 0	6 0
Eschscholtzia, 12 bun	2 0	4 0
Eucharis, per doz.	4 0	6 0
Forget me-not, 12 bunches	2 0	6 0
Gardenias, 12 blms.	3 0	6 0
Gladiolus, various, 12 bunches	6 0	12 0
Heliotropes, 12 sp.	2 0	1 0
Lapageria, white, 12 blooms	2 0	3 0
— red, 12 blooms	1 0	2 0
Lavender, 12 bun.	6 0	8 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 0	4 0
Pelargoniums, per 12 sprays	0 6	1 0
Pinks, various, 12 bunches	2 0	6 0
Primula, double, bun.	1 0	1 6
Pyrethrum, 12 bun.	2 0	6 0
Rhodanthes, 12 bun.	4 0	6 0
Roses (indoor), doz	1 0	4 0
— (outdoor), 12 bun.	3 0	9 0
— coloured, doz	2 0	0 0
Stephanotis, 12 spr.	2 0	4 0
Stocks, 12 bunches	3 0	6 0
Sweet Peas, 12 bun.	1 6	4 0
Sweet Sultan, 12 bun.	2 0	4 0
Tropæolum, 12 bun.	1 6	3 0
Tuberoses, per doz.	0 6	1 0
White Jasmine, bun.	0 6	1 0

SEEDS.

LONDON: *August* 6.—The market for farm seeds to-day presented quite a holiday character. Trifolium is firm in France, but the English demand continues small. New home-grown winter Vetches are now offering, and the quality is fair. Less money is accepted for new Rape seed, but in white Mustard there is no quotable change. Sowing Rye is obtainable on moderate terms. The tendency in Canary seed is in seller's favour. Feeding Linseed without variation. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

Monday being Bank Holiday, there was no business done in Mark Lane. On Wednesday the attendance was very meagre, and the new inquiry for Wheat almost suspended: There were sellers at 1*s.* under last Friday's rates, but buyers were hardly to be found at the reduction. Some threshed-out samples of new English red and white Wheats were on offer, quality fair to fine, and weighing from 63 lb. to 65 lb. per bushel. Sales reported at 40*s.* to 42*s.* for red, and 42*s.* to 44*s.* for white, but some held above those prices. Barley, Beans and Peas ruled about steady in value, but without much doing. Maize held firmly. Oats, with large arrivals here, and large shipments advised from St. Petersburg, were the turn lower. Average prices of corn for the week ending August 2:—Wheat, 37*s.* 6*d.*; Barley, 27*s.* 6*d.*; Oats, 22*s.* 7*d.* For the corresponding period last year:—Wheat, 43*s.* 3*d.*; Barley, 30*s.* 3*d.*; Oats, 23*s.* 10*d.*

HAY.

Tuesday's Whitechapel report states that supplies were fair and trade dull, being considerably influenced by the holiday time. Quotations:—Prime old Clover, 95*s.* to 117*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 117*s.*; best meadow hay, 80*s.* to 97*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 40*s.* per load.—On Thursday there was a good supply. Trade was quiet, especially for Clover, and prices were unaltered.—The Cumberland Market report states that trade was dull, with large supplies at the following quotations:—Clover, prime old, 100*s.* to 110*s.*; second quality, 80*s.* to 95*s.*; inferior, 60*s.* to 70*s.*; hay, best old meadow, 80*s.* to 95*s.*; inferior, 60*s.* to 75*s.*; and straw, 30*s.* to 38*s.* per load.

POTATOS.

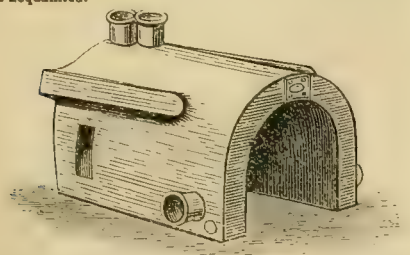
The trade has been somewhat unsteady this week, owing to holiday-making, but the following are about the average prices:—Kidneys, 80*s.* to 120*s.*; Rounds, 75*s.* to 90*s.*; Roses, 50*s.* to 70*s.*; Beauty of Hebron, 90*s.* to 100*s.*; and Early Vermont, 80*s.* per ton.

COALS.

The following are the prices current at market:—East Wylam, 15*s.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 15*s.*; Lambton, 17*s.*; Wear, 15*s.*; East Hartlepool, 16*s.* 3*d.*; South Hartlepool, 15*s.* 3*d.*; Tees, 17*s.* 6*d.*

Government Stock.—Monday being a Bank Holiday, the Stock Exchange was closed. Tuesday's closing prices for Consols were 100⅛ to 100⅜ for both delivery and the account. Wednesday's prices were as on the previous day for delivery, and 100 9/16 to 100½ for the account.—Thursday's final quotations showed a decline of 3/16 for both delivery and the account.

THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler. Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.



Letter	Length.	Will Heat of 4-in. Pipe.	Price.	*Set of Furnace Door & Fittings.
A	19 in. long	150 feet	£3 10 0	£1 0 0
B	22 in. ,,	300 ,,	4 10 0	2 5 0
C	24 in. ,,	400 ,,	5 15 0	2 7 6
D	26 in. ,,	500 ,,	6 15 0	2 10 0
E	28 in. ,,	600 ,,	8 0 0	2 13 0
F	32 in. ,,	700 ,,	9 10 0	2 18 0
G	36 in. ,,	850 ,,	10 10 0	3 5 0
H	42 in. ,,	1000 ,,	11 10 0	3 10 0
I	48 in. ,,	1250 ,,	13 10 0	3 15 0
J	54 in. ,,	1600 ,,	15 0 0	4 5 0
K	60 in. ,,	2000 ,,	17 10 0	4 15 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c

Says a Gardener of great experience :—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite when known."

Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.

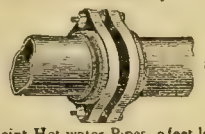
If a cheque is enclosed with order 5 per Cent. discount may be deducted if not, reference to Banker required.

LANKESTER & SONS,
Horticultural Heating Engineers, Southampton.

We send capable men to fix work in all parts of the Kingdom. Estimates given. Drawings of Patent and Special Appliances for Heating Dwelling Houses sent on application.

THOS. W. ROBINSON,
DENNIS PARK IRONWORKS, STOURBRIDGE.

The "Expansion Joint."



The Best and Quickest Made.

4-in Expansion Joint Hot-water Pipes, 9 feet long, 4*s.* 3*d.* each ; 4-in. Socket Hot-water Pipes, 9 feet long, 4*s.* 6*d.* each.
Price List on application.

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PATENT RED-RUBBER GARDEN HOSE.

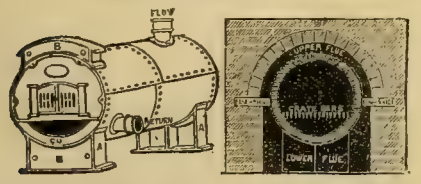
Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.

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Private Customers Supplied at Trade Prices.

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The Original and only Genuine Stevens' Trentham Rivetted Boiler.

All others are simply imitations.



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and 55, ROYAL AVENUE, BELFAST.
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14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.

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B. & SON have always a large stock in London of 20 in. by 12 in , 20 in. by 14 in., 20 in. by 16 in., 20 in. by 18 in , in 16-oz and 21-oz. ; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





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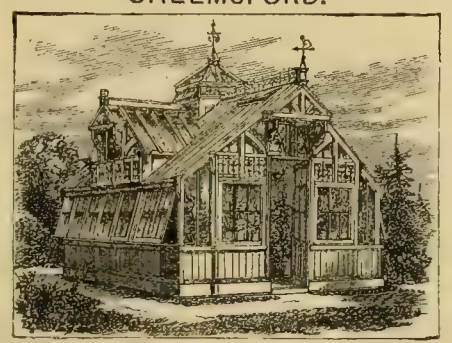
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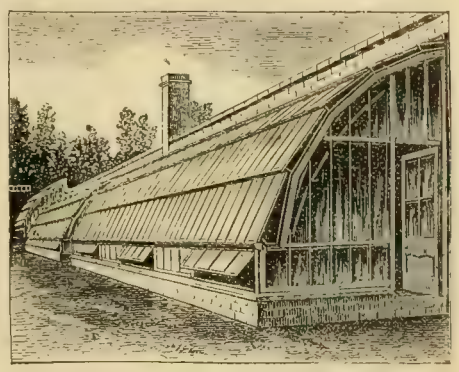
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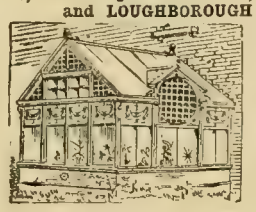
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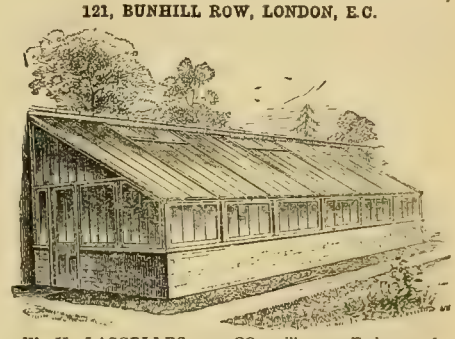
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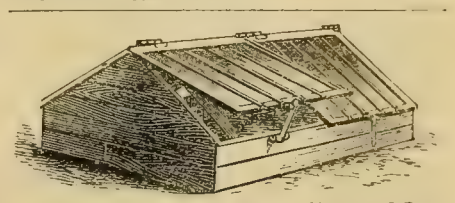


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The glass is nailed and puttied in.

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7	,,	..	..	0	4	6	18 ,,	..	..	0	10	0
8	,,	..	..	0	5	0	19 ,,	..	..	0	10	6
9	,,	..	..	0	5	6	20 ,,	..	..	0	11	0
10	,,	..	..	0	6	0	21 ,,	..	..	0	11	6
11	,,	..	..	0	6	6	22 ,,	..	..	0	12	0
12	,,	..	..	0	7	0	23 ,,	..	..	0	12	6
13	,,	..	..	0	7	6	24 ,,	..	..	0	13	0
14	,,	..	..	0	8	0	25 ,,	..	.	0	13	6

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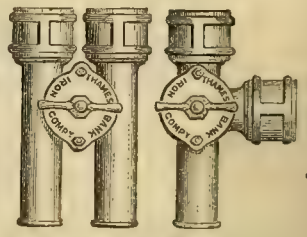
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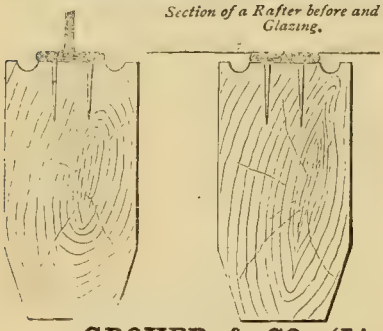
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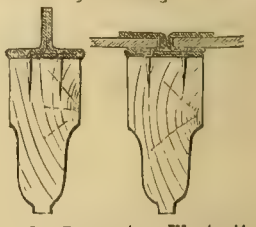
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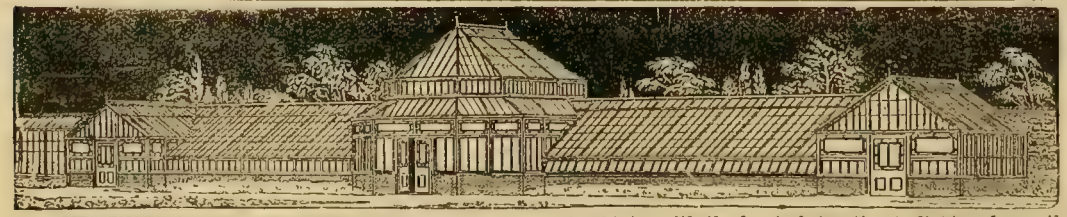
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 9, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 555.—Vol. XXII. { New Series. } SATURDAY, AUGUST 16, 1884. { Registered at the General Post-office as a Newspaper. } Price 6d. { Post-free, 6½d. }

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NOTICE to SUBSCRIBERS and OTHERS.
Post-office Orders and Postal Orders should now be made payable at
DRURY LANE.

SANDY and DISTRICT FLORAL and HORTICULTURAL SOCIETY. Open Show.
The SIXTEENTH ANNUAL EXHIBITION of FLOWERS, FRUIT, VEGETABLES, CAGE BIRDS, POULTRY, and PIGEONS, will be held at Sandy, Bedfordshire, on FRIDAY, August 29. Prizes, ONE HUNDRED AND EIGHTY POUNDS. Ten Stove and Greenhouse Plants in Flower.—1st Prize, £10; 2d Prize, £6. Schedules on application to WILLIAM GREEN, Secretary, Sandy.

DUNDEE HORTICULTURAL SOCIETY.
GRAND INTERNATIONAL HORTICULTURAL EXHIBITION will be held in Dundee on SEPTEMBER 11, 12, and 13 next. Upwards of ONE THOUSAND POUNDS, along with 3 VEITCH MEMORIAL MEDALS, offered in Prizes. Entries Close on September 4. Schedules may be had on application to D. P. SCOTT, Secretary.

INTERNATIONAL INVENTIONS EXHIBITION, London, 1885.
Division I., *INVENTIONS*. Division II., *MUSIC*.
Patron—Her Majesty the Queen.
President—H.R.H. the Prince of Wales, K.G.
APPLICATIONS to EXHIBIT must be made on Printed Forms, which will be supplied on application to the SECRETARY, International Inventions Exhibition, South Kensington, S.W. These must be filled up and returned on or before OCTOBER 1, 1884.

SCOTTISH SEED AND NURSERY TRADE ASSOCIATION.
PRIZE ESSAYS.—This Association offers a First Prize of Seven Guineas, and a Second Prize of Three Guineas, for an Essay on "The Best and Most Economical System for the Afforestation of Waste and otherwise Unprofitable Lands in the United Kingdom."
Further particulars may be had from the Secretary, Mr. DAVID HUNTER, S.S.C., 29, Dundas Street, Edinburgh, with whom the Essays must be lodged on or before Dec. 1 next.

NEW DRIED RED ROSES.
For Samples with Price LIST, apply to
J. SCHRODER, Wassenaar, South Holland.

LOUIS EECKHAUTE, The Nurseries, St. Denis, Westrem, near Ghent, Belgium, offers the following:—Splendid CAMELLIAS, chiefly double whites; AZALEA INDICA, FICUS, FERNS, PALMS, SPIRÆAS, RHODODENDRONS, and every kind of BELGIAN PLANTS, at very low prices. 4000 AZALEA MOLLIS, with buds, from £2 to £4 per 100.

To the Trade.
W. M. CROWE begs to offer the following BOUVARDIAS, as strong plants, in 60's, fit for shifting into 48's at once:—Jasminoides, Thunb. corymbiflora, Alf. Neuner, Dazzler, Queen of Roses, &c., 22s. 6d. per 100, £10 per 1000; or my selection, in eight to ten sorts, 20s. per 100, £9 per 1000; President Garfield (new), double pink, 4s. per dozen, 28s. per 100. LIST of PALMS, FERNS, &c., on application. Boleyn Nursery, Upton, Essex.

ROBERT AND GEORGE NEAL beg to inform Gentlemen, Builders, and all who may be intending to Plant Trees and Shrubs, &c., this autumn, that their stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS, is specially fine, and that the present time is the best to view and select the same, both as regards foliage and flower. A personal visit to the Nurseries earnestly solicited.
The Nurseries, Wandsworth Common, S.W.

FOR SALE, Two large ORANGE TREES, and Two large SHADDOCK TREES, in Slate Tubs. For price and particulars apply,
J. G., The Gardens, Bayfordbury, Hertford.

Established 1860.
Hardy Herbaceous and Alpine Plants.
J. V. REES (late Robert Parker), Exotic Nursery, Tooting, Surrey, S.W.
DELPHINIUMS, IRIS GERMANICA, PHLOXES, POTENTILLAS, PÆONIES, &c. Selections of 100 showy varieties for Rockwork or Border, from 50s. Orders booked for autumn planting.

OUR TRADE LISTS, Nos. 68 and 69, just issued, contain all the North American Lilies, Rare Bulbs and Plants, Calochorti, Fritillarias, Heuchera micrantha, &c., Ferns and Cypripedia, to be delivered next autumn, to order, at unprecedentedly low prices; also Lilium auratum, Japanese Bulbs, Maples, Iris, Narcissi, to be delivered in same way. To ensure certain delivery, please order at once.
NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

KELWAY'S PYRETHRUMS, Double and Single. Now is the time to plant.
CATALOGUES gratis and post-free of KELWAY AND SON, Langport.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., Bulb Growers, Hillegom, near Haarlem, Holland.
Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

PRIMULAS. — PRIMULAS. — CINERARIAS.—Nice Plants, ready for potting, of the finest Covent Garden strains, 1s. 6d. per dozen, 10s. per 100. Twelfth year of distribution.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

ROSES in Pots.—All the best New (1884) and Old English and Foreign sorts, from 18s. to 36s. per dozen. These world-famed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.
RICHARD SMITH AND CO., Worcester.

TEA ROSES.—Fine plants, in 48's, price 45s. per 100. BOUVARDIAS, bushy, in 48's, including A. Neuner and President Garfield, &c., 40s. per 100.
W. JACKSON, Blakedown, near Kidderminster.

W. M. CROWE'S CATALOGUE for 1884 can be had Post-free on application, and should be in every Amateur's hands. It embraces an extensive List of best Novelties; also splendid Collections of Double and Single Zonal Geraniums; Bronze Bicolor, and Silver and Golden Tricolor Geraniums; Show, Fancy, and Regal Pelargoniums, Fuchsias, Carnations, Chrysanthemums, Palms, Ferns, Stove and Greenhouse Climbers, &c. Special attention is also given to Collections of Plants, which can now be supplied for immediate effect in 5-inch pots, both Flowering and Foliage, at 10s. 6d., 21s., 22s., and 63s.—W. M. CROWE, Boleyn Nursery, Upton, Essex.

WANTED, GERANIUM CUTTINGS, in quantity—best popular kinds. Sorts and lowest price.
Stamford Hill Nursery, N.

WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.
BASKETS, BOXES, LABELS, and Directions for Packing forwarded upon application.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WANTED, Terminal End Saddle BOILER, capable of heating 2500 feet of 4-inch piping. Lowest cash price to
G. GIRLING, BUTCHER AND CO., Florists, St. Dunstan's Road, Hanwell, Middlesex.

BULB CATALOGUE, now ready, containing List of Dutch Hyacinths, Tulips, Crocus, great variety of Narcissus, Daffodils, and Lilies, &c., has been Posted to all our Customers; any one not having received same will oblige us by letting us know, when another Copy will at once be posted.
WATKINS AND SIMPSON, Seed & Bulb Merchants, Exeter Street, Strand, W.C.

POINSETTIA PULCHERRIMA.—Strong Plants from cold pits, ready for 48's—the same strain as offered by us last year—10s. per 100.
SMITH AND LARKE, Ashford, Middlesex.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

Daffodil, Daffodilly, Daffodowndillies.
A DESCRIPTIVE CATALOGUE of more than 200 sorts of DAFFODILS free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

EUGÈNE VERVAET DE VOS, Indian Azalea Nursery, Swynærde, near Ghent, Belgium, is now issuing his English Autumn CATALOGUE, which will be forwarded free on application—
Offering 120 000 INDIAN AZALEAS, 80 000 AZALEA MOLLIS, many thousand STOVE and other GREENHOUSE PLANTS—all of the Growers' Culture and at the Growers' Prices.
An inspection is respectfully solicited.

INDIAN LILIES.—Flowering Bulbs of L. neilgherrense, 1s. 6d. each; L. Wallichianum, 2s. 6d. and 3s. 6d. each; L. polyphyllum, 2s. 6d. and 3s. 6d. each.
The usual allowance to the Trade. All Orders for 25s. carriage paid to London. Remittance through post office to accompany orders. Bulbs ready to lift in November and December.
FRANK GRIFFITH, Kotagiri, Nilgiris, India.

MESSRS. GREGORY AND EVANS beg to call the attention of the Trade to their first of Annual Sales of ERICAS, of all the leading varieties for winter and spring blooming; also large quantities of SOLANUM and CYTISSUS, which will be offered early in September, of which due notice will be given. Inspection invited.
Longlands Nursery, Sidcup, Kent.

VINES, PEACHES, NECTARINES, and APRICOTS in Pots. The leading kinds.
WILL. TAYLER, Osborn Nursery, Hampton, Middlesex.

FOR SALE, PEACH TREES, in Tubs, Fan-trained, owing to want of room, including, several of the new Early Waterloo, Stirling Castle, Dr. Hogg, &c. Having been grown in large tubs, these trees are in capital order for planting a few weeks hence, and would give a crop next season. Size about 8 feet each way. Prices, &c., on application to W. H. DIVERS, The Gardens, Ketton Hall, Stamford.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy, and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Strong Roots, 4s. per 100. Plants, in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Strawberries.
OUR DESCRIPTIVE CATALOGUE of the most approved varieties is now ready, and will be sent post-free on application.
THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

STRAWBERRIES, very strong, in large 60's, either for potting on or planting out, price 15s. per 100, free to London. LIST, Trade Terms, &c., on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

The Earliest and Best Strawberries in the World!
LAXTON'S "KING of the EARLIES"—the earliest; and THE CAPTAIN, a true large Perpetual.
Growers who desire to secure Early Runners or even Plants at all, should apply at once for particulars, as the stocks are being taken up for Market purposes. Coloured Plate 6d.
T. LAXTON, Seed Grower, Bedford.

STRAWBERRY RUNNERS.—All the leading varieties, well-rooted, 3s. per 100, free. SCOTT'S WASP DESTROYER, the most effectual mixture for destroying wasps.—JOHN SCOTT AND CO., Royal Nurseries, Merriott.

SALES BY AUCTION.

Sale This Day.—(Sale No. 6704.)
BULBS from HOLLAND —TRADE SALE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., THIS DAY, SATURDAY, August 16, at half-past 12 o'Clock precisely, 850 lots of first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, just received from well known Farms in Holland, in lots to suit the Trade and other large Buyers.
On view morning of Sale, and Catalogues had.

Monday, Wednesday, and Saturday Next.
DUTCH BULBS —TRADE SALES.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY, WEDNESDAY, and SATURDAY NEXT, August 18, 20, and 23, at half-past 12 o'Clock precisely each day, consignments of first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, just received from well-known Farms in Holland, in lots to suit the Trade and other large buyers.
On view mornings of Sale, and Catalogues had.

Dutch Bulbs.—Monday and Thursday Next.
SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY and THURSDAY NEXT, at half-past 12 o'Clock precisely each day, extensive consignments of the finest varieties of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; the lots will be specially composed to suit the Trade and other extensive buyers, and arrangements have been made for the supply of roots of the best quality.
On view morning of Sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
Three VALUABLE IMPORTATIONS of ORCHIDS, including Cattleya Eldorado splendens, C. citrina, and Lælia autumnalis, together with about Fifty Lots of ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include the above in the SALE at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, August 19.
On view morning of Sale, and Catalogues had.

Tuesday Next.
HIGHLY IMPORTANT UNRESERVED SALE of ESTABLISHED ORCHIDS, being the fourth portion of the valuable collection of J. S. Bockett, Esq., The Hall, Stamford Hill, who is removing in consequence of the estate being at once required for building purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by J. S. Bockett, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, August 19, at half-past 12 o'Clock precisely, the fourth portion of his valuable COLLECTION of ESTABLISHED ORCHIDS, including, amongst other fine things:—
DENDROBIUM AINSWORTHI, LYCASTE SKINNERI ALBA, CŒLOGYNE LEMOINEANA, CATTLEYA TRIANÆ WALLISI, C WARNERI, C. MENDELI, VANDAS, and others.
At the same time will be SOLD, in Lots, the Erections of Two Span-roof GREENHOUSES, with the Hot-water Piping and other Fittings thereto, which may now be inspected at The Hall, Stamford Hill, on application to the Gardener, Mr. EBBAGE.
The ORCHIDS will be on view in the Auction Rooms the morning of Sale, and Catalogues may be had of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.—Special Sale of Orchids.
CATTLEYA DOWIANA.
CATTLEYA SUPERBA SPLENDENS.
CATTLEYA ELDORADO SPLENDENS.
PAPHINIA GRANDIS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 22, at half-past 12 o'Clock precisely, specially grand importations of the true CATTLEYA SUPERBA SPLENDENS, with the dark brilliant flowers; a truly grand lot of CATTLEYA ELDORADO SPLENDENS, and CATTLEYA DOWIANA; the rare and fine PAPHINIA GRANDIS, in unusually well bulbed and freely breaking plants; many SCUTICARIA STEELI, VANDA SANDERIANA, about eight plants of GALEANDRA VIVEAS, very rare and lovely; GALEANDRA DEVONIANA and G. DIVES, several new ORCHIDS, including AERIDES SANDERIANUM, and also many other importations.
On view morning of Sale, and Catalogues had.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place on TUESDAY, August 26, for which they will be glad to receive entries not later than the 18th inst.
67 and 68, Cheapside, E.C.

Waltham Cross, N.

MR. J. TYDEMAN will SELL by AUCTION EARLY in SEPTEMBER (unless a suitable offer is previously made for the Whole Collections), at the Nurseries, Waltham Cross, a VALUABLE COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, the property of Mr. E. Tudgey, of the "Exotic" Nurseries, Waltham Cross (late of Worcester), and sold in consequence of his giving up Exhibiting, including well grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnocomas, Dracophyllums, Stephanotis, Allamandas, Clerodendrons, Francisceas, Rondeletias, Specimen Palms, Anthuriums, Crotons, &c. This well-known collection has taken first prizes at the London and Provincial Shows, viz.:—Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in the country. Also two Exhibition Plant VANS, in good repair.
Full particulars of Mr. J. TYDEMAN, Auctioneer and Valuer, Waltham Cross, N.
Date of Sale will be announced in future Advertisement.

Valuable Freehold Residences, Nursery, and Building Land in Maghull, Lancashire.

MR. W. G. IDLE will SELL by AUCTION, at the "GREAT MOGUL INN," MAGHULL, on TUESDAY, August 19, at half-past 6 o'Clock in the Evening prompt, subject to conditions of sale, all that FREEHOLD ESTATE, situate in Maghull, in the County of Lancaster, nearly opposite Mr. Cookson's, and fronting the Liverpool and Preston turnpike-road, consisting of two large SEMI-DETACHED MESSUAGES or DWELLING-HOUSES, with Shrubberies and Gardens to the front thereof, approached from the road by convenient carriage drives, and with the usual outbuildings thereto. Also a large PLOT of LAND appertaining and adjoining to the left-hand side house, and nearest to Maghull Station, laid out as a NURSERY, with the Greenhouse, Cucumber-house, Frames, and other Buildings thereon erected, and having a south wall 465 feet 6 inches in extent, together with an extensive Vegetable and Fruit Garden behind, and appertaining to the other residence, and together also with a CROFT or PARCEL of LAND adjoining the last mentioned residence. The whole property has a frontage to the said turnpike-road of 828 feet, and contains in the whole 4a. 2r. 5p. 1734 yd., statute measure, or thereabouts.
The MESSUAGE on the right-hand or Liverpool side, with the Vegetable and Fruit Garden behind the same, and the said Croft or Parcel of Land, are in the tenancy of Mr. Charles Parr, the other Messuage first described in that of Mr. Goodman, and the said Nursery, Hothouses, &c., are in the occupation of Mr. J. D. Ellison.
The HOTHOUSES consist of a span-roofed Vinery and Plant-house, 240 feet long by 20 feet wide, in eight sections, separately heated; a span-roofed Cucumber-house, 240 feet long by 10 feet wide, in two sections, separately heated; also Frames 100 feet long, also heated; with a Water Tank, Storehouse, and Potting sheds. The heating is performed by two large Trentham Boilers.
If not sold as an entirety, the property will be offered for sale in the following lots:—
LOT 1.—The MESSUAGE or DWELLING-HOUSE on the left-hand side and nearest to Maghull Station, with the Nursery, Hothouses, and other Appurtenances as above mentioned. This lot has a frontage of 334 feet, and contains 2a. 2r. 4p. 6yd. in the whole.
LOT 2.—The MESSUAGE or DWELLING-HOUSE on the right-hand or Liverpool side, with the large Vegetable and Fruit Garden, and a portion of the Croft added as marked out. Frontage 104 feet. Total contents, 3r. 9p. 24yd.
LOT 3.—The remainder or greater portion of the CROFT as marked out, containing 1a. 0r. 31p. 18yd. in the whole, and having a frontage of 390 feet. This lot is exceedingly adapted for building purposes.
This estate is a quarter of an hour's walk from Maghull Station, on the Lancashire and Yorkshire Railway, and half a mile distant from the new station on the Southport and Cheshire Lines Extension Railway, which opens up a direct communication with Southport, and a thorough communication with Manchester. A plan may be inspected at the Solicitors' Offices.
For further particulars apply to the Auctioneer, at his Offices, Derby Street, Ormskirk; or to BRIGHOUSE, BRIGHOUSE AND JONES, Solicitors, Ormskirk and Southport.

Preliminary.
SALE of an IMPORTANT COLLECTION, comprising Several Thousand Choice and Rare ESTABLISHED ORCHIDS, in first-class condition; and a large number of IMPORTED PLANTS.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from the Executrix of the late Mr. George Toll, deceased, to SELL by AUCTION, on TUESDAY and WEDNESDAY, September 9 and 10, at their Large Rooms, 45, Princess Street, Manchester, a Finely Selected Lot of Good ORCHIDACEOUS PLANTS. Catalogues are in course of preparation.
For further particulars apply to Messrs. S. SIMPSON AND SON, Solicitors, 15, Southgate, King Street West; or to the Auctioneers, 45, Princess Street, both of Manchester.

Sunbury, Middlesex.
IMPORTANT and DESIRABLE PROPERTY. A rare opportunity. Must be sold to Close the Estate.

FOR SALE, the valuable FREEHOLD ESTATE known as Osborn's Nursery, comprising 17 Acres of Land, which for the Growth of Fruit Trees, Roses, and General Nursery Stock is unsurpassed. There are also several recently built Glass Erections, with Packing and Potting-sheds, &c., which cost about £3000 to put up.
The whole of the commanding and extensive frontage to the road could be easily utilised for building without detriment to the other portion for Nursery purposes.
Full particulars of the above may be obtained, and offers made, through Messrs. PROTHEROE AND MORRIS, Auctioneers, 67 and 68, Cheapside, London, E.C.

FOR SALE, a NURSERY, about 6 miles from Covent Garden, wholesale Cucumber and Choice Cut Flower Business, comprising 10-roomed House, 4 acres of Land, 6 Span-roof Greenhouses (one a show-house), well heated with Hot-water. Held at a low ground rent for 74 years. Large stock of Camellias, Roses, Gardenias, Stephanotis, Eucharis, Azaleas, &c. An excellent opportunity of adding the Retail and Jobbing Trade. For sale through ill health, after sixteen years' successful occupation.
Apply to S. MUGGERIDGE, Land Agent, 8, Duke Street, Adelphi, London, W.C.

FOR SALE, a FLORIST'S BUSINESS, with Double-fronted Dwelling-house and five good Greenhouses, quarter of an Acre of Ground. Ninety-six years' Lease. Price £650; greater part can be paid by easy instalments.
Apply, W. C. WILLIAMS, Vicarage Nursery, Vicarage Road, Tottenham.

FOR SALE or to LET on Lease, a 7-roomed COTTAGE Residence, with Land and Glass Houses. Six minutes from Hampton Station.
JOHN EMBLETON, Suffolk House, New Hampton.

FREEHOLD, substantial 8-roomed HOUSE, Large Bunching Sheds, capital Well of Water, double-action Pump; suitable for Florist, Nurseryman, or Private Residence. £850—£600 can remain 10¼ miles from London.
ROBINSON, Fence Piece, Barking Side, Essex.

Florists and Others.
Within 5½ miles of Covent Garden.
RESIDENCE, Four GLASSHOUSES, and 1½ Acre of Walled GARDEN, in first-class working order. Over 50 years' Lease. Capital required about £500.
Apply to Mr. B. WOOD, Business Agent, 42, George Street, Richmond.

John Maurer's Dirkhill Nursery Garden, Bradford, Yorkshire,

TO LET, as a going concern, Stock in Trade, Implements, &c., immediately, owner being compelled to leave on account of ill-health. Rare opportunity for competent man.

Kingswood Cottage Nursery, Vulcan Road, Brockley, Kent,

TO BE LET, with Immediate Possession (Proprietor being occupied in other business), containing about half an Acre, with Greenhouses upwards of 200 feet by 12 feet; Dwelling-house, six Rooms, and Outbuildings; five years' lease unexpired. Can be renewed. Rent about £33 per annum. Room for additional Glass, or if left as at present, is suitable for a man requiring easy occupation. Arrangement for Glass and Stock by private treaty.—Address H. H., as above.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

DSTALKER AND SON (late Wiseman), having had 25 years' experience in England and Wales, are prepared to carry on all sorts of Work entrusted to their care, especially LANDSCAPE GARDENING, practically, efficiently, and economically.—Cawdor Road, and Lodgehill, Nairn, N.B.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

Bush Hill Park Nursery, near Enfield.

HUGH LOW AND CO. have large quantities of FRUIT TREES, ROSES, and other Outdoor Nursery Stock, of fine quality, at their Nursery, near the Bush Hill Park Station of the Great Eastern Railway, and they cordially invite their friends to inspect the same; also the Glass Erections, which consist of Long Ranges of Pits and Thirty-three Houses, averaging upwards of 100 feet in length, many of them 25 feet wide, containing Acacias, Azaleas, Adiantums, Camellias, Cyclamens, Dracænas, Ericas, Gardenias, Genistas, Grape Vines, Jasmines, Palms, Pelargoniums, Roses, Solanums, &c. Clapton Nursery, London, E.

THE EXECUTORS of the late B. MALLER beg to offer to the Trade a very extensive and extra well grown stock of ERICAS (Hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMENS, BOUVARDIAS, ADIANTUM CUNEATUM and other FERNS, GREVILLEAS, VINES (in pots), &c. An inspection is invited. Trade CATALOGUE forwarded on application.
The ANNUAL SALE by AUCTION will be held on TUESDAY, September 16.
Burnt Ash Lane Nurseries, Lee.

Notice.
To Nurserymen, Seedsmen, and Florists.—Established 1856.

LEWIS ISAACS, IMPORTER OF DUTCH BULBS, 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., begs to inform his Customers and the Trade in general that he has again arrived from Haarlem, in Holland, with his annual well selected stock of Bulbs. As an advantage to the Trade only, he begs to offer his named HYACINTHS, good picked Bulbs, all true to name and colour, at an all-round price of 3d. per Bulb, in any quantity from half a dozen of a sort and upwards. The stock is on view to intending purchasers, at the above address, which is only 3 minutes' walk from Aldgate Station.
Orders punctually attended to on the same day.
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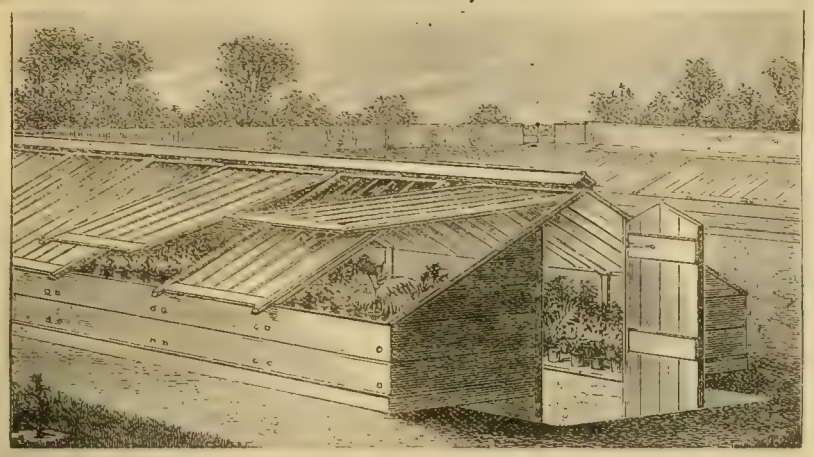
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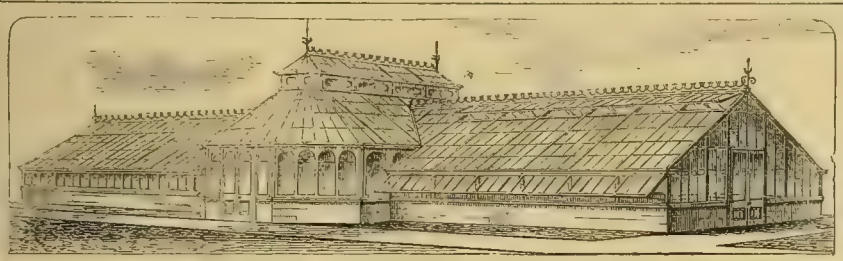
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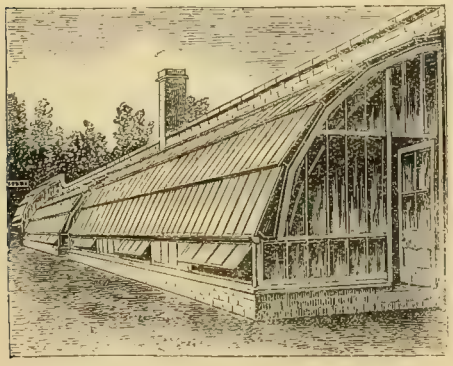
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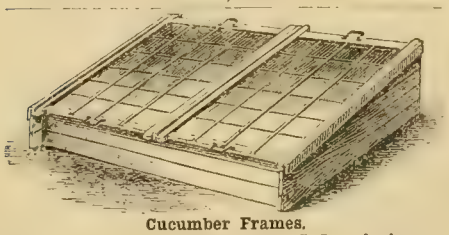


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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 16, 1884.

SYON HOUSE, BRENTFORD.

IN these days of building and railroad aggression it is pleasant to see that the noble establishment of his Grace the Duke of Northumberland, in spite of its proximity to London, preserves its boundaries intact, and that once within them we are, as of old, only reminded of our nearness to the great city by the gentle hum of the traffic, which serves to make the repose of the immediate surroundings still more impressive. The gardening arrangements at Syon have, as in other large places, undergone many changes, but through all the beautiful grounds and noble trees have preserved it always the same to the casual observer, its area of nearly 300 acres containing some of the finest and rarest specimens in the country. In the grounds, however, as in every other part of the establishment under his care, Mr. Woodbridge has made many improvements calculated to give uniformity, and to add to the beauty of its varied scenery. The walks have been made equal in width, the previously straight fronts of many of the shrubberies have been broken up, fresh clumps and single specimens planted, climbing Roses and other trailers arranged to run up trees, and rockeries made, undergrowth of Hypericum and Ivy placed where other things would not grow, and innumerable other matters seen to which none other than a true landscape garden artist would think of. Especially effective, as here arranged, are the snowy Populus nivea, and the bushy little Salix rosmarinifolia. The question is often asked, What can I plant in a swampy place that will thrive and yet not get too large ?

The answer is, Salix rosmarinifolia. In habit it is like a dwarf Oak, very pretty and quaint in appearance, and quite at home in swampy ground where other things would only die. After a few years it grows very slowly, and never breaks the uniformity of its shape by rank growth. Very lovely, too, are the clumps of Rhododendrons, among which the Bracken are growing and sending up their fronds from 5 to 10 feet in height. People rave about the beauty of Gleichenia flabellata, but our British Bracken is quite as handsome, and very much like it when well situated. No large garden is quite perfect without a piece of water, but few are so well supplied with this requisite as Syon, the view from the bridge of the winding expanse of water, with its white and yellow Water Lilies, purple Lythrums, rosy Epilobiums, and the varied foliage on its banks being a very pleasant one at this season.

In the glass department and garden proper utility in all things is the primary object, flowers for cutting, plants for decoration, and good fruit and vegetables in large quantities, being always in demand. But even under these circumstances Mr. Woodbridge does not allow the beauty, neatness, or interest of any part of the garden or its contents to suffer ; and while most things are conducted on such a plan that many market growers might gain a

lesson from them, the holiday visitor, looking at external objects only, will not fail to be pleased.

Perhaps the one great improvement, and that the one on which so many successes have depended, is the clever manner in which Mr. Woodbridge has modernised and rendered useful the many ill-ventilated iron structures which were peculiar to the place many years ago, and which seem to have been constructed without the slightest regard for the vegetable life which they were to contain. Many of these were of the old Pine-pit kind, without front ventilation; some were earthed-up to the eaves, and consequently without either front lights or front ventilators; others were of the pit pattern, almost as costly to build as houses, but without having walks to them, or other means of access than that given by removing the lights.

All these defects have passed away, pits have had walks made in them and entrances furnished, thus turning them into houses; front sashes and ventilators have been arranged throughout, the heating apparatus and means of giving air rearranged, and all in a perfect and economical manner, which is deserving of the highest praise. The manner in which front ventilators have been put to the great iron tropical house is specially interesting, as the ironwork of the front could not be tampered with, seeing that the whole of the structure depended on it for support. The difficulty was cleverly and simply overcome by removing the glass for about 4 feet at the lowest part of the front from end to end, and by fitting a false front of wood with movable glass sashes on the outside of the ironwork, which renders the house as perfect in the respect of ventilation as could be desired. The ranges of plant-houses have also been transformed from unpractical pits, and the plants themselves speak well for the change, they being healthy, clean, and floriferous. It is one of the features now at Syon that even the most critical florist could hardly pick out a plant which was not in itself, when viewed alone, well worthy of the room it occupied. It would be well if the same could be said of many of our other old gardens.

The first division of the first range is occupied chiefly by Calanthe Veitchii, Gardenias, and Eucharis, the two latter in bloom, and Asparagus plumosus, and on the roof that richest coloured of climbers, Dipladenia Brearleyana, covered with blooms, although it has been affording cut blooms for months.

The second division has a bed of the Syon House specialty, Hymenocallis macrostephana, with its snowy and sweet flowers, the rest of the division being occupied by Orchids, noticeable being several large specimens of Peristeria elata, sending up stout spikes; some very healthy Epidendrum bicornutum, and well flowered Dendrobium Dalhousianum, and on the roof Dipladenia boliviana and Stephanotis in full bloom. The third division has Aërides, Vandas, Saccolabiums, Cypripediums, and other warm-house plants, as well as a fine lot of Anthurium Scherzerianum. The fourth division contains Odontoglossums, Lælias, Cattleyas, and other cool-house plants. The Orchids seem to thrive particularly well, and it is contemplated to arrange a new cold house for Odontoglossums, Masdevallias, &c., and thus give room to the general collection which is increasing.

The second plant range in several compartments is devoted to greenhouse plants, tuberous Begonias, and Bouvardias. Beyond are the pits containing good batches of Cyclamen, Cinerarias, and others applied to the raising of small Ferns and mosses, and to the securing of successional plants of different things by propagation. The old Victoria Lily-house, which still contains the tank round which so many have gazed in wonder at the giant Water Lily which once occupied it, now contains Azaleas grown for affording cut bloom, the only aquatic being a blue Nymphæa in flower in the lesser tank.

The Vines in the long ranges of vineries, not less than the houses themselves, needed renovation when their present manager took office, and that entailed a series of delicate operations extending over a long time, as it was impossible to do the work at once on account of its being imperative that the supply should not fail. By judicious management, however, and by making use of many pot Vines, the greater part of the worn-out ones have been removed and young ones planted—the Muscat of Alexandria-house, which now bears its first crop, being an excellent example of the new work; the canes are strong and clean, and the berries and bunches large—in fact they are show fruit. Many other good examples of Vine culture are here, and some specially good crops of serviceable bunches on the old Vines, particularly in the Black Hamburgh houses. The long ranges of Peach-houses and Fig-houses are made the most of, the back walls being always planted with Figs, Camellias, or other things useful; and the Melon-houses are in some instances bearing fruits on the second crop of plants—indeed, no sooner is one thing out of the way at Syon than another takes its place. A notable instance of this plan is carried out on the large iron pit ground, which is now so serviceable. Tomatos come in everywhere in these pits as space is afforded; they are also planted on the back walls while other crops occupy them. In some instances they are sown in spring and planted out in these pits, fruited until winter, when they go barren for a short time, and then commence to fruit again in early spring, the old plants giving a good crop long before early sown ones come into fruit—in fact, are fruiting all the year, except a short spell in the depth of winter. Hathaway's Excelsior is the sort grown, and they are allowed to ramble over trellises like plant staging. Vines grown as for pots, but planted out, are also grown in these pits, as well as pot Vines, and Cucumbers and Tomatos are always ready to take the places of pot Strawberries, early Potatos and French Beans, the whole being worked systematically and with precision and such neatness that it would not be suspected that produce was the first consideration, the large kitchen garden, with its fruit-laden walls, indeed, being embellished with a very bright ribbon border on each side of its middle walk.

The historical tropical house has now two of its divisions planted with Vines which are so far noticeable from the fact that although they were old Vines, lifted and planted there two years ago, they are now well laden with good bunches. The other two divisions are occupied by Bananas, Vanilla, Bougainvillea, &c. The large semicircular conservatory must be a trying place to keep in such perfection as it now is, there being a profusion of flowers found in many of the divisions, and of clean specimens of Ferns, Palms, and foliage plants in others, the interest culminating in the centre division, which is 65 feet in height, but of which even the great height does not prevent those wonderful specimens of Bamboos, Cereus, &c., from occasionally pushing out the glass at the top. One wonderful specimen of tropical vegetation, Dendrocalamus Brandisii, with many stems like the mast of a yacht, and young shoots 18 inches in circumference, being a marvellous object, and so also are the Cereus hexagonus, over 60 feet: the Clethra arborea, covered with bloom, over 30 feet; and many of the other curious plants. In the area partly girt by the conservatory is the fountain and flower garden, the latter being a splendid piece of work, consisting of carpet, ribbon and old-style flower gardening, the brilliancy of its effect being heightened by the uprising background of trees. It is also a good proof of the usefulness of bedding plants when these are fittingly used, by being confined to the flower garden proper, and are not planted all over the place to thus mar the effect of our more enduring hardy flowering shrubs.

[We gave a double-page woodcut and other illustrations of this fine establishment in our number for September 16, 1882. ED.]

New Garden Plants.

DYCKIA LEPTOSTACHYA, *n. sp.*[*]

THIS is a near ally of Dyckia rariflora, *Bot. Mag.*, t. 3449, from which it differs by its more robust habit, larger leaves, longer stem, minute distant stem-bracts, ascending shorter flowers, and very short style. We received it at Kew from Paraguay in the year 1867, but it has not flowered till this present summer. A monograph of the species of this genus is greatly wanted. They are all natives of the southern half of Brazil and the adjacent territories. The same species, or one very closely allied, was collected long ago by Burchell on the mountains of the province of Goyaz.

Leaves 15—18, in a dense, nearly sessile rosette, lanceolate-acuminate, falcate, rigid in texture, 18—21 inches long, 1—1¼ inch broad above the dilated base, narrowed very gradually to the acuminate apex, channelled down the glabrous pale green face, especially in the upper half, semicircular on the back, which is finely lepidote and clothed with a thin adpressed coat of lepidote persistent white meal, the marginal prickles horny, brown, much hooked and decurved, except towards the base of the leaf. Peduncle very slender, a yard long, exclusive of the spike, terete, arising from the base of the rosette of leaves, its adpressed distant scariose bract-leaves not more than ¼—½ inch long. Flowers 20—25, in a simple erect spike 6—9 inches long; bracts deltoid-amplexicaul, less than half as long as the calyx. Sepals suborbicular, ⅓ inch long, reddish, densely pruinose. Corolla bright scarlet, ¾ inch long; petals obovate-cuneate, ½ inch broad. Stamens just exserted beyond the tip of the petals. Ovary cylindrical-trigonous; style scarcely any. *J. G. Baker.*

[*] *Dyckia leptostachya*, n. sp.—Subacaulis; foliis dense rosulatis 15—18 lanceolatis acuminatis rigidis, sesquipedalibus recurvatis, e basi ad apicem sensim attenuatis supra basin profunde canaliculatis, facie glabris viridibus, dorso pruinosis subtiliter lineatis; pedunculo tripedali gracili foliis bracteiformibus adpressis parvis remotis; floribus 20—25 in spicam simplicem sublaxam erectam dispositis, omnibus sessilibus ascendentibus; bracteis deltoideis calyce duplo brevioribus; sepalis orbicularibus, pruinosis imbricatis; petalis splendide scarlatinis calyce duplo longioribus; staminibus petalis paulo longioribus; stylo subnullo. *J. G. Baker.*

COLUMBIA MARKET.

ON Friday, the 8th inst., a meeting was held in the Council-room of Columbia Market by a large and influential body of farmers, market gardeners, and others, to consider a report of their elected committee upon the half-yearly report of the directors of the Great Eastern Railway Company, adopted at a meeting of shareholders, held on July 29.

The Chairman, Mr. W. Beeson, of the firm of W. & A. Beeson, of Columbia Market, Tooley Street, and King's Cross, in opening the proceedings, briefly explained the object of the meeting, and the report of the committee was read, as follows:—

"That in the opinion of this meeting of farmers, market gardeners, and others residing in the Great Eastern district, who formerly sent their produce to the Bishopsgate depôt, and now sending to Columbia Market, the concluding paragraph of the directors' report to the shareholders of the Great Eastern Railway Company on July 29, 1884, is generally believed to be inaccurate and misleading, inasmuch as Columbia Market, with full parliamentary powers, provides 'further market accommodation' superior in every respect for market purposes to that which the Great Eastern Railway Company attempted. It has, since the closing of Bishopsgate depôt on January 18, 1884, been considerably extended to 'meet the requirements of the dense population in the east of London,' and provision is made for further enlargement, sufficient not only for the increasing vegetable food supply at the passing time, but for the ever-increasing requirements of future generations.

"And further, so far from the closing of the Great Eastern Railway Company's depôt having 'tended to check the growth of market garden produce in the Great Eastern district,' this meeting is distinctly of opinion, from practical experience, that this branch of industry has received a new impulse from the consequent opening of Columbia Market for fruit and vegetables, as well as for fish—farmers, market gardeners, and the trade generally, having been induced by the encouragement afforded by this large outlet for their produce to extend their operations. This year a much larger acreage has been brought under market garden cultivation, and we believe much larger supplies will be brought into London from the Great Eastern district during future years than has ever been the case in any former times."

Mr. William Cocks, of Monk's Hall, Lincolnshire, in moving the adoption of the committee's report, said their own returns for this season's traffic of produce shows a great improvement over the corresponding period of 1883. In his opinion this was owing in a great measure to the entire body of salesmen moving to Columbia Market, where the facilities for the sale of market garden produce are far in advance of those in Bishopsgate depôt.

On the closing of the depôt, he with the others was allowed by the owners of Columbia Market to carry on business there, and as far as his own personal experience went he could prove that Columbia Market is better for the sale of produce than Bishopsgate depôt. In 1883 he consigned black Currants to the depôt, which realised 1*s.* 6*d.* per half sieve. He also consigned the same class of goods to Sheffield on the same day, which realised 3*s.* 6*d.* per half

sieve; this season, 1884, he consigned red Currants to Columbia Market, which realised 4*s.* 6*d.* per half sieve, and Gooseberries 10*s.* to 12*s.* per cwt.; and on the same day he consigned to Sheffield market red Currants which realised 3*s.* 6*d.* per half sieve, and Gooseberries 6*s.* to 8*s.* per cwt., which will prove that Columbia Market is equal to the best provincial markets, enabling him to compete with the provinces and to send the whole of his goods to London, which, after two years' trial, he found could not be done at Bishopsgate depôt.

Mr. William Taylor, farmer and Potato merchant, Whittlesea, Cambridgeshire, seconded the motion, and said that as a farmer of 1400 acres of land, most of it in the Great Eastern district, he could speak from experience. He believed it was wrong to say that the closing of the depôt would tend to check the growth of market garden produce in the Great Eastern district. He believed, as one who sends more Potatos over the Great Eastern Railway than any other man in London, he would never go back to the depôt whilst Columbia Market remained open, because he believed this to be the best market for all purposes. He had grown this year 23 acres of Broad Beans, on purpose for Columbia Market, and had already sold there 8000 bags of green Peas—two things he would never have thought of doing at the depôt. This year he had 600 acres of Potatos growing, which is an addition of 200 acres; most of these Potatos will be sold in Columbia Market at such prices as no other market in London can compete with.

Mr. David Scott, of 94, Commercial Street, Spitalfields, said that the salesmen present knew that when East London depended upon Spitalfields Market alone, the market accommodation for East London was insufficient, and the depôt was wanted; but now that Columbia Market is opened and supplying the required additional market accommodation, the depôt as a market is unnecessary. Any ordinary observer can see that three markets within a radius of half a mile would be superfluous.

The report of the committee was unanimously adopted.

Mr. F. Rippon, salesman, Columbia Market, then moved:—"That in the opinion of this meeting of growers and salesmen, the directors of the Great Eastern Railway Company would promote the interests of their shareholders, and confer a benefit upon the dense population of East London, by constructing a branch line from their railway into Columbia Market—the only fully authorised market in East London, superior in structure and position to the closed depôt, which is not suited for a public market." Speaking from personal experience, and to a body of men who well understand the facts, he estimated that after the proposed railway had been constructed two years, the fruit, vegetable, and root traffic passing over it, would not be less than 50,000 tons per annum, worth, say, £20,000, added to which there was, he believed, an existing traffic in fish from the large fleet belonging to the proprietors of the Columbia Market, which with other craft fishing in consort had numbered as many as 240 steam and sailing vessels in the present year, and producing freightage worth about £8000 per annum to the railway company. To develope and secure this traffic it is necessary to have first-class market accommodation, combined with railway facilities for bringing the commodities, without cartage, labour, or repeated handling, direct to the purchaser in the market, which could only be done in East London at Columbia Market; for at Spitalfields, even if the engineering difficulties could be surmounted, it could not be expected that the Great Eastern Railway Company would lay out capital to get traffic already safely theirs, and which, from the nature of the market itself—restricted as it recently had been in its boundaries—declared on appeal to the House of Lords to be entitled only to two days a week—could not admit of a considerable extension of accommodation.

The experiences of the depôt have shown that a string of massive, isolated dark arches, constructed by railway ingenuity for railway purposes, and possibly admirably adapted for railway work, can never be suitable for market purposes. Columbia Market, which has been recently established by an Act of Parliament, is not only fully authorised to hold a market every day in the week, with powers to extend the market area as the population increases, but it was originally designed with a view to this combination, a railway connection having been originally sanctioned by the Act of Parliament. *Extract from Report.*

HYPERICUMS.

Hypericum is a large genus, numbering over 150 recognised species, and belonging to tropical as well as to temperate climates, and including tall and dwarf shrubs as well as trailing and upright growing herbs; hence, it is difficult to draw a line between hardy and not hardy herb and shrub in this genus. First about the name, of which more than one absurd derivation has been given: it is a good Greek word, found in the earliest Greek writers on plants, and means "under Heath;" to what wild plants it was applied by them, or why it was so called, need not now be inquired; but the "i" is a Greek diphthong, and is long by nature. Fashion may shorten it, as it often does the "i" in Erica (Heath), but its nature will remain long for all that.

It is proposed to mention a few of the Hypericums known in cultivation, and all of those I shall mention are cultivated in the garden at Edge Hall, and the remarks about them are the result of experience. I will first mention the shrubs. There are several varieties, growing from 2 feet to 5 feet high, and bearing clusters of flowers each about an inch across, succeeded by ornamental dark brown round or oblong berries; the names of these are confused, and they seem to me after studying the living specimens at Kew to run into one another. The native Tutsan, H. androsæmum, is the lowest in growth, and H. hircinum one of the tallest; between these I find the names elatum, glandulosum, and one or two more, which I am unable definitely to identify with any fixed characters. Then we have three shrubs from Eastern Asia, all beautiful and distinct as a class, but closely allied to one another; all are doubtfully hardy here, though they have now lived through two winters without being cut down, and form bushes about 4 feet high, and as much through. Their names are H. oblongifolium, which has the most upright growth and the largest flowers, sometimes more than two inches across; H. patulum, and H. uralum, the smallest but also the hardiest. The flowers of all these are of great substance, the petals being very thick. They flower from July to the end of autumn. They may be grown from summer cuttings wintered in a cold frame, and flower pretty well the first year, and even if the old plants are killed every winter they will repay the trouble of renewing. It is said by some that the patulum of present cultivation is not the plant originally described and figured by Thunberg under the name, but after careful comparison I cannot see sufficient reason to doubt it.

Next come three North American shrubs, allied to one another, distinguished by their pale yellow flowers and very long divergent filaments, which project in a dense mass. Of these, H. aureum has the largest flowers; then come H. Kalmianum and H. prolificum, all these are quite hardy, but seem liable to die from not having their required conditions satisfied, and a constant succession raised from cuttings is necessary, at least in this garden, to keep up the stock. I may remark, however, once for all, that this rule applies to all but the very commonest and hardiest of the Hypericums. Omitting the native or naturalised species I may mention the sub-shrubby H. olympicum as one of the best of hardy July plants. It grows about 2 feet high, and the large yellow flowers, as wide as but slenderer than those of H. calycinum, are borne in profusion. At three, or at most four years old the base of the stem becomes so thick and hard that it will not break, and the plants must be renewed. H. Burseri is not unlike the last in habit, but smaller and earlier in flower, and a true herb; in all respects an inferior plant. This and nearly all the Hypericums are easily reproduced by seed, which they ripen in great abundance. I may here speak of one, of which I have raised from seed and distributed a large number, though I have never before seen it in cultivation—H. pyramidatum. I observed a label bearing this name in the hardy garden at Kew last week, but nothing to justify the name was near the label, which was opposite to a large bush of the H. hircinum class. H. pyramidatum is a tall herb, growing 4 or 5 feet high, with larger flower, than any of the genus I have mentioned. It grows in the Northern States of North America, where it is not common. My son brought me seeds two years ago from Minnesota, gathered from the only plant he found, and he described the habit: his description corresponds with that given in Asa Gray's *Manual*. The seedlings at two years old have not yet flowered, and I cannot say whether it will prove an acquisition. Several dwarf species remain to be mentioned. A glaucous, low-growing herb, with inconspicuous umbels of pale yellow flowers, raised from W. Thompson's seed as H. ciliatum, I cannot distinguish from what I had before as H. orientale. It may easily be dispensed with in a small collection. Two very neat little dwarf shrubs from the Levant—H. coris and H. empetrifolium—are most desirable, but difficult to cultivate, being only half-hardy here. Some of my friends, especially in the South of England, tell me these species live out in winter with them; but even if they do, they ought to be kept in a frame and planted out. The creeping little H. nummularium I find still more difficult to keep than these, and I can give no directions to ensure success, but it is too pretty a plant to give up because it is difficult. One of the latest additions to my collection, bought from Fröebel as H. cuneatum, is a charming dwarf trailer, with wire-like brittle stalks, and tiny leaves covered with buds like scarlet-coral beads. I am told at Kew that it is hardy there. The most minute bush I have is H. ægyptiacum: this is generally thought to belong to the greenhouse, but I have now had it on my rockery through two winters—very mild winters, it is true.

It is not long since I wrote in praise of the Himalayan H. reptans, so I will only say that I continue to think it the best of the species, and one of the best of rock plants. I should never think of passing a winter without a stock of it under glass, for it has not yet been tested here in severe winters. It must not be confused with H. repens, a Greek plant, described by Sibthorp, and not, as far as I know, in cultivation. These are only a few of the Hypericums to be found described in catalogues, but they include all those, except the commonest, which I have in my garden. *C. Wolley Dod, Edge Hall, Malpas, Cheshire, August* 11.

FORESTRY EXHIBITION.

(*Continued from p.* 167.)

South Australia and New Zealand.—Both these Colonies are rather sparsely represented. The former sends a number of volumes of books, including *Tree Culture in South Australia*, Forest Acts, and copies of the Woods and Forest Reports, as well as plates and portfolios of forest flora; while New Zealand contributes a collection of beautiful mounted specimens of woods, many being of a desirable colour and texture, but of which it would be difficult to speak with any amount of certainty, the various specimens being of rather minute dimensions.

Practical Forestry.—Some Parisian exhibits by the Comte des Cars are well worthy of inspection by those engaged in practical forestry, and pruning in particular. These illustrate the results of the injudicious pruning of trees, in the shape of loose knots, flaws and defects in the wood, &c., as contrasted with what is styled a "more rational system," viz., to keep, by pruning, the tree "in perfect equilibrium"—a system which it is averred helps towards the enlargement of the trunk, "the greatest possible surface of leaves being managed in the smallest space." Regarding the merits of this French system we are not at present disposed to enter into a discussion; suffice it to say, that although the method is sneered at by British foresters generally, the exhibit must convey a great amount of sound, practical instruction to the unbiassed mind. Under the above heading another exhibit well worthy of note is a splendid section of Abies nobilis from Coltoquhey in Perthshire, which, it is stated, was cut from a tree that had recently been blown down. This fine specimen had attained the height of 55 feet (not an uncommon height for Abies nobilis in England), and was 8 feet 2 inches in circumference. Judging from the annual rings of timber this tree had formed it must have grown very rapidly—ample proof that the soil and situation in which it was planted were in every way conducive to its healthy development. To those inclined to study the "much vexed question" of the Larch disease, ample opportunity is offered in exhibits from the forests of Athole and various other parts of the country, where the Larchwood both in an unsound and healthy condition are shown. A root cut of Larch, said to be one of the first introduced into Scotland, by Mr. Menzies, of Culdares, may also be seen by the curious, as well as a young tree in a tub

covered with the aphis, that well-known pest of Larch plantations.

Transplanting Machines. — Several transplanting machines, both on the old and improved styles, are shown. One with two wheels, similar in all respects to the Janker now in general use for transporting heavy timber, seems, from its simplicity of construction, and the great lever-power attainable, to be a machine well worthy the attention of those engaged in transplanting. Another, with four wheels, but of rather unwieldy construction, must be of great value for town or park work, where, by transplanting large trees, immediate effect is at once obtained. Trees up to 10 tons in weight can, it is said, be readily removed by this machine. The same exhibitor, Mr. James Whitton, gardener, Coltness, Wishaw—who, by-the-bye, seems to have devoted no little time to improving the machines of his fellow-craft—shows a very efficient as well as simple plan of removing shrubs, whereby the ball is preserved intact —a matter of much importance in dry weather, and where plants destitute of fibrous roots ars being transferred to a distance. Messrs. John Greig & Son, engineers, Fountainbridge, Edinbugh, exhibit what is, perhaps, the most handy and at the same time efficient transplanter we have yet seen. The Sycamore tree shown within its frame was lifted by the machine out of Turner's nursery, and conveyed to its present position, where ample opportunity is offered for a thorough inspection of the simplicity and efficacy of this valuable machine in transplanting as well as transferring to a distance trees and shrubs of average size.

The numerous collections of tools, many of improved design, are well deserving of more than a passing notice, and will, we hope, be fully dealt with in an early number of this paper.

The Collection of Conifers in the grounds of the Exhibition is a feature of great interest, giving in a very limited space no bad general idea of the varied beauty of form and tint to be found amongst Conifers, even in the early stages of their growth. The time of year at which the grounds were planted made any large use of deciduous trees an impossibility; nor, as a general rule, does their distinctive beauty show itself at so early a stage of growth. Many of the Conifers are perfect miniature trees even at a few inches high, and others vie in beauty, even at that size, with greenhouse Selaginellas and Lycopodiums. But to limit an inspection of the Conifers to be seen about Edinburgh to this collection would be to carry away a very imperfect idea of the variety of choice kinds to be found here; and the extent to which their culture is carried in some of the Edinburgh nurseries is in itself a point of interest. The collection at Redbraes, at Messrs. Methven's, and the Lawson Nurseries, are well-known examples. This latter collection is one of the best in Europe, not only from the quantity, but from the choiceness of many of the kinds to be found there, not least in interest being the first introduced plants of Cupressus Lawsoniana (another plant is, however, also grown in the Botanic Garden as the "first raised plant" of it). The introduction of this beautiful Conifer and its varieties has added so large an amount of beauty to evergreen culture that its connection both with the name and first introduction in itself gives an interest to the Lawson Nursery. By far the best specimen at the Exhibition of the Umbrella Pine, Sciadopitys verticillata, is that in Messrs. Veitch's collection. It is the finest in Europe, but the slow growth of this Conifer is remarkable. Its first introduction was in 1855, yet most specimens are of but small size; and in the section of the wood to be seen among the Japanese exhibits, the annual rings are of extremely small size. These specimens of the wood of Conifers in the Japanese section of the Exhibition add much to the interest of the plants themselves, and some of the wood is of great beauty, especially that of Juniperus chinensis. There is a specimen of Cryptomeria japonica 4 or 5 feet across. The Retinosporas (classed in the Japanese collection of woods as Thuias) are well represented amongst the different collections out-of-doors. Perhaps no class of Conifers show their beauty of form and colouring at an earlier stage, nor have greater variety in foliage and habit of growth. Retinospora obtusa gracilis, in Messrs. Methven's collection, is good. A specimen of the well known R. plumosa aurea, 8 or 9 feet high, in the Lawson collection, shows that, if one of the commonest, it is also one of the most effective kinds. In the same collection R. filicoides and R. lycopodioides are very distinct, as is also the pretty R. obtusa alba nivea, and even when small plants of R. tetragona aurea and R. pisifera argentea variegata are very effective. R. squarrosa Veitchii resembles R. ericoides, but is more glaucous and grows more freely.

The numerous varieties of Cupressus Lawsoniana are largely exhibited, and many as are the forms even amongst the unvariegated kinds it would not be easy to find one not worth growing, varying as they do in habit and in tints of green. One of the most graceful of the forms of this Cupressus in the Lawson collection is C. L. pyramidalis alba spica, and C. L. ericoides, like a finely cut Selaginella, is equally good. C. L. argenteo-variegata and C. L. aureo-variegata are effective, but still more so is the bright golden C. L. lutea, with suffused golden variegation. Beds of this form in the Lawson Nursery show its effectiveness for massing. C. L. argentea (grown in the nursery, but I did not see it in the Exhibition) differs from the better know C. argentea variegata in having a suffused variegation, which though not very pronounced keeps true through the whole year, and is sufficiently distinct to be worth growing. Another very distinct form is C. L. filifera curiously like Retinospora leptoclada. Cupressus nutkaensis (Thuiopsis borealis) nana compacta, at the nursery, is much better than the typical form as represented at the Exhibition. Cupressus Corneyana is very like a Dacrydium, as is also Frenela australis, which is not hardy here. Dacrydium Franklinii is however quite hardy; its graceful drooping habit is well seen in the Pinetum at the Botanic Garden, where there are plants 7 to 8 feet high, and from 6 to 8 feet through. This Pinetum, where the soil is not a suitable one, is a good though rather severe test of hardiness as to some of the choicer kinds, whose beauty in many cases shows far better in these larger specimens than in the small plants to which nursery collections are usually limited. Biota japonica pendula, in the Lawson collection, is a graceful plant, and Chamæcyparis sphæroidea variegata, and Juniperus virginiana alba spica are effective even when very small. Amongst other Junipers J. virginiana glauca is a good contrast in colour to J. japonica aurea. The latter is quite distinct from the better known and bright golden J. chinensis aurea. Of the Japanese Juniper, there is a specimen in this collection about 8 feet high, and another Japanese species, J. Schottii, somewhat resembles it; where miniature Conifers are required, J. hibernica compacta is one of the smallest.

There is at the Lawson Nursery a specimen of the golden Larch, Pseudo-Larix Kæmpferi, about 7 feet high, but its foliage is best seen in autumn. For golden foliage in winter, Pinus sylvestris aurea promises to be an effective form; a small plant tried in Ireland kept its bright golden colour all through the winter. There is a silver variegated form of the Scotch and of the Austrian Pine, which, if they succeed well, will have a soft and pretty effect where judiciously planted. Beautiful as the Cryptomerias are, the typical form is better for outdoor planting than the variegated one; as even in the South of Ireland the variegation is apt to become brown in winter without protection. Arthotaxus selaginoides and A. cupressoides are well shown in Messrs. Little & Ballantyne's collection. If hardy in the South, they must be well worth growing, as they are very distinct from most other Conifers.

Amongst other specimens of the graceful Abies Albertiana are some in Messrs. Methven's collection, raised from seed which ripened near Edinburgh. Its beauty is far better seen in the larger specimens in the Botanic Garden. For a heavy, damp soil, this is an excellent tree. Abies Veitchii, from Japan, in Messrs. Veitch's collection, has very silvery foliage; and another Japanese kind, A. Alcoquiana, shows the white lining of the leaves through the somewhat yellow-green foliage, giving a beautiful sheen of silver through the tree. Abies Webbiana, in the collection from Messrs. Reid, a Himalayan species, has large silver-lined leaves, and is very effective, but it is difficult to grow successfully. Abies concolor is a good glaucous form, exhibited by Messrs. Ireland & Thompson; and Abies Pinsapo glauca is fairly glaucous. It, or the type, should be grown in every collection, as the foliage is so distinct from other Conifers. But for beauty of varied glaucous tints when seen in bright sunshine, perhaps no Conifer surpasses the glaucous form of Abies nobilis.

Many of the Conifers are almost equally well shown by different exhibitors; amongst others some of the following:—Abies Pindrow, with large foliage; Picea orientalis, with peculiarly small compact leaves; P. Morinda, not rare, but very graceful; P. Pattoni, with small short leaves; P. Hookeriana, like Cedrus Deodara, without its drooping habit; P. acicularis, with yellow-green foliage, slightly drooping in habit; as is also P. Tsuga Sieboldii; Abies Nordmanniana, with flat shining foliage; A. lasiocarpa, with leaves far apart; A. Fraseri, with small foliage, and A. magnifica. The pigmy Picea clanbrassiliana, and Pinus Laricio pygmæa (which seldom exceeds 18 inches in height), are good examples of miniature kinds. Of different species and varieties of Pinus there are many examples, but their distinctive characters are less striking in so small a stage of growth than are those of many of the other Conifers. The best specimen of the variegated Wellingtonia gigantea is one from Messrs. Hartland, of Cork. The Redwood, Sequoia sempervirens, is not well represented amongst the out-of-door collections (there is a small specimen of S. s. glauca in the Lawson collection), but there are magnificent specimens of the wood in the Exhibition.

PLAGIANTHUS LAMPENII.

We received this lately from Mr. Smith, of Newry, under the name of P. Dampieri, and with the following excellent recommendation:—"A perfectly hardy shrub against a wall, a prodigious bloomer, with sweet-smelling flowers, and much superior to P. pulchellus," flowers of which were sent for comparison. Not recognising the plant, and being unable to find the name P. Dampieri in books of reference, we endeavoured to ascertain the history of the plant, with the following results:—

P. Lampenii was originally described by our late modest and accomplished friend, so long connected with the Royal Horticultural Society, Mr. W. B. Booth. The name and description were taken up by Dr. Lindley in the *Botanical Register*, vol. xxiv., p. 22, 1838, where a full description, without a figure, was given. Although we have not been able to find an authentic specimen of P. Lampenii for direct comparison, we have no doubt that this is the same plant as Mr. Smith's. It is a native of Tasmania, and was referred by Sir Joseph Hooker in the *Flora of Tasmania* (1860), and later by Mr. Bentham, in the *Flora of Australia*, to P. sidoides. We have, however, little doubt that neither of these botanists had the opportunity of comparing authentic specimens, but relied on description only. At any rate, it is quite clear that our present plant has nothing to do with P. sidoides, but is much more nearly allied to P. pulchellus. Indeed, by Dr. Asa Gray our plant, or what we believe to be the same, is referred to as P. pulchellus var. β tomentosa, which Hooker, in the *Flora of Tasmania*, says that he was for some time inclined to retain as a distinct species, but after a very careful comparison of many specimens, was obliged to reduce it. From a botanical point of view this is probably the correct course, but as the plant is so very distinct for garden purposes, we have not hesitated here to consider it as distinct, and to restore Booth's original name. Booth tells us that it was raised from seed sent from Van Diemen's Land (Tasmania) by the Rev. Robert Lampen, of Probus, near Truro. The general character of this attractive hardy or half-hardy shrub is sufficiently indicated in our illustration (fig. 39). Tasmanian specimens from Archer and Gunn seem exactly to correspond with Mr. Smith's plants, and in Tasmania it is said to grow in rich alluvial soil by the banks of rivers, and to become somewhat unsightly by the loss of its lower leaves. Full description and synonymy will be found in the works cited. If our identification be correct, the following note* will give the synonymy of this species. *M. T. M.*

Olearia Haastii.—As seen just now in the Royal Horticultural Society's gardens at Chiswick, this is one of the most beautiful of our compact-growing flowering hardy shrubs. In habit it resembles a dwarf Box bush, and the different specimens are covered with white Hawthorn-scented flowers. A figure was given in our volume for 1872, p. 1195.

* Plagianthus Lampenii, Booth, in Lindley, *Bot. Reg.* (1838), p. 22; Masters, *ut supra*.
P. pulchellus, A. Gray, *Bot. U. S. Expl. Exped.*, i., p. 181, var. β. tomentosa; Hook. fil., in *Flora of Tasmania*, vol. i., p. 49 (1860); Sida tasmanica, Hook. f., in *Hook. Journ. Bot.*, ii., p. 412.
P. sidoides, Hook. fil., in *Hook. Journ. Bot.*, ii., p. 464; *Bot. Mag.*, i., p. 275, et in *Flora of Tasmania*, *loc. cit.*; Bentham, *Flora of Australia*, i., p. 88 (1863).

PLANTING OF TREES AND SHRUBS.

It would be well if the necessary preparation of the land, such as fencing-in, draining, trenching, &c., which must precede the planting of either fruit or forest trees and shrubs, were performed at an earlier period than is generally the case, or at all events that it should be completed in time to allow the operation of planting being performed at the most suitable season of the year, viz., early autumn. The advantages of transplanting at this period are manifold, and universally admitted; but from various causes it frequently happens that the completion of the necessary preparation of the soil is delayed until it is found necessary to perform the operation of planting as late as mid-winter, when the condition of the weather will permit this to be done, or to defer the same until the spring, which is greatly to be preferred to winter planting. There is, however, no doubt that early autumn is by far the best time to transplant trees and shrubs, of whatever kind they may be, as, however carefully and skilfully the operation of transplanting may be performed, a certain amount of root mutilation must necessarily take place. But if it is done during early autumn, while the soil still retains a considerable portion of the warmth imparted to it by the summer sun, the process of reparation will commence forthwith, and before the winter sets in the plants will have become established in their new position, and will be as able to resist the rigours of a severe winter, or the bitterly piercing winds of March, as plants which have not been moved. The case, however, is very different where the planting has been delayed until winter, when the temperature of the soil is at the lowest, and when anything like reparation of injury to the roots cannot be expected to make much, if any, progress, and the plants consequently become an easy prey to the cutting winds of the approaching month of March.



Fig. 39.—Plagianthus Lampenii: flowers greenish-white, fragrant: hair from stem and pollen magnified. (see p. 200.)

In most cases where the land cannot be got ready to admit of autumn planting, it is advisable to delay the operation until the month of April, when the sap will have commenced to move and the feeding roots have become active; injury to the roots (if not too severe) will then speedily be recovered from, and if the season prove favourable the operation of planting will be in all respects a success; indeed many successful planters are inclined to give preference to this month for the transplanting of evergreens especially; but when very dry weather sets in, repeated waterings and mulchings are absolutely necessary for such recently planted trees.

In the case of plantations of deciduous or forest trees of considerable extent, where the attention of watering would be unlikely to be attended to, it is advisable to avoid late spring as well as mid-winter planting, and to defer it until the early part of the following autumn; and by doing this the progress of the plantation would be by no means retarded, while the land intended to be planted need not be unoccupied, but might during the summer months be made to produce a remunerative crop of Potatos, Carrots, or Onions, and this would leave the land in admirable condition for receiving the trees at as early a period as might be desired during the following autumn.

During the winter of 1882—83 I witnessed an instance of the evil of late planting in the grounds attached to a recently erected building, which could not be got into condition to admit of tree planting until after the middle of the month of February had passed. The situation was much exposed to the winds from all quarters, and the various species of trees with which the grounds were to be planted had to be removed from sheltered situations, where they had been planted for several years. They consisted of Wellingtonias, some 5 feet high, and various other species of Coniferous trees, together with the usual kinds of evergreen and deciduous shrubs, mostly of considerable dimensions. I expressed apprehensions as to what might be the effect of unfavourable weather during the approaching month of March, and suggested deferring the transplanting until the month of April; or, better still, until the early part of the succeeding autumn. An immediate effect was, however, desired, and the plants were, with every possible care, planted forthwith, and carefully staked, &c., where necessary, and this was barely accomplished when winter set in in earnest, as it will of course be remembered that the only winterly weather experienced during 1882—83, was during the month of March, and the consequence to the trees and shrubs in question was just what might have been expected: they nearly all perished, and had to be replaced by others during the early part of last autumn, and which at present have every appearance of doing well, although one can hardly help regretting the loss of so many plants, which would doubtless have succeeded had a more favourable season been selected for transplanting.

Not only are trees and shrubs often planted at the wrong season, but they are also frequently planted in other respects injudiciously. In all cases where the condition of the land about to be planted renders draining necessary, the drains (if a proper outlet can be secured) should, as a rule, be made deeper than is generally done in the case of land used for ordinary agricultural purposes, and the trees should never be planted immediately over the drains, nor yet, so far as it can be avoided, should they be planted in very close proximity to them on account of the tendency of the roots to find their way into the drains and by choking them up in time render them inoperative.

The not unusual advice given to planters, to plant thickly, and to thin out in time, is hardly explicit enough, for unless something like discrimination is exercised in the planting the thinning out is rendered very difficult, and it will frequently be found to necessitate the sacrifice of plants, which it would be desirable to retain, if they were not in too close proximity to other valuable plants, and this being the case it is necessary to either sacrifice one of them, or to spoil both. To obviate this inconvenience it is always advisable, whether the materials be forest trees or ornamental shrubs, to plant first those plants which may be expected to ultimately form the plantation at such distances apart as will permit the full development of each plant, and when this has been done with a view to immediate effect, as well as to afford shelter and encourage the growth of the more valuable specimens, fill up

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with the more commonplace species, which may be gradually cleared away as additional space is required by the more choice varieties of trees and shrubs, so that the process of thinning out will thus be rendered easy and satisfactory.

A fine well formed tree is an object from which few observers can withhold their admiration, but when this occupies an objectionable situation that circumstance detracts greatly from the pleasure which would otherwise be experienced in looking upon it. This, however, is frequently found to be the case, more particularly in towns and in the surroundings of villa residences, where the most incongruous arrangements as regards trees and shrubs are frequently found to exist, and I have seen in very small enclosures, or even in front gardens of very limited extent, such species as the Spruce Fir, the Scotch Fir, the Austrian Pine, and even the Wellingtonia, or "the big tree" of California, planted in very close proximity to the windows and doors of dwelling-houses; while as a rule trees of considerable altitude should never be planted very near to buildings of any kind, but particularly to dwelling-houses, as they in the course of time dwarf, as it were, or detract from the imposing appearance of such buildings, and are during the not infrequent violent gales which are experienced objects of very considerable danger, as fatal accidents have on several occasions occurred from the falling of such trees; there are, however, various trees and shrubs of more or less dwarf habit of growth which are suitable for planting near to buildings when this is desired.

The weather during last autumn and present winter was exceptionally favourable for the conducting of all operations connected with tree planting. In this part of the country at least the soil cannot be said to have been even once frost-bound, and where planting was performed before Christmas the weather has been such as to allow the plants to have become somewhat established in the soil, and all that was necessary was to carefully examine, and if they were found "wind-waved" or at all loose in the soil, to tread the same firmly to them, and to stake them where found necessary, so as to enable them to withstand the keen cutting winds of the month of March, which is, of all the months of the year, the most trying for newly planted trees and shrubs, as well as being possibly the worst month of the year in which to transplant them. *P. Grieve, Bury St. Edmunds.*

BEGONIAS AT SWANLEY.

There are few, if any, plants ever taken in hand that have more readily conformed to the manipulations of the hybridiser than have the present race of single and double tuberous Begonias, now so much in demand for greenhouse decoration. Within the last two or three years much has been done to correct the somewhat loose habit of growth that marked the early raised varieties; compact growers like B. Davisii and B. Pearcei have made their mark on the varieties which owe more or less of their parentage to these kinds. The double flowered sorts that have recently come into existence exhibit extraordinary development in the size and structure of their flowers, some being almost as big as moderate-sized Pæonies, which they resemble in their confused centres, others again with prominent guard petals have the centre of the flower made up of a series of petals as even almost as those of a well formed cup-petalled Rose. But like many other plants that have been produced quickly such a number of varieties have come into existence that they are perplexing, as, in addition to those that have been raised in this country, many have made their appearance from the Continent, where such raisers as Benary, Crousse, and Lemoine have produced some splendid sorts. The following are a few of the best and most distinct new and old varieties from amongst the thousands of plants that fill several of the long houses devoted to them at Swanley.

Double kinds:—Ruhm von Erfurt, a beautifully symmetrical flower of medium size, an indescribable glowing scarlet, the finest of all the double scarlets; Felix Crousse, red, a very fine sort; Blanche Duval, creamy-white, tinted with pink; Rosamonde, a beautiful shade of pink, flowers very full; Bastein Lepage, bright salmon, very full flower; Monsieur Duvivier, light vivid crimson; Jean Soupert, salmon, shaded with Indian yellow; Madame Comesse, rosy-salmon, a full-sized flower; Monsieur Bauer, orange, shaded scarlet, large and double; Marie Lemoine, flowers deep salmon, beautiful habit of growth; Eclat, a double form of B. Davisii, a profuse bloomer, flowers orange-scarlet, medium-sized; Lucie Lemoine, pure white, a lovely sort with erect flowers; Comtesse H. de Choiseul, light salmon, shaded with red, dwarf, and a free bloomer; Gloire de Nancy, crimson-scarlet, flowers large; Mrs. Laing, cream, shaded with blush, centre yellow and blush, a fine sort; Madame Castaignez, a deep glowing pink, one of the best; President Burelle, rich scarlet, beautiful habit; Esther, deep crimson; Sulphurea, shaded sulphur, a beautiful distinct sort; Agnes Sorel, light blush, with deeper coloured centre.

Single sorts:—King of Kings, an excellent compact habited sort, with beautiful shaped large flowers, one of the highest coloured varieties that has appeared; it is an intense deep crimson, darker and brighter than the zonal Pelargonium, Henry Jacoby; Total Eclipse, a seedling of Mr. Cannell's, a fine bold flower, very free bloomer, and one of the most vivid coloured varieties that has ever appeared, crimson; Rosea magnifica, rosy-pink, a fine flower, with broad petals, a profuse bloomer, of compact habit; Mr. Midson, large and free, of excellent habit, crimson-scarlet; Viana, an immense flower, of fine shape, colour bright red, a free bloomer, stout and compact in growth. Mr. Aird, deep glowing crimson, a large bold flower; City of London, an immense flower, colour crimson with a shade of violet. I measured a flower of this that was fully 6 inches across. Another not yet named, and one of the finest, has very large circular flowers, with broad petals of great substance, intense glowing scarlet, identical in colour with the double variety Ruhm von Erfurt; Hon. Mrs. Brassey, glowing crimson; Mademoiselle Pessoneau, silvery-white, changing to blush; Wonder, buff, base of petals orange; Rosea superba, beautiful rose colour—one of the best of its colour; Royal Standard, dark crimson, compact habit, profuse bloomer; Miss Briscoe, pale salmon, white centre; Rêve d'Or, a beautiful yellow, excellent habit of growth; Alba floribunda, pure white; Countess of Kingston, intense crimson—a large sized compact flower; General Roberts, deep crimson, free and fine in shape; Annie Laing, rosy-pink—the best of its colour; Salmonea magna, bright salmon—a large-flowered free-blooming sort. These, some of which are quite new, may be relied on as a good representative selection.

Variegated leaved.—When Begonia Rex first made its appearance there were comparatively few fine-leaved plants in cultivation, and it made quite a sensation, the peculiar silvery sheen of its leaves being much admired. This class of Begonias are not only handsome but they are exceedingly useful for decorative purposes, as they can be stood in rooms or shady places where things of a less accommodating character would not succeed, but, nevertheless, this section of the family has of late years been neglected, and many who still grow them confine themselves to the old varieties, many of which have too much sameness about them, and for general effect are much inferior to the newer kinds. Mr. Cannell has made a speciality of them, and has got a number together remarkable for the distinct and beautiful markings of their leaves which in every way are deserving of cultivation, especially where there is a Fern-house, amongst the occupants of which they have a charming effect. The undermentioned are most distinct and quite out of the ordinary run of the older sorts:—Monsieur Craevelle, dark centre and marginal band round the outer edges of the leaves, which are of a medium size, broad silvery marbled zone. Theodora, very large leaves, with deep olive centre surrounded by a broad silvery zone, margin dark; the surface of the leaf is thickly studded with reddish-crimson hairs, giving it a pretty appearance. Louise Chrétien, black-green centre with vivid bright green zone, shaded with silvery-white, outer margin reddish-brown. Mademoiselle Emma, feathered centre, nearly black-green in colour, zone bright green shaded with white, margin as dark as the centre. Lerme, dark bronze feathered centre, shining steel coloured broad zone, olive-green margin mottled with white. Berthe Proutière, centre deeply marbled, remainder of the surface palest green shaded and marbled with metallic white. Navala, deepest olive-green, feathered centre, the broad irregular zone covered with a mixture of vivid light green and white, margin bronzy-green. La Perle de Paris, the whole leaf blade silver, shaded with crimson; nerves reddish-crimson. President Bolle, centre blackish-brown, intense green zone, irregularly silvered, margin green. Andalusie, centre very dark, pale zone marbled and mottled with white, outer edge reddish-brown. Madame Bonnell, deep green nerves running from centre to margin, the intervening spaces spotted and mottled with white. Duchess, most of the surface metallic, shaded white, margin deep green. Adrien Robine, large leaves, very distinct in appearance, the whole surface of crimson shade freckled with white, outer margin thickly spotted. Fire King, leaves reddish-brown, shaded with crimson, the entire surface profusely studded with crimson hair-like glands; a fine sort. This section of Begonias is difficult to describe, but the above are distinct and handsome varieties, differing much from the usual sorts met with. All have large and medium-sized leaves. *T. B.*

The Rosery.

Rose Realities.—Never has the saying, "Never prophesy until you are sure," been better illustrated than in the character of the Rose season of this year, which may now be said to be finished, for although we shall look forward to seeing many a fine bloom, especially amongst the Teas, yet the grand rush, the great plethora of bloom, is over. I speak not merely of the exhibition Roses, but of all the various species and varieties which are used to decorate our gardens; most of these are essentially summer Roses, and although a great deal of fuss is made about the season for exhibition Roses, and we are often reminded what grand posies of the flowers our forefathers used to have, I think that it may be recognised as a fact that the best and most lasting decorative Roses are to be found amongst exhibition kinds, that the Roses of our gardens used to flower in June, and then not a Rose was to seen. We have now no "last Rose of summer," our hybrid perpetuals and Teas bloom on until late in autumn, and it is no unusual thing to gather a Rose of good quality in November.

But I must return from this digression. I wrote early in June that there was every prospect of a good season, and such was the general opinion. I did venture to put in a saving clause, to the effect that everything depended on the weather of the next two or three weeks, and added in a postscript that already a change for the worse had taken place, and that various plagues had attacked the plants. Those two or three weeks did all the mischief, and instead of an exceptionally good season, we have had, if not a bad one, certainly not a good one. In the month of June we had, when the buds were about half formed and the colour begun to show in them, a period of cold weather, the thermometer frequently not rising above 52° in the shade, and falling as low as 43° at night. This at 4 feet from the ground, and in the South of England, implies a much lower degree on the grass, and especially in the midland and northern districts, where we heard even of frosts at that period. The buds remained absolutely without change; there was no rain to induce them to swell, and there were cold winds from the east and north-east, which had a very chilling effect upon them. Then came that sudden burst of hot weather in the beginning of July, when the thermometer rose into the 80's, and still without rain in many parts, although others were more favoured. The result was that the Roses were literally forced into bloom, and consequently were deficient in both size and substance. They soon gave in in the exhibition tent, and after a couple of hours' exposure in the stifling heat to which they were exposed in the tent, with the thermometer outside at 80°. I may mention as a proof of the inferiority of blooms at some of our earlier shows, that in judging two boxes of nearly equal merit, and going through them by points, allowing three for a really good Rose, in the two boxes there was hardly one that gained the three points, and that the collective number did not reach, in any case, the number of Roses exhibited. That is not one-third of what they might have done. When the rains came the Roses improved, although I do not think that all through the season they were equal to those exhibited last year. There was one class of exhibitors on whom this told severely—amateurs who grow a few hundred plants, and are as eager for the fray, perhaps more so, than many who, possessed of ample means and large collections, do

not bestow upon them that personal care which makes every Rose bush a friend. They watch with earnestness their three or four dozen blooms, from which they hope to cut their dozen or more blooms as the exhibition day comes. Such weather as that completely destroys their hopes, their blooms are either shrivelled with the heat or are so thin that they begin to show their eye and stare the judges in the face, much to the discomfiture of their owners, and hence an unusual number of entries fell through at most of the earlier exhibitions. Another effect of it was that it interfered with the position of many growers. Thus the holder of the Amateur Challenge Trophy last year was nowhere this season—his soil is light and his position a warm and sunny one—the reverse of what was wanted this year. Happy were they who had a good Rose soil and a cool piece of ground on which to grow their Roses, for while even they complained of the dryness of the season they had an immense advantage over those in localities where the soil was lighter and the situation more exposed.

That there has been no diminution in the interest attaching to this flower the increased number of exhibitions testify sufficiently, at all of which numbers of amateur Rose growers in *esse* and in *posse* are to be seen eagerly scanning the boxes, and taking notes of the flowers, and who are continually asking the question—Which is the best new Rose? But the remarkable fact comes to the front, about which it is difficult to find any explanation, that every season one or two particular Roses stand forth as everywhere good. The dryness of the season has been peculiarly favourable to light-coloured Roses, and not so to the dark-coloured sorts. Charles Lefebvre has been but indifferently shown, so have indeed A. K. Williams and Marie Baumann, except in a few instances. Mr. Hall showed a magnificent bloom of A. K. Williams at Manchester, in size and substance everything that could have been desired, but unfortunately a little gone in colour, but with the same variety he took the prize for the premier bloom in the show at Sheffield, while the Marie Baumann of Messrs. Mack at Darlington left nothing to be desired, but the very fact that these remain in one's memory shows that they were exceptional, but it would be difficult to pitch upon any particular bloom, for example, of Merveille de Lyon or Madame Lacharme, exhibited this year, for they were so uniformly good. Then again such Roses as Mons. Noman and others of the Victor Verdier type, evidently delighted in the bright, clear weather; but unless by shading it was quite impossible to preserve such flowers as Abel Carrière, Prince Camille de Rohan, Louis van Houtte, Reynolds Hole, &c. It was singular to notice, too, how fine some old Roses that we had almost forgotten came to the front; for example, that fine old Rose, Madame Charles Crapelet, so like Beauty of Waltham, was exhibited in a great many instances in fine form; then who can readily forget the blooms of the old Général (Jacqueminot), exhibited by Messrs. Curtis & Sandford at South Kensington, so glowing in colour, so fine in texture, and perfect in shape.

But one of the most remarkable evidences of this was that of that old and favourite Tea Rose, Jean Ducher; no matter where it was exhibited—north, south, east, or west—it was in good form, and that in in a season when Tea Roses were certainly not up to their average merit: the cold weather which had so affected the hybrid perpetuals affected them, the exception being those of Mr. Prince, of Oxford, who showed in fine style; but even he said that they were not equal to his usual standard. Can any one forget, however, the superb stands of that most lovely of all Tea Roses which he showed at South Kensington and Salisbury—Comtesse de Nadaillac, a Rose whose marvellous mixture of colour defies all description, but whose refined beauty is of the very first character? But as I have said, Jean Ducher, by whomsoever and from whatever place shown, was the Tea Rose of the year: why it should have been so, who can tell?

There was probably no Rose which excited so much admiration amongst the ladies as the very pretty American Rose, William Allen Richardson. Mr. House, of Peterborough, exhibited trusses of it everywhere, and everywhere there were to be found admiring crowds around it; at Liverpool I saw barristers in wig and gown, and fair ladies standing round them. It is a peculiar coloured Rose, somewhat in the style of Ma Capucine, a bright orange flower, not perhaps so brilliant as that flower, but having the advantage of being a robust grower, while that is not; it is not an exhibition Rose, but as a buttonhole flower is most desirable. Garden Roses were not much seen, and an attempt to get a collection of Moss Roses at Darlington proved a failure; but let us hope that more will be done next season—the National Rose Society will then have published its catalogue of garden Roses, and I cannot but hope that next year it will introduce into its schedule a class for them, the Roses to be selected from those in the society's catalogue. Rosa rugosa has been shown, and has been much admired, but we hope for more increased attention to this class. I may in a future paper give some short notes of some of the newer Roses. *Wild Rose.*

Rose Bengale, Ducher.—A Rose raised by M. Ducher, and having much of the appearance of a Tea. The flowers are full, well-formed, solitary or in trusses, described as pure white, but the coloured plate shows the outer petals white, the central ones pale sulphur-yellow, and the outer surface of the petals, while in the bud state, pale pink. In the *Journal des Roses* it is said to be the only white Bengal Rose of really vigorous habit.

Rose, Madame Prosper Laugier.—A seedling raised by M. Eugène Verdier and largely cultivated at Brie by the market Rose growers on account of its beautiful buds. The flowers are full, large, with rosy-coloured petals, reflexed at the edges.

HOW TO GROW NARCISSI.

When these charming spring flowers had on their gayest dress much was said and written about them—sure evidence of their universal popularity; but I have looked in vain for some timely hints concerning them in the last few issues of the gardening periodicals, although it would be difficult to estimate the result of a few practical hints at the present time. Generally they are planted much too late in the season. I have known of hundreds of instances in the last two seasons of this mistake being made, in many cases most likely through an insufficient amount of forethought in reserving proper quarters for them; but I have no doubt in the majority of cases a certain amount of ignorance as to the right culture of Daffodils, coupled perhaps with indifference, led to their being kept out of the ground till October and November. Now nothing is so prejudicial to the first year's blooming as late planting; they should all be in the soil at latest by the end of August, the earlier in the month the better; this opinion is shared and practically acted upon by those best acquainted with their real requirements. Mr. Burbidge is always urging early planting; indeed, if practicable, I believe he gets his bulbs in during July. There is a great advantage in this, for they start rooting at once, and quite establish themselves before winter sets in. If you examine bulbs which have not been disturbed you will find new roots are already emitted in abundance from the base of the bulbs, from which any one willing may learn a lesson as to planting.

Narcissi should remain undisturbed for at least four seasons, when they should be lifted, divided, and replanted; every year they should receive an autumnal top-dressing of good, well-bodied manure. A gardener the other day was planting some excellent varieties in a starved soil without a particle of manure; but its value was suggested, and exercising common sense all the bulbs were lifted and replanted with a liberal supply of manure. The top-dressing of bulbs already established may be effected at any time now; the following plan is adopted with success. The surface soil is carefully removed down to the bulbs without disturbing them, and a good layer of manure should then be placed about them, and the soil put back in its old position. Of course, it is difficult to practise this method where no recognised system of planting has been carried out, but I would strongly urge upon all attempting Daffodil culture to plant and label systematically, so as to better appreciate the different varieties. In private gardens, I think they are best planted in clumps; in trade establishments, in lines.

Generally, Daffodils enjoy a rich, well-bodied, well-drained, deep loam; of course there are a few exceptions, but all those favourite varieties, such as maximus, Horsefieldi, all the forms of bicolor indeed, all the trumpets, Peerless, and Poet's varieties—thrive best in situations where these conditions exist. Such soil liberally assisted with manure will produce good bulbs, and consequently excellent flower development. During the last week or so I have planted several kinds in a special bed. The soil was dug from 15 to 18 inches deep, all the manure was placed beneath the bulbs, with but a slight sprinkling of soil over it, and the bulbs were arranged 5 or 6 inches beneath the surface. I quite think, as a rule, bulbs are planted much too shallow; the late Mr. Harpur-Crewe, one of the most eminent bulb growers, was a great advocate of deep planting, many of his clumps being 10 or 12 inches deep, and yet in the finest condition. The Corbularia section enjoy a rich sandy loam, with thorough drainage; also N. triandrus, calathinus, tenuior, and Macleai; under such conditions they thrive fairly well. The charming white and sulphur forms of Bulbocodium require a sunny position, when a thorough ripening of the bulbs will be ensured. After the foliage is withering, the clumps should be covered with a hand-light cover, to prevent the ground which they occupy becoming wet with rain: this will materially assist to ripen them.

Daffodils for Greenhouses.—There is a great future before these for conservatory and cool-house decoration; there is no reason why they should not be enjoyed from Christmas, or shortly after, until they come into bloom naturally outside, if successive batches are arranged for. Some should be potted up at once, say four or five bulbs in a 6 or 7-inch pot of rich soil, which should be plunged in ashes in a cold frame, when they will root freely, and when the roots are well drawn they may be stimulated with gentle heat; never subject them to strong heat, or the result will not be so desirable. They will gradually come into bloom, and last a long time in a cool temperature. I have repeatedly found the following excellent varieties for this purpose, viz., bicolor, Horsefieldi, Empress, Emperor, moschatus, Pseudo-Narcissus flore-pleno, minor, rugilobus, maximus, incomparabilis vars., especially "Butter and Eggs" and "Codlins and Cream"—the latter is especially beautiful under glass; tenuior, all the Tazetta or Polyanthus vars., poeticus ornatus, and the double variety, but the latter is best not forced till the end of February or March. Undoubtedly this list might be greatly extended, but those enumerated constitute a very beautiful series. *Bulbophile.*

THE STARLING AND ITS SERVICES.

Just at the same time as your notices about the damage to Oak forests in Belgium by Tortrix viridana appeared, the following observations of Mr. Holten, Maarum, were published in a Copenhagen daily paper. Thinking them of some interest to your readers, I translate and send them to you:—

"As is well known, the starling in the last years has almost become a domestic animal by the now common practice of giving it boxes for hatching; indeed, so common is it, that there is hardly to be found a farm or cottage without several starling-boxes with their inhabitants. The result is, the starling is far more common now than formerly, and that it pays well for the little care bestowed on it will be seen from the following observations. When the young ones have left the boxes they gather together in a garden, a hedge, or a similar place, from which they are practising flying, whilst the old ones are busy catching insects, which during much noise and crying are put in their open mouths. As soon as the young ones are apt flyers and not in want of being fed, the whole company disappears somewhat suddenly. Before the autumn, when they return for a short inspection of their nests, there is hardly a starling to be seen.

This year the starlings assembled in great numbers in my garden, as they usually do, and stopped there for about a week after leaving their nests; after that time they left altogether, and not a single one was to be seen. Passing through an Oak plantation in Harrager Heyn, which was quite deprived of its leaves by a small green larva (Tortrix viridana), I found my friends at work. Here they were in thousands, and very busy devouring the caterpillars, which, however, did not occupy them long, as they were found some days afterwards at the same job in an Oak plantation in Valdby Heyn, a couple of miles westward. It seems that this plentiful and good food supply had caused them stop in these forests at a time when they generally leave this country. Probably they have destroyed all the caterpillars, and thereby prevented a renewed

attack next year, and this being so they have paid a good rent for their boxes."

So far Mr. Holten and his story need no comment, or the starling any recommendation. I use the opportunity for drawing your attention to the weevil (Curculio) genus, several species of which have been very destructive and annoying here this year, one on Strawberries in pots, one on Roses, another on Peas, and lastly, one on my Pinks. Their natural history, especially if there is any preventive, would be of much interest to me, and very likely more readers. *M. P. Andersen, Head Gardener, Wrams, Gunnerstorp, Sweden, July* 24.

NOTES FROM NEW ZEALAND.

(*Concluded from p.* 173).

IN regard to public gardens, a certain amount of latitude must be allowed for the want of support and encouragement from the Government; but apart from this, the gentlemen who have been placed in charge of these gardens, which may be called Government gardens, occasionally display an incredible amount of apathy, and want of knowledge as to the true purposes for which botanical gardens are, or ought to be, established. In horticultural matters this country suffers in the same respect, and from the same causes as political affairs. Whilst I am penning these words we as a nation, colony or people, are undergoing a remarkable political crisis, and one upon which hangs the whole future of this colony. The politics of this country are easily understood, for if you can imagine two large islands nearly equal in size, and these two islands separated by natural barriers into well-defined districts, each with their harbours, railways, and other works, and each endeavouring through their representatives in Parliament to obtain the best, and even all of everything, you have a correct conception of the great difficulty experienced by a Ministry determined to please all parties. In consequence of the political and geographical nature of the colony, we have no leading town in New Zealand as in other colonies, for Auckland and Wellington in the North Island vie with each other, and with Christchurch and Dunedin in the Middle Island. From the same cause we have no public garden worthy of a name. Each town claims its share of the money voted for such purposes, whereas the sum combined would form an establishment suitable for all the country; but divided amongst the jealous provincialists it is worse than useless, and disgraces the very name of gardening. As an example of what is called a botanical garden out here, I will briefly allude to the one in Christchurch, reckoned to be the best in the colony.

Canterbury Province, of which Christchurch is the capital, or chief town, occupies the central part of the eastern side of the Middle Island, and contains a large tract of flat country termed the Canterbury Plains. These plains are, as a rule, very fertile, and constitute the "great grain growing district of New Zealand." At the head of these plains the city of Christchurch is situated, and occupies a pleasant position on the banks of the river Avon, only a few miles from the sea. The land in and around Christchurch is very rich and fertile, well watered by numerous small rivulets, as well as having a great boon in the flow of artesian wells. These wells are tapped at depths varying from 50 to 200 feet simply by driving a succession of 2-inch pipes through the loam, sand, and gravel. These wells, from a gardener's point of view, are a great advantage, and give to the gardening fraternity of Christchurch facilities by which perfect paradises might be brought into existence. Besides being well watered this city has a climate highly conducive to vegetable growth in the great variety of weather found throughout the whole year, namely, a few days' bright weather, then more rain, often making the summer almost as wet as the winter. Occasionally we have a few weeks of drought, and now and then a good blow from the north-west, which makes a little havoc amongst the plantations and gardens such as they are, so that it will be seen that Christchurch could have enjoyable gardens and a botanic garden. The present garden is situated in a large bend of the river Avon on the western side of the city, and with the park on the opposite side of the river contains several hundreds of acres. The entrance is from a very interesting and picturesque street; in fact, the approach to the garden is misleading, because the splendid Holly hedge and long avenue of Sycamore, Birch, Alder, and Ash, with the imposing structures, as seen in the colleges and museums in close proximity to the garden gates, would certainly lead a stranger to expect something grand in the way of gardening on entering those locally made gates, which are in themselves a great ornament and a credit to Christchurch artizans. The first sight is disappointing in the extreme—no shape, design, plan, or purpose discernible in the whole place. The ground is in its primitive unevenness; the lawns (such as they are) possess no shape, and are up and down like a camel's back; the paths are either unnecessarily wide or too narrow, lead nowhere, and take no part in the dividing of the grounds; the borders are arranged anyhow, and contain a jumbled-up, overgrown, ill-grown collection of shrubs, trees, herbaceous plants and annuals. In what is called the pinetum and plantations matters are even worse than in the garden proper, no care in thinning or pruning having ever been exercised, and what would now be representing great value in timber trees is one vast series of ill-shaped, gnarled branched, and smothered trees, with no prospect of ever forming marketable timber although originally planted for that purpose.

Still this garden is not without some redeeming features, for being pleasantly situated in the bend of a beautiful river, upon whose banks Weeping Willows have been planted, it is impossible to prevent some beautiful spots forming. These Willows are full grown and extend their graceful weeping plumes in a perfect canopy of vegetation over the deep and placid waters of the Avon, giving vistas hard to be beaten. One part of this river is spanned by a rather pretty foot-bridge, and to stand on the centre of this bridge, where a full view of the water and Willows can be obtained, is a treat which many would walk miles to behold. The scene is soothing, charming, and what I should call sweetly grand, if such an expression may be used.

The collection of plants contained in the garden, if it received better treatment, would do credit to any first-class establishment. Amongst the trees there are Araucaria imbricata—a fine specimen and now bearing cones, A. Bidwilli and A. brasiliensis; Abies grandis, A. Nordmanniana, A. Fraseri, A. balsamea, A. cephalonica, and A. nobilis; Picea Menziesii, P. Douglasii, P. excelsa, P. alba, and P. canadensis; Sequoia gigantea—several fine trees, a fine specimen of Cryptomeria japonica in full bearing, C. elegans, noble examples of the graceful Cupressus Lawsoniana. This very useful timber tree grows to perfection in this colony, and will no doubt be most extensively planted. It does well in almost any position, I have myself seen it doing well in an almost impenetrable clay on highlands and on low-lying land with gravelly bottom. Last winter, when in the southern part of this district, I had the pleasure of seeing some grand forms of this tree which had been planted over twenty years; each was a perfect picture in itself, being about 30 feet in height, well furnished at the bottom, and forming broad-based pyramids. This habit, enhanced in beauty by the masses of bright red and black male catkins covering the drooping plumes of the branches, was sufficient to make even the dullest of mortals brighten up with delight. These trees, with numerous other good specimens of Coniferæ, were on the estate of the Hon. Lanceolet Walker, in the Geraldine district—a gentleman greatly interested in trees. But to return to the public gardens. Thuia gigantea, Libocedrus decurrens, and Sequoia sempervirens are represented by good-sized trees. Cedrus Deodara, C. rigida, C. atlantica, and C. Libani, Juniperus virginiana, and several other species, also give promise of coming to perfection. In deciduous trees there are all the generally grown species of English, European, and American origin, most of which grow well here. In shrubs the garden is fairly well supplied, containing many which in England must have greenhouse protection—Colletia bictonensis forming quite a feature with its phylloid branches; Hydrangea japonica cœrulea, in very large clumps, also H. hortensis. I may here mention that the Hydrangeas grow to perfection in Christchurch, and remain in bloom for a very long period. The Photinias also make handsome flowering shrubs in this garden. Drimys aromatica, a Tasmanian shrub of very compact habit, with racemes of white, globular, Erica-like flowers, is here quite at home; and with several species of Hakea, Callistemon, Melaleuca, and Grevillea, show the wide range of shrubs open for cultivation in these neglected gardens. Acacia decurrens forms large trees, and in the early spring is quite a feature in and around Christchurch, by its rich golden flowers, standing out from amongst the silvery and feather-like leaves. A part of these grounds is alloted to native plants; but any person unacquainted with the beautiful trees and shrubs of the New Zealand forests would conceive a poor idea of our indigenous flora, from what is here presented to view. A few Panax crassifolium, Drimys colorata, several Pittosporums and Leptospermum, Corynocarpus lævigatus, Olearias and Coprosmas, also a few New Zealand Birch trees, with here and there a clump of Phormium tenax, and other species of the same family; also the New Zealand rival to the Pampas-grass—I mean Poa conspicua—and Dracæna australis and D. indivisa, plants that form a great feature in the scenery of this country.

There is a very good collection of herbaceous plants, containing, but in a very bad condition, some representatives of the British flora, which I need hardly say are much prized by the colonists. But the department in which this garden excels is in the number of variegated plants and sports which have, to a certain extent, been grouped into a rather effective border or bed—Cupressus Lawsoniana lutea, Cupressus macrocarpa aurea, Cupressus torulosa aurea, in very large specimens. These three forms originated here, and have been largely propagated. Besides these there are a whole host of every conceivable variegation, and I may here mention that the Christchurch climate is very favourable and prolific in the production of sports or varieties; a sowing of almost everything is bound to have some new form in the batch, especially conifers. A short time ago, in visiting a place up country, I was astonished to come across a golden form of Pinus insignis, not arising from sickness, but one in perfect growth. The above will show to my readers the material advantages, &c., which even this part of New Zealand possesses in the way of gardening; but in the present condition of affairs the so-called Government gardens at Christchurch are utterly useless. No taste is displayed, few efforts are made to assist Nature; there is a great want of proper nomenclature, so that visitors can gain but small benefit or instruction, and very little in recreation, because the paths are covered with shifting and loose gravel, or sticky clay; the grass is forbidden ground, and what few broken down, make-believe garden-seats there are, cannot be comfortably utilised. This lamentable state of garden affairs, I ought to mention, in justice to the gentleman in charge of the above garden, is due to the niggardly support of the municipal and Government authorities. *Christopher Mudd.*

Florists' Flowers.

THE AMARYLLIS.—The present hot weather is very well adapted for the requirements of the plants at this stage of their growth. They are now ripening off, and although they have been shaded from the sun for a few hours at mid-day, when it was excessively fierce, they are well exposed to the sun, and the ventilators are open night and day. We do not now give them much water at the roots, and the atmosphere of the house is also kept comparatively dry. The black thrips have been a greater trouble to us this year than usual. They were killed night after night with tobacco smoke, but they have swarmed outside, and seem to get in, and are at work on the leaves before the day is over. The seedling plants of this year must be kept growing freely in a house where they can obtain a moist, warm atmosphere. Our plants have just been pricked out, a dozen of them in 6-inch pots. They do best with the pots plunged in a gentle bottom-heat. Syringe the young plants daily while the weather continues hot.

CALCEOLARIAS AND CINERARIAS.—These plants are grown together, and require very much the same treatment. At present they show signs of distress from excessive heat. Our earliest flowering plants have been potted into 6-inch pots, and are making good growth in a well ventilated span-roofed pit; from such strong plants as these we had last year a plentiful bloom of both from Christmas onwards. The latest flowering plants have been potted off into large and small 60's. A good compost of turfy loam four parts, one part

decayed manure, one part leaf-mould, and one part sharp sand, causes a vigorous growth, which will carry the plants well through the blooming period. They must be kept free from green-fly and thrips by fumigating, and a dwarf compact habit of growth is promoted by abundant ventilation. When it is necessary to shade from very hot sunshine, do not let the shading be on longer than is absolutely necessary. Nearly all classes of growing plants, as well as plants in flower, ought to be shaded from the direct rays of the sun, but it is a very grave error to forget to draw up the shading when the sun has gone off the plants, or if the day has become overclouded.

Cyclamens.—The market growers, and a few of the large amateurs who make the growth of this plant a specialty, obtain excellent results in the way of culture; but as a rule in many private gardens they are not satisfactory. In most cases the seeds are not sown at the right time, and the after-culture is not carefully considered. The best time to sow the seeds is in August, the first week in the month preferable to later; ours were sown on the 9th. When the seeds vegetate, and the plants have made one leaf, pot them off singly in thumb-pots, and place them on a shelf near the glass, where they must not be allowed to suffer for want of water at any time. Cyclamens do not show signs of distress for want of water so much as other plants, and they are frequently allowed to become too dry in consequence. Grow the plants on in heat through the winter and spring months, potting them on as they require it. About the end of May they may be placed in cold frames, and in the hot summer weather put the lights over them with plenty of ventilation by day, and lightly shade from hot sunshine. The lights should be pulled quite off at night, and under those conditions vigorous and compact growth is made, and a splendid head of bloom will be produced the following winter and spring months. Old plants require to be kept rather dry up to July, but after that they should be potted, and kept growing freely in cold frames; at present they are making plenty of young leaves and roots.

Pelargoniums.—We find it suits our purpose best to have a late bloom of the show section, and they were not cut over until the first week in August. The wood had become quite hard and perfectly well ripened, and as a result of this the buds are breaking remarkably strong, and giving evidence already of handsome bushy specimens. The next operation, as soon as all the buds have fairly started, is to turn the plants out of their pots, shake the greater portion of the soil from the roots, and cut a portion of them away, repotting them again in pots a size smaller. If this operation is delayed the plants receive a check from the disrooting process. Any cuttings that may have been put in will form roots in a cold frame or on a shelf in the greenhouse. The zonal type are very useful to furnish the greenhouse and conservatory with flowering plants now. We have had such a wealth of Carnation and Picotee bloom to admire up to this time, and for the last six weeks, that scarcely any other greenhouse flowers were thought of, and now that they are over a number of plants of the perpetual flowering kinds are keeping up a succession. The zonals that we find most useful, and which give us an almost indefinite quantity of bloom, are the plants that flowered so freely last winter. They were placed out-of-doors in April, and received but little attention until the beginning of July, when they were repotted, and the long rest they had has proved of great service to them. The plants intended to flower in the winter do best if they are exposed to the open air for the next month or six weeks, when they may be taken into the house where they are to bloom. It is best not to allow them to produce flowers at all up to two weeks of the time they are wanted.

Petunias.—The double varieties are very useful decorative plants at this season of the year, and they can be grown with very little trouble. Cuttings put in during the month of March would now be good sized plants well furnished with bloom. They like the same potting soil as Cinerarias, and an airy light position in the greenhouse. A few cuttings should now be taken off for winter stock; it is best to throw the old plants away when the blooming time is over. *J. Douglas, Ilford.*

Rubus chamæmorus.—A correspondent in Norway sends a further supply of this beautiful little species, gathered by daylight, or, rather, sunlight, at midnight at the North Cape on the 29th ult.

NEW BEGONIAS.

The plant represented in our engraving (fig. 40) is at once a most interesting and entirely novel variety of the Begonia Rex kind. It originated from seed of B. Alexander von Humboldt hybridised with B. argentea cupreata, and was raised by Mr. F. Nemeczek, gardener to Count Erdödy, a Hungarian nobleman. In the August number of the *Wiener Illust. Garten Zeitung*, 1883, an article and representation of a leaf appeared on this valuable acquisition, from which we



Fig. 40.—Begonia comtesse louise erdödy.

draw the above information, and a coloured illustration was published in the issue of last March of the same periodical. The leaf, of metallic lustre, appears dark silvery in the centre, shading into coppery-rose towards the margin, which itself is evenly and broadly edged in the same hue, but darker and still more brilliant. The veins are yellowish-green on both sides, accompanied by a dark green ribbon about one eighth of an inch broad, while, owing to an elegant undulation of the leaf, they run in a sort of groove close to the margin of the leaf.

The principal attraction, however, of this novelty consists in the peculiarity that the two lobes at the



Fig. 41.—Begonia diadema.

base of the leaf do not grow side by side or overlap each other, as is the case with the other varieties of the class, but continue to grow in a screw-like way, as indicated in the engraving, forming a regular spiral on the top of the leaf to such an extent that a full-grown leaf shows a spiral-shaped top of four complete windings, and nearly 2 inches high.

Leaving alone the great value of this acquisition as regards striking coloration and compact, neat growth, this strange and novel habit distinguishes it from all existing forms.

The raiser, Mr. Nemeczek, has parted with his entire stock and incumbent rights to Messrs. Pietz & Roes, of Erfurt.

On this occasion mention may also be made and attention drawn to the very pretty Begonia diadema, sent out a few years ago, of which likewise an illustration is given (fig. 41). The deeply cut smaragdine leaves of this are covered by a number of white spots of shining mother-of-pearl appearance. A most graceful and elegant plant. *O. P.*

COLONIAL NOTES.

Hops in New Zealand.—The Hop plant (Humulus lupulus), which has been introduced into New Zealand, seems to thrive well in Nelson. It is cultivated on the same system as in England, and the fine crops which have been produced are greatly due to an unexhausted soil and a fine climate. The Hop-plant delights in a deep rich loam mixed with calcareous sand, and the Nelson soils have these in abundance, hence the fine crops of that district. At least four varieties of the Hop plant are cultivated in Nelson, propagated by cuttings taken in the spring from the first growth of the plant. When harvested the plants are cut above the second or third lowest buds, which are close to the ground, as these produce the next year's crop, the latter throwing up shoots early in the spring, which are cleared off, then covered up, when the crown throws up new shoots; these are trained and tied to the poles. The plants are very prolific in buds and roots, which supply numerous layers for additional plantation. These plants are generally placed in a hill, the hills being at a distance from one another of 3 feet, with the rows 6 feet apart. "Sowing Hop seed is not expedient, as plants grown from seed would prove inferior, although a new and superior variety might be found among some hundreds of seedlings, which would no doubt assist to extend the fame of New Zealand as a Hop-growing country, and at the same time enrich the discoverer." The Hop crop in Nelson is stated to be subject, more or less, to the red-spider, and an insect called the plant-louse, but up to the present time they have committed no great damage.

Hop-poles seem to be one of the most expensive items in Hop cultivation in Nelson. Those used are chiefly young plants of indigenous trees such as Leptospermum scoparium, L. ericoides, Aristotelia racemosa, Myrsine Nevillei, Fagus solandri, F. fusca, &c. The Myrsine is the most durable. Any stick, however, which is nearly straight is made to serve the purpose. They are said to be required for the main crops 20 to 30 feet long for young plants; however, shorter poles can be used.

Slanting the poles on which the plants are trained is recommended, even if requiring short forks to keep them up. By this method the height of the crop is reduced, thus offering less surface to the wind, while the plants would ripen sooner from the influence of the closer radiated heat from the earth, and they would also be much more convenient for training and tying.

It is recommended that trees known to possess durable woods should be cultivated for the supply of Hop-poles, such as Oak, Ash, Birch, and species of Eucalyptus, the damage caused through rotten poles in New Zealand being very serious.

A SHORT PEA SEASON.

In your interesting and truthful note on this subject (p. 147) you attribute the rapidity with which many Peas were hurried in and past this season to weather influences and different modes of cultivation, and, according to my experience, these have a great deal to do with the length or shortness of the Pea season, but it is also a question of variety. Some varieties appear to stop podding and become too old and dry for use before they have well begun to be useful. We have had rows of kinds in June and July which were ready for use at the beginning of a week, and almost over before the end of it; while neighbouring rows of different kinds, under the same conditions, were much more satisfactory. Amongst these latter some new varieties have behaved uncommonly well. On June 24 I exhibited a collection of ten sorts of Peas at South Kensington, which fortunately secured a 1st prize, and amongst them were Webb's new Wordsley Wonder, Sharpe's Paragon, Jefferies' Edible Podded, and Duke of Albany. The pods at that time were gathered from a row of each, which was growing in a shallow well manured trench, and from the same rows I again gathered a

nice batch of pods, which secured 2d prize in a collection of six dishes on July 22. The varieties named were the only rows from which I was able to gather good fresh pods each time, and I consider it very much in their favour that they should be able to yield such a long succession of pods at the season of the year named. I could mention many other sorts which failed altogether to produce green pods for more than half the length of time, and yet they were all grown under the same conditions. I may say I have formed a very high opinion of the varieties named, and I would briefly describe them as follows :—

Webb's Wordsley Wonder Pea.—This Pea is very deceptive in a way, but it all happens in its own favour. Any one seeing a row of it along the side of a row of some of the very large podded sorts would conclude it was a poor small thing not worth picking up, but close inspection would quickly dispel this delusion, as it will be found that the pods are produced in the utmost profusion in pairs, and that each one is closely, very closely packed with from nine to twelve fine big green Marrowfat Peas. It is only when the pods are opened that its superior and genuine character is displayed. The pods are narrower and darker green than many others, but the Peas individually are as large and fine as any which come out of the biggest of them. The flavour is delicious, and in this particular point I can speak of it with the utmost confidence.

Jefferies' Edible Podded Pea is by far the best of the kind I am acquainted with. It grows about 6 feet high, produces beautiful purple flowers, and plenty of pods. These are ready for use as soon as they are properly formed, and continue edible until the Peas have gained a good size. I was very curious to know how the flavour would prove, and to me it was very pleasing indeed. It is the most economical Pea grown for small gardens, as all is eaten and there is no waste with it in any way. I shall always grow some of it; in fact I am quite delighted with it.

Sharpe's Paragon is one of those good things for which Sleaford has of late become noted, and its value does not degenerate by its being known as one of Mr. Culverwell's progeny. It is a robust growing, free fruiting Pea, with short pale green pods, which never fail to fill well and give the greatest satisfaction in the kitchen.

Duke of Albany has much of the Telegraph type in it, as it grows about the same height and produces very large dark green pods, if anything more profusely than Telegraph; in fact, it is rather a dangerous rival to that favourite variety. *J. Muir, Margam.*

PLANT PORTRAITS.

Abies religiosa, *Bot. Mag.*, t. 6753.

Aceras anthropophora, *Gartenflora*, t. 1149 (1884).

Æthionema pulchellum, *Garden*, April 19.

Anemone vernalis, *Garden*, April 19.

Azalea indica Vervæneana, *Illust. Horticole*, t. 523.

Callimeris Alberti.—An Aster-like plant from Western Turkestan, with linear foliage and heads of violet-blue flowers. *Gartenflora*, t. 1152.

Caraguata sanguinea, *Bot. Mag*, July, t. 6765.

Cypripedium Spicerianum, *Belg. Horticole*, 1883, t. 18.

Elæagnus longipes, A. Gray, *Belgique Horticole*, t. 16 (1884); *Gard. Chron.* 1873, p. 1015, tab. 206.

Eucharis Sanderiana, *Garden*, March 29.

Gymnogramma schizophylla var. gloriosa.—A very elegant form, whose minutely divided foliage and crested fronds defy description in words. *Illust. Horticole*, t. 522.

Lælia anceps, Dawsoni, Williamsiana, Percivaliana rosea, Barkeri, Hilli, Veitchii, *Garden*, June 28.

Lilia autumnalis var. venusta, *Garden*, May 3.

Leea amabilis var. splendens, *Illustration Horticole*, t. 518.

Lilium Washingtonianum, *Florist*, July.

Lycaste Skinneri and L. Skinneri var. alba, *Garden*, May 17.

Lychnis lagascæ, *Garden*, June 21.

Magnolia Soulangeana nigra, *Garden*, April 5.

Odontoglossum nebulosum var. guttatum, *Illust. Horticole*, 1884, t. 524.

Orchis pauciflora, *Gartenflora*, t. 1149 (1884).

Orchis undulatifolia, *Gartenflora*, t. 1149.

Oxytropis frigida, *Gartenflora*, t. 1154.

Oxytropis ochroleuca, *Gartenflora*, t. 1154.

Panax Victoriæ.—Leaves three-lobed, lobes pinnatifid, bright green, with an edging of white. A pretty decorative plant, figured in the *Illust. Horticole*, t. 621.

Pentachaete aurea.—A dwarf annual Composite, with long linear leaves and solitary yellow flower-heads, about 1 inch across; California. *Gartenflora*, t. 1153.

Potentilla nitida, *Garden*, June 21.

Scutellaria Lehmanni.—A species with stalked cordate ovate minutely puberulous leaves and scarlet tubular shortly 2-lipped flowers, each about 1 inch long and arranged in terminal spikes. Native of the Western Cordilleras. *Gartenflora*, t. 1152.

Serapias cordigera, *Gartenflora*, t. 1149.

Streptosolen Jamesoni, *Garden*, July 5. See *Gard. Chron.* for 1884, p. 796.

THE PROPAGATOR.

The Propagation of the Different Varieties of the Aucuba, Holly, Ivy, Laurel, and other Hardy Plants (*continued from p.* 141).—Jasminum nudiflorum.—In propagating this plant a selection of medium sized growths should be made; the wood, however, must be quite ripe. It is usual to make the pieces about 6 inches long, and to trim off the leaves from the bottom of the stem for 2 inches. Before putting into the pit the bottom of the cuttings should be cut off at the point with a sharp knife. This done, they can be dibbled into the pit 2 inches deep, and 2 inches apart, but care should be taken to press them firmly into the soil.

Jasminum officinale.—Preference should be given to strong ripe wood of summer growth. The cuttings should be made at a joint, and should have two sets of leaves attached. They are to be dibbled into the frame about 2 inches apart, and pressed firmly into the soil. It is also necessary to water them.

Jasminum revolutum.—This is a strong growing variety, and roots more freely when put in by single eyes. In making the cuttings, it is necessary that they should each have two sets of leaves. The bottom leaves must be cut off, and the bottom of the stem should also be severed at a joint. Dibble and press firmly in the soil.

Forsythia Fortunei.—In this case strong ripe pieces 6 inches long should be taken, and dibbled into the pit to the depth of 3 inches. Each cutting must be firmly pressed into the soil.

Forsythia suspensa.—The cuttings should be made of the medium growths, putting in pieces from 3 to 4 inches long.

Forsythia viridissima.—These cuttings should be made of good strong growths, well finished up, and quite ripe. They should be each 6 or 7 inches long. Dibble them into the soil and water in.

Acanthopanax variegatum.—A selection should be made of the top and side shoots. The cuttings should be cut off at the joint, and the wood must be quite hard. Dibble in to the depth of 2 inches.

Aralia japonica.—The gardener must use the roots of this plant as a means for its propagation. Good strong roots should be procured and cut into lengths of 3 inches. Dibble them into the soil in such a manner as to make the top of the root level with the surface of the soil. It may, perhaps, be more convenient to place the roots in a deep pan or small box, because it is necessary to pot the root-cuttings off directly they start into growth; and as it is a plant that makes rapid growth they are more easily and conveniently handled if they are placed in a pan at one end of the frame. As soon as they start into growth they must be potted off singly into 60-sized pots, and after well watering they can be replaced in the pit. When they have well rooted through they should be potted into some strong loam in 32-sized pots. Replace, after watering them, in the pit until they are established, and then they can be transferred to an open ground.

Euonymus.—This beautiful plant is propagated from its side growths and small shoots, and these must be quite ripe. The cuttings should be 3 or 4 inches long, having the leaves trimmed off the bottom of the stem for 1½ inch. Dibble into the pit and water in. The many varieties of these should be propagated in quantity.

Ribes sanguineum.—Select and cut off pieces of medium growth, putting in as cuttings pieces 6 inches long. Dibble into the soil to the depth of 2 inches.

Berberidopsis corallina.—The short side growths of this plant should be chosen, and they should be firm wood. A running stem can be cut up into lengths, each piece having on it three or four leaves. Cut the bottom of the cuttings off at a leaf joint. Dibble into the soil 1½ inch deep, and press in firmly.

Ceanothus azureus grandiflorus.—In this case also the small side growths should be taken for the cuttings. They should be 3 or 4 inches long, and trimmed of the leaves and shoots for 1 inch from the bottom of the stem. They must be cut off at a joint. Dibble 1 inch deep, and press firmly into the soil.

Ceanothus dentatus, C. divaricatus, C. floribundus, C. grandiflorus, C. papillosus, C. rigidus.—These plants should be propagated from the small side shoots, but the wood must be quite ripe or hard. They should be about 3 inches long.

Cistus formosus.—The cuttings in this case should be taken when the wood is hardening; the weak and side shoots are the best. Each piece should have two sets of leaves on it, and should be cut off at the joint. Dibble into the soil to the depth of 1 inch. Cistus incanus, C. ladaniferus, C. salvifolius, can be treated in a similar manner.

Desfontainea spinosa.—Choose the medium-sized tops of shoots where the wood is firm and ripe. The pieces should be about 4 or 5 inches long, and the leaves should be removed from the bottom of the stem. Dibble into the pit and water in.

Elæagnus reflexus aureo-variegatus.—This is a very pretty plant, and deserves to be more extensively cultivated than it is at present. Put in as cuttings some good strong pieces from 4 to 6 inches long. It is especially necessary in this case to have the wood quite ripe, and it would be useless to put in cuttings in a semi-ripe state. Dibble in and press each cutting firmly into the soil.

Escallonia Ingrami, E. macrantha, E. montevidensis, E. pterocladon.—Make a selection of the small side shoots. The growths should be well finished up and the wood quite ripe. Each piece should be between 2 or 3 inches in length, and the leaves removed for an inch at the bottom of the stem. Cut them off at a joint, and dibble in an inch deep.

Eugenia apiculata, E. Ugni.—These cuttings are made from the side shoots, and should be 2 inches in length. They should be cut off at a joint, and the leaves removed for an inch from the bottom of the stem. Dibble in an inch deep, and press firmly into the soil.

Grislinia littoralis, G. macrophylla.—Select such growths as are well finished up, and of ripe wood. Each cutting should have on it from four to six leaves. In dibbling them into the pit the holes thus made should be filled up with sand.

The cuttings of the plants above-named may be taken during the months of July, August, September, and October, but the propagator must keep in mind, what we have many times repeated, that only hard or ripe wood will make good cuttings.

Treatment.—During the first fortnight the cuttings should be sprinkled overhead with a fine-rose pot every morning, ventilating them on sunny days, and shading them with an old mat or canvas. Occasionally the dead leaves should be taken off, but it must be done carefully, so as not to disturb the cuttings. They should be kept in the frame until they are rooted, and then they can be potted off or planted in a 4 feet bed, each plant 6 inches apart. *T. O.*

Fruits Under Glass.

Peaches and Nectarines.—Before the planting season arrives it would be advisable to make a general inspection of the trees in each house, and any alterations to be made respecting the removal of unsatisfactory ones decided upon, as well as the selection of varieties to take their places; and in order to prevent disappointment and loss through mistakes in nomenclature, &c., these should be ordered from a trustworthy source, and at an early date, before the best of the stock has been disposed of. Amongst the many kinds of Peaches of recent introduction some are unquestionably acquisitions, more especially in point of precocity, while others, at least in regard to flavour, are inferior to older varieties, such, for instance, as Royal George, Bellegarde, Grosse Mignonne, Noblesse, &c., which have been years under cultivation, nevertheless some of them are noble and enticing in appearance, and we, like some other cultivators, have been thus led to plant and cultivate some of them, which, after wasting both time and space upon, we have found to be almost worthless, and have had to fall back upon trustworthy old sorts instead. We notice this in order to caution others from being tempted in a similar manner, and who may have but limited accommodation for Peach culture, and which cannot be used for mere experiments. With respect to varieties of Nectarines, although they have not been so much increased as Peaches, still as regards general usefulness a greater advance has been accomplished in them, more particularly in the sorts Lord Napier as an early, and Victoria as a very late variety, while Stanwick Elruge, Humboldt, and Pine-apple are invaluable intermediate varieties. Other desirable Nectarines deserving of mention are Elruge, Murrey, Violette Hâtive, and Pitmaston Orange. The following Peaches, although they by no means exhaust the list of good ones, can be depended upon to give satisfaction and meet the requirements of most cultivators:—Hale's Early, A'Bec, Early Grosse Mignonne, Royal George, Stirling Castle, Grosse Mignonne, Bellegarde, Violette Hâtive, Barrington, Thames Bank, Prince of Wales, Late Admirable, and Walburton Admirable, the latter being the richest flavoured of the very late section, but is unfortunately a shy bearer, and requires its young wood to be laid in rather thinly, so that it may get thoroughly matured. Thames Bank is large and handsome, the best flavoured yellow-fleshed kind we are acquainted with; in ripening it succeeds Stirling Castle. It was raised by Mr. Rust, of Eridge Castle Gardens, but is not so generally grown as it deserves to be. In purchasing young trees choice should be made of those which have been lifted the previous season and possess clean free-swelling stems, with evenly balanced fan-trained heads moderately strong in growth.

Melons.—The seasonable hot weather we are now enjoying is very favourable to Melon culture, and especially to the batches recently planted, which require their growths to be formed during sunny weather and before the sunlight declines. Advantage should be taken of this fine time to admit air liberally during the early part of the day to these plants which have to mature their crops late under adverse circumstances, so that their tissues may consolidate and toughen, and thus prepare them for the unfavourable conditions which late fruiting Melons have to encounter. A limited root space will also greatly further this desirable end, and will prevent luxuriance of growth; therefore, after successful artificial fertilisation, and the roots push through the sides of the ridges or heaps, only a thin layer of fresh soil should be added, which must be firmly rammed. The laterals should be arranged thinly, and confined to their allotted space. Water at the roots must be cautiously given, and after the fruits commence to swell liquid manure should be used in a mild form, while the atmosphere must be kept in a more or less moistened condition according to the state of the weather, and as the days decline in length a damp and sluggish one must be rigidly avoided. Close the structure early, so that the temperature may run up to 90° from sun-heat, and so regulate the valves that a bottom-heat of about 85° is ensured. Where pot culture is practised the plants should be plunged in a bottom-heat of the above temperature. Close watchfulness must be used to keep the plants properly watered, and the other particulars in culture be carried out as advised for those planted out. Plants in pits or frames dependent upon solar heat and fermenting material for warmth must be very cautiously watered as the days shorten, and syringing should be discontinued except when the weather is fine. See that the fruits have supports, and are cleared of foliage by drawing it aside so as to assist the ripening, and if needful add fresh linings for the purpose of keeping up the required heat, and cover with mats at night.

Vines.—Young wood of Vines from which the crops are gathered will be benefited by the excessive warmth to which they are now subjected, especially where it is, as yet, but indifferently matured; in such instances the most should be made of this sunny time, and by securing a buoyant atmosphere, which should be kept dry. Established Vines which it is intended to force in November, should by this date have their wood thoroughly browned and hardened, and being in this satisfactory state it may now be shortened back to about half its length preparatory to the final pruning. In cases, however, where root lifting has to be undertaken, to which reference was made at p. 79, this operation should be deferred until after the roots have had time to make a start into the fresh soil. The method of confining the roots of early forced Vines to internal borders is now pretty generally adopted, but where they extend to outside ones they should now have the top soil removed, which should be replaced with a dressing of moderately heavy loam, mixed with bones, old mortar rubble, and charcoal, small crushed, all made firm, while provision should be made for covering them before they become chilled by autumnal rains. Wide glass wall copings, which should be always made movable, can be profitably utilised for this purpose, under which a thick covering of leaves should be placed when procurable. The intensity of the sun's heat will have an injurious effect upon ripe Grapes which are exposed to it, particularly Muscats, which are the first to shrivel and become discoloured; consequently, if the hot weather continues, and they are not well protected by their foliage, some kind of thin shading, such as tiffany, herring-netting doubled, or similar material should be placed over them during the hottest time of the day; we use the first-named material, which answers the purpose admirably. Late Grapes now fast colouring should not be unduly hurried, as they always ripen more satisfactorily when allowed reasonable time, during which they are accustomed to free currents of soft mild air, without any exposure to cold ones, with a moderate night temperature of about 65°. They should, however, be perfectly ripe by the first week in October, otherwise, unless the season is a very favourable one, they have to mature under the influence of a moist atmosphere, and when the sun's power is feeble, the result being that the texture of the skin is thin, and early decay follows. *Thomas Coomber, Hendre Gardens, Monmouth.*

Plants and their Culture.

Bulbous Plants, Stove.—Many of these genera constitute a most useful and effective addition to the general collection of pot plants, not only for their beautiful flowers, but also for the ornamental character of the foliage of a great proportion. The foliage even of the Eucharis is very ornamental when the plants are in a thriving condition, and when such is the case the spikes of bloom will be of finer proportions, with flowers of greater substance than can be obtained from plants that are only in a medium state of health. All of ours are now standing in two vineries, in one of which the Grapes are ripe, whilst in the other a few more weeks are needed to bring them to that condition. In both cases the plants are in good health, bearing evidence that they have no objection to being treated to an abundant circulation of fresh air, and a comparatively dry state of the atmosphere. Some few spikes have pushed up of late, but we do not need many just at this season of the year, preferring to work them into a flowering stage later on in the autumn, their place now being filled by many kindred subjects, such as the Pancratium fragrans, Gladioli, in pots and open ground, Lilium auratum, and the varieties of L. lancifolium, that can always be relied upon just at this season of the year with certainty. Our Eucharis, on the whole, are now what may be termed in a "quiet state," reliance, however, being placed on their giving a good account of themselves when more needed. The possessor of any stock of this useful plant not in a satisfactory condition at the root, had better look to them at once. If in a moderately healthy state, many of the roots nearer home can be preserved, keeping that portion of the ball intact, but if sickly, with scarcely any foliage and the roots in an indifferent state, the better plan will be to thoroughly shake them out of the soil and wash the roots that are left in clean water, afterwards repotting into smaller pots that are extra well drained, so that there is no superfluous soil around them. This treatment is also a good one to pursue with any stock that may be unfortunately troubled with mealy-bug, removing, at the same time, the outer scales and carefully cleansing the leaves, using water, in this case as warm as one can, with comfort, bear to dip the hand into. The same remedy will likewise be effectual with the Amaryllids that are troubled with the same pest. For our Eucharis we use a soil composed of good fibrous peat and turfy loam, one-third of the former to two-thirds of the latter, adding a few crushed bones and an abundance of silver-sand. If the best soil at command is likely to become somewhat too tenacious we would prefer to add some broken crocks or knobs of charcoal, to counteract this failing. If a slight bottom-heat is at command so much the better for the first few weeks after being repotted, to induce a quicker root action.

Pancratiums that have done flowering may also be looked after for any possible increase in the stock. One good strong bulb in a pot is enough, the probability is then that the flowering period may be extended to a greater length. The spring-blooming varieties of Amaryllis will now be casting some of their foliage; when this is apparent water must be gradually withheld as the plants return to their dormant condition. Amaryllis aulica will soon be starting into growth; any potting or top-dressing that may be needed should therefore be seen to at once. Keep a watchful eye after thrips; these insects will soon disfigure the under-portion of the leaves of the Amaryllis and cause them to decay prematurely. Vallota purpurea will now for some weeks be doing good service with its attractive spikes. Any pots that are pushing up an extra quantity of bloom had better be aided with occasional doses of manure-water; do not water so freely at any time after the flowering period is past, the plant then being comparatively at rest. We do not mean by this to cut off the supply entirely, after a short period, but exercise caution in its application. With liberal treatment the Gloriosas will continue to flower for some time to come; these fine climbing bulbous plants are handsome subjects for a large stove. Later on, as the growths gradually weaken, give less water in proportion, but be careful not to put them on one side as not needing any attention after the growths have all died down. This is the frequent error that is committed with many fine plants of this character. The tuberous-rooted Gesneras with beautiful foliage as well as flowers should now be in luxuriant growth. We do not cultivate them, from the simple reason that they fail under the deleterious influences of fog and smoke to which we are so subject during the time they should be giving a good return with their effective spikes of bloom. As they advance towards the flowering stage, apply water more freely with stimulants at times. Gesneria Mercki is one of the earliest to flower, being fine during the early part of September; G. zebrina will follow in a few more weeks. These are two old varieties, but both well worthy of cultivation. Late pots of Achimenes will do service from a decorative point of view for some few weeks to come; those that are promising to yield a good supply of bloom will repay for a little extra attention. Gloxinias, now so easily obtainable of first-rate quality from seed, have in a measure displaced the Achimenes, requiring less labour to cultivate them successfully; the Gloxinias also having the advantage of keeping fresh a greater length of time when used in a cut state. Seedlings of this year will continue to yield a fair quantity of flower if kept in a growing condition.

Greenhouse.—The early Roman Hyacinths, with the Paper-white and Roman Narcissus, are already advertised by the trade. The former cannot be too strongly recommended either for use on the plant or in a cut condition. The ease with which they can be got into flower in a cold frame, even if the early part of the winter be mild, is a strong recommendation in their favour. We hope soon to have ours potted and stood in a cold frame, where the lights can be put over them if desirable later on. Last season we kept them thus nearly on to Christmas, and got them into flower without any trouble for that season of the year. After potting up is completed we give one good watering, and then cover the soil with an inch or so of cocoa-fibre, keeping this covering medium moist by occasional damping down. The warmth of the sun's rays will penetrate the fibre, and induce an early start into growth. Schizostyl's coccinea, if in the open ground during this dry period, will need frequent waterings to keep them right at the root. In a few weeks' time the stock of this beautiful autumn flower had better be potted up. *James Hudson, Gunnersbury House Gardens.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug. 18	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Aug. 19	Basingstoke Horticultural Show. Sale of first portion of Mr. Bockett's Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	Aug. 20	Shrewsbury great Floral Fete (two days).
THURSDAY,	Aug. 21	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Aug. 22	Special Sale of Imported Orchids, at Protheroe & Morris' Rooms.

WHATEVER may be said of the heterogeneous collection of exhibits at the "HEALTHERIES," it cannot be denied that the programme has been well carried out, and that while the shop and show elements are largely—perhaps too largely—represented, there is, at the same time, the most interesting and instructive collection of subjects connected with health, food, and dress, ever got together. While the mere sightseer is amply provided for, there still remains a vast amount of objects worthy the attentive study of those who go to learn as well as to see. We have on various occasions called attention to numerous subjects in which our readers are more or less specially interested, though in the matter of health, its maintenance and preservation, all alike have equal concern.

Just at the present time special interest attaches to what are popularly termed "microbes," a word of brand new coinage, but one generally adopted for its convenience. Without being scientifically accurate, it may be applied loosely to all those excessively minute, and all but universally distributed, "germs," to which the various processes of fermentation are due. We have had occasion to speak frequently of their potent influence in promoting fermentations of various kinds, and to their agency in converting some of the inert insoluble matters in the soil into available plant-food. The action of manures, especially of nitrogenous manures, has been largely elucidated by the study of these organisms. Their structure in all cases is, so far as we know at present, of the utmost simplicity, their size is the minutest that can be recognised by the highest powers of the microscope, often they can only be made apparent by chemical means and the action of dyes; their form varies considerably. What they really are is at present to a large extent a matter of conjecture. Probably they are forms of fungi existing, now in one form, now in another, according to circumstances, checked by some means, enormously multiplied and modified by others. What gives them a special interest in the present connection is that they are indubitably connected with certain diseased conditions and in some cases so intimately that there is no reasonable doubt that they are the actual causes of the diseased states of plants and animals, and of which they are found to be invariable concomitants. Their study and investigation is no work for the mere superficial *dilettante*. They require not only the most delicate and accurate of means to demonstrate their existence and modes of life, but the most highly trained of observers to observe correctly. The study of Bacteria, therefore, is no play-work, to be taken up by the amateur gazer at microscopic objects or dabbler in test tubes; but it is one that necessitates the utmost perfection of means and the most accurate and careful of observers. As in all such investigations, the researches and observations of one man, however gifted, need to be repeated and checked by repeated observations of others equally well qualified.

Nor are the results likely to be at all disproportionate to the excessive accuracy and minuteness of observation required. The arrest, if not the total destruction of such diseases as phthisis, hydrophobia, various fevers, small-pox, and many others, probably including cholera, depends essentially upon the knowledge obtained in the manner indicated. The whole subject is comparatively new, but the directly practical results obtained have already been very remarkable. For the first time the efficiency of vaccination, properly carried out, is rendered intelligible. It is no matter for wonder that the lay public should have objected to vaccination when it was first proposed. To the average layman it is even now simply the overwhelming force of statistical facts in favour of the operation that have carried conviction. But such conviction, after all, is feeble to the intellectual man, compared with that derived from the rational interpretation of the reason why the process acts as a preventative. And this reason why is afforded by the researches we have alluded to, and by the much but thoughtlessly, not to say ridiculously, abused processes of the so-called vivisectionists.

A visit to the topmost floor of the City of London and Guilds' Institute of Technical Education may at least do something to allay the rabid and senseless outcries of the anti-vaccinators and anti-vivisectionists, and tend to show what really are the objects of the physiologist of the present day, and what are the means he employs to unravel the nature and source of disease, to combat it, and, still more important, and with a much larger measure of success, to prevent it.

The room is not easily found, and access to it is not facile, but these difficulties are only a fitting emblem of the enormous patience and the refined skill requisite to make any satisfactory progress in matters of such truly vital importance. Arrived at the topmost floor, the ordinary visitor sees merely a collection of microscopes, a lot of test-tubes plugged with cotton-wool, thermometers and balances, beakers and other adjuncts of a chemical laboratory, metal cases which turn out to be machines for preserving an even temperature for a lengthened period, whether below freezing point or at boiling heat, blurred photographs, diagrams and tabular statements. The gist of the matter is, that certain processes of putrefaction and fermentation have been shown to be, as we have said, at any rate associated with, in some cases caused by, the development of these bodies, now called "microbes."

By some of the means here shown, access of the microbes is entirely prevented, and neither fermentation nor putrefaction makes its appearance. By other means the microbes are "cultivated" by appropriate methods, the same in principle as those practised by the gardener, and fermentation and putrefaction infallibly arise.

So true is this, that a particular kind of fermentation (for there are several) can be with absolute certainty produced by the means exhibited in this topmost room. Equally certainly can their reproduction be prevented and their vitality destroyed. The great difficulty is the isolation of those minute organisms and the study of their habits and modes of life separately—that is, apart from that of the numerous other organisms that are present. It is as if the observer were desirous of studying the life history of one particular kind of grass in a pasture full of all kinds of grasses and weeds. By isolating the particular grass and growing it separately the observer can study the life history of that particular grass, see how it is affected by varying intensities of light and heat and moisture, by association with other plants, and by various conditions of manuring. This is done on the large, and, so to speak, coarse scale, in our Agricultural Institutes; and the same course is adopted, but necessarily on an infinitely more delicate scale, in the physiological laboratory attached to the Health Exhibition. Vegetable pathology is not entirely overlooked, for we find diagrams and preparations of Mr. WORTHINGTON SMITH, many of which have been dilated upon in these columns, and we find also a Berbery bush inoculated by Mr. PLOWRIGHT with Puccinia from the Wheat now producing a crop of the Æcidium on the Berbery.

Taken for all in all, this exhibit in the garret of the Health Exhibition, though probably the least generally attractive spot in the whole place, and the least significant to the casual visitor, is the one most pregnant with interest, so far as regards the physical welfare, not only of the human race, but of all living beings whatsoever for all time.

—— PINUS UNCINATA. — We avail ourselves of the kindness of the Kew authorities, who have forwarded to us cones of this plant, to give a representation of it. It has been considered by some as identical with P. montana, P. Pumilio, in which, however, the cone-scales are not reflected, and it has received various names, such as P. mughus and P. uncinata. Without cones it is indeed difficult to determine the form. We hesitate to reproduce our notes on specimens in various Pineta under the above names, owing to the absence of cones. As seen at Kew, P. montana var. uncinata, or, as we prefer for garden purposes to call it, simply P. uncinata, is a low growing, densely branched, bushy tree, the trunk covered with smoky-brown bark, branched to the base, the lower branches spreading, decurved, and upturned at the points. The young shoots are thick, cylindric, clothed with leaves nearly to the base, and pinkish-brown in colour. The buds are ovoid-acuminate, red, and covered with resin. The pairs of leaves are erect, dark green. The male catkins crowded, ovoid, oblong, about half an inch long, yellow. The cones, with their peculiar recurved scales, are shown in the illustration (fig. 42). Whether it be, as probably is the case, a mere form of P. montana or not, we think it desirable in gardens to keep it separate, owing to the peculiar character of the cones just referred to. P. montana, as its name implies, is a mountain form, native of the mountains of Central Europe, Carniola and Spain. The variety uncinata occurs, according to a note of Captain COOK in LOUDON'S *Arboretum*, on both sides of the Pyrenees, mixed with ths Silver Fir and the Scotch Pine, but extending above them. Its timber is reputed to be of high value for its resinous character and durability. There are now scanty remains of this noble tree in the French Pyrenees, where they have been almost wholly eradicated by the barbarous improvidence of the people [this was written in 1837], but in Aragon and Catalonia there are forests still remaining, of vast extent. Captain COOK speaks highly of it as an ornamental tree from the intensely dark green of the foliage, as well as the close and solid mass it forms, and the habit of the tree where left at liberty to throw out massy arms trailing on the ground. It is perfectly hardy, and as a screen or hedge to shut out unsightly objects, or form a boundary, it would be useful. Probably it would be a good seaside plant, but on this point we have no information.

—— LÆLIA ELEGANS VARS.—TWO lovely and extreme forms of this variable plant come from WALTER COBB, Esq., Silverdale Lodge, Sydenham. The one, L. elegans alba, has snow-white flowers, with handsome violet-crimson tip to the labellum; and the other, L. elegans prasiata, has rose-coloured sepals and petals, and dark crimson labellum. Both are of great beauty.

—— THE HEAT. — The papers abound with records, more or less trustworthy, of the heat on Monday last. In London, and at Hillington, Norfolk, a maximum of 93° in the shade was recorded, about the same at Greenwich, where 150°.8 in the sun were noted. A thunderstorm near London on the morning of the 12th did much to reduce the temperature to more moderate limits, though it still continues unusually high. What will be the effect of this unusually intense heat and concomitant light? is a question that will suggest itself to many. To crops that are already ripe or nearly so no doubt the effect will be beneficial. Where the wood has been properly formed its consolidation will be accelerated. In other cases it is to be feared that vegetation will be prematurely checked before it has fully done its work, and deficient quantity may result. The injury to quality will probably be less, or it even may be that this will be enhanced rather than otherwise. The effect on the Potato disease is highly satisfactory—it has put in an appearance, but it has not



Fig. 42.—Pinus uncinata. (see p. 208.)

spread. Now, therefore, is the time for a determined effort to mitigate the pest—we cannot destroy it. The Potato patches of the cottager, the odd corners by railway stations and such-like places, are thought not worth the attention of the gardener and farmer. Yet they are, as has been well said, hotbeds of disease, and at the same time it is in such places that the disease can be detected and destroyed at once, and its spread, if not prevented, at least delayed and checked. Cottagers and other growers on the small scale, where alone such preventive measures are possible, should be taught, encouraged, persuaded, commanded to utterly destroy, root and branch, isolated diseased Potatos directly they see them. The various methods we have recommended may be tried as may best suit particular individuals, probably the most potent argument would be one founded on the prospect of saving his own crop and securing healthy seed for the future. While "altruism" makes such slow progress among slovenly farmers it is too much to expect that smaller growers would be influenced by any more rapid growth of such sentiment, and, therefore, it becomes necessary to appeal to their intrinsic selfishness. Wheat, Barley, and Potatos are likely to be over average this year. As we have said before, if from the great heat the tubers may be small, and the Wheat ears not plumped out, the quality may

be none the worse, but very probably better. Grass and root crops will probably be below average.

—— COSMOPOLITAN HORTICULTURE. — As an illustration of the widespread interest in horticultural pursuits, we may note that our columns during the last few weeks have contained direct communications from our own correspondents, not only in almost every county of the British Isles, but from Norway, Sweden, Denmark, Russia, Germany, Austria, Italy, Holland, Belgium, Portugal, France, the United States, from Bogotá, New Zealand, Australia, British India, Jamaica, China, and Hong Kong.

—— LAWN MOWERS.—We are informed that at the trial at the Southport Horticultural Society, on August 6, the Chadborn & Coldwell Company were awarded the 1st prize for their Excelsior machine.

—— DIPLADENIA BREARLEYANA.—This lovely climber has been throughout the summer—indeed, since May last—one of the most interesting things at Syon. Mr. WOODBRIDGE has it growing along the roof of a low house, where it blooms with singular freedom and beauty. For furnishing a supply of bloom for some six months in constant succession it is invaluable. The blooms are gathered individually, and not in racemes, as otherwise a check might be speedily given to the plant's flowering propensities; not a few of the stems showed that ten and twelve blooms had already been gathered from each, representing over the entire area of the plant a large number. Most of these stems will no doubt carry some half-dozen more blooms each. As all the flowers open pale pink it is possible to vary the hues, though without doubt the intense reddish-scarlet-hued, old flowers are the most effective. Very beautiful effects might be obtained by devoting a low span house entirely to Dipladenias, Allamadas, and Lapagerias, all trained neatly under the roof, for these rank amongst the most beautiful stove climbers of the day.

—— ROYAL BOTANIC SOCIETY.—The forty-fifth anniversay meeting of this Society was held at the gardens, Regent's Park, on the 11th inst., with Mr. J. P. GASSIOT, Vice-President, in the chair. The reports of the Council and Auditors gave a gratifying account of the progress of the Society, the receipts having reached £7045, against £6651 for the preceding year. The expenditure had also been heavy, especially for new works, such as rebuilding the corridor and greenhouses, and additions to the tropical or Palm-house. The facilities afforded to artists, students, and all others desiring information, or assistance, or specimens, had been much sought after, the names of 743 professors, artists, and students being on the books of the year as holding free admissions, and 48,000 specimens had been given away. The exhibitions held in the gardens have been very successful, both as regards the number of visitors and the quality of the plants and flowers exhibited.

—— CHINESE PLANT ACCLIMATISATION IN THE UNITED STATES.—We take the following from the *Times*, but decline to be responsible for the accuracy of the statements made:—Considerable interest is being taken in America in the acclimatisation of plants, and among them it is proposed to experiment upon the aquatic vegetables of China, which are valuable for food and economic purposes, and are easily cultivated in Rice regions and marsh lands generally where water does not freeze or freezes but slightly. The most noteworthy are the Water Caltraps (Trapa bicornuta) (Ling-chiaco), called the Water Chestnut on account of its flavour, a pleasant fruit that requires no cultivation and can bear a very severe climate. The Water Lily (Nelumbium speciosum) appears to be identical with the Egyptian Bean of Pythagoras, and is much used for food, being rich in starch, while both root-stock and seeds are alike edible. Its leaves make capital wrapping paper, and its flowers are strikingly gorgeous. The Chiao-pai and the Chin-tsai are both varieties of the water Celery, which are planted on Bamboo rafts covered with mud, forming floating gardens similar to those of ancient Mexico or modern Kashgar. A most useful and valuable plant also is the T'ieh-shu, or Iron tree, which has the curious property of absorbing and assimilating iron; and this is cleverly taken advantage of when it shows signs of decadence, nails being driven into its trunk, and thus giving a new lease of life. (?) The Tiao-lan is another singular plant, which flowers only when taken from the ground and suspended from a ceiling. (?) The Chin-ch'i is the valuable product known as "golden varnish," used to adorn the glossy signboards of Chinese streets, and is furnished by a tree called the Ch'i-shu, or Varnish tree; but it possesses an element of danger in a poison which causes acute inflammation of the skin. Even the native dealers in varnish cannot escape, though they suffer less than foreigners, and particularly Americans. The remedy of the country is rather peculiar, being the application of crab's liver and a decoction of Pine shavings.

—— GRAPES AT SYON.—That now rare Grape, Royal Vineyard, is fruiting well just now at Syon, though it would seem by the experience of it which Mr. WOODBRIDGE has had that it is erratic when young, and does better when a little more aged. Indeed, Madresfield Court has been inarched on to the Royal Vineyard, but it does not seem to like the stock, as the growth is not robust, and the bunches, though fairly good, yet will not colour, and the graft is condemned. A graft of the even more erratic Duke of Buccleuch has been put on the other side of the Vine, and the bunches on that are poor. Seeing that the Royal Vineyard is fruiting so well now, Mr. WOODBRIDGE will probably give it a further trial unencumbered by grafts. Foster's Seedling is finely coloured at Syon. Muscat of Alexandria, young Vine fruiting well, and promising a grand crop next year. Golden Champion is also fruiting finely. One of the handsomest and deepest coloured of black Grapes at Syon is Alnwick Seedling, and one marvels to find this superb black Grape yet so little grown. There are also good crops of Black Hamburghs and Lady Downe's; and having regard to the enormous consumption which goes on in the several families supplied from Syon, it is evident that big crops of Grapes are required. It is now found needful to enlarge the kitchen gardens by some 2 acres—a fact which indicates that this fine old place is not yet doomed to the common fate of most good gardens near London.

NEW SOUTH WALES SANDAL WOOD.—A correspondent writing from Sydney, mentions a singular use to which the Sandal-wood of the colony (Myoporum platycarpum) is put. The tree, especially in the western part of the colony, near the Lachlan River, exudes a saccharine juice which becomes hard. The aborigines are said to be passionately fond of it, and will travel great distances in search of it.

—— THE TREES ON THE VICTORIA EMBANKMENT.—These appear to show this year only too evident signs of early ripening of the wood, the foliage in the interior of them having taken on the colours we are accustomed to associate with those of the month of October. These are just such symptoms as might be expected to be seen on trees suffering from a deficiency of water at the root. The river flows at their feet, but the newly made land on which they stand is very loose and porous, besides being covered with macadam and paving, so that the little moisture permitted to reach the roots, through these almost impervious layers, does but a small amount of good. Thorough soakings of water, given at weekly intervals up to November, would be of infinite benefit to these promising trees. In the future some means should be sought to make the area for the roots larger and also easier to water and feed with new soil, and occasionally with manure; for now that the beginning of a fine avenue has been made, it were a great pity to let a litttle extra expense interfere with its proper development.

—— SHELTER FOR ORCHARDS.—During sundry visits to the Midland, Eastern, and Southern counties of England we have observed the beneficial effects of abundant tree shelter in producing fair crops of Apples and Pears this season. Low trees, those naturally sheltered by their taller neighbours, seemed to be the most prolific, whilst quite free standing pyramids or bushes in gardens were usually bearing the worst crops. The shelter of dense evergreen trees or of mixed plantations has a double action, in that if the shelter is found all round an orchard the blooming period is retarded by reason of the absence of direct sunlight, and therefore heat in the spring months, a matter, as all practical men know, worth even more than the shelter afforded by trees planted on east and north to ward off the biting frosty winds from those points whilst trees are in bloom. It is as a rule the earliest flowerers that suffer from spring frosts, whether that earliness is an inherent property of the tree or has been the result of a kind of out-of-door forcing—the effect of position. In low-lying sites there is not much benefit to be derived from shelter of any kind, the warmth of such places being rather increased than otherwise by all-round shelter; but then such positions should, whenever possible, be avoided for orchards. People see Plums doing well on the river sides in western England, especially on the Severn and its estuary; but that is a portion of the country which enjoys a maximum of warmth in the spring and summer months from the influx of the Gulf Stream, which is materially felt beyond even the reach of the tidal waters of the Severn. This fact may not have been known to those who have planted the Plum in lowlands in parts untouched by that warmth-giving body of water.

—— PAPER MAKING MATERIALS.—In connection with this subject (see *Gardeners' Chronicle*, vol. xxi., n. s., p. 700, for May 31 last) Dr. KING, in his Report on the Royal Botanic Garden, Calcutta, for 1883–4, dated April 19, 1884, says:—"Some months ago I cut some branches of a paper Mulberry tree (Broussonetia papyrifera), two years old, and had the bark removed. The latter was reported on by a paper-maker, and pronounced, as I expected, an admirable paper material. Experience in this garden has already proved that this tree grows easily and rapidly in Lower Bengal, and I am assured by Mr. MARIES, superintendent of the gardens of his Highness the Maharajah of DURBHUNGA, that it also grows well at Durbhunga, a much drier part of the province. If, therefore, villagers would take to growing this tree by the borders of their gardens and in the odd corners and scraps of ground in which Bengal abounds, there is a reasonable prospect that the province might produce in quantity one of the very best paper fibres known—a fibre at once strong and fine, and that has the great merit of requiring very little bleach. With the view of extending the cultivation of the tree I am having thousands of young plants prepared for issue and for planting out in blank spots along the garden boundary." Another paper material referred to by Dr. KING is the Sabain-grass (Andropogon involutus, STEUD. = Pollinia eriopoda, HANCE), consignments of which, he says, have been received from various quarters, proving its extensive distribution in quantity in various parts of the province. There is no doubt whatever as to the suitability of this grass as a paper fibre, provided it can be laid down cheaply enough at the mill. Unfortunately, however, the grass affects districts where water carriage does not exist, and for cheap raw material, such as that for paper must necessarily be, any other kind of carriage acts as a prohibitive tax.

—— PELARGONIUM (DECORATIVE) DRESDEN CHINA.—It is claimed for this singularly distinct Pelargonium that it is a *bonâ fide* seedling and not a sport. It was raised (as has already been stated) by the Rev. A. RAWSON, formerly of Bromley Common, and now of Fullbarrow, Windermere. Unfortunately, when it was shown by Mr. TURNER, at the Regent's Park, a short time ago, the plant had produced trusses of bloom of a totally different character, and of a somewhat common looking decorative type. The obvious conclusion was that the striped flowers had sported from this, but it is now seen to be exactly the reverse, and we cannot but regret that such a charming variety has such a bad habit of sporting. It may be that over-feeding has something to do with this, and the plants at Slough will be found to flower much more according to their true character as the summer advances. The Rev. A. RAWSON has just bloomed a seedling which is also of a striped character, but having lines of a bluish tint, instead of red, on a white ground. If this should prove constant it will be a great acquisition; one thing is quite certain, we are gradually reaching on towards the attainment of a section of distinctly striped large flowering Pelargoniums.

—— CUTTING BACK TREATMENT OF OLD PLANTS.—The most common practice with overgrown, leggy specimens of hardwood greenhouse and stove plants is to cut back these just as they, under ordinary circumstances, would break into growth. The practice of pruning back into the oldest wood in the early autumn months instead, has proved

beneficial in many cases where it has been tried on Camellias, Lagerströmia indica, Clethra arborea, Acacias, Melaleucas, Theophrastas, Ficus in variety, Cacao, Bombyx, Dracænas, &c.; and these having been afterwards kept moderately dry and not exposed to any high or unsuitable temperatures, broke in innumerable places on the old shoots and stems. Many plants, when so pruned, were quite without foliage, in fact, the best results followed when every leaf-bearing shoot was cut away, for when any such are left there appears to be a tendency for such shoots to start into growth when the plant becomes excited by returning warmth in the spring, as well as under artificial excitation. Under these circumstances the shoots protruded from the old wood, in which situations these are most desired, become much reduced in numbers. It is better to keep greenhouse plants in semi-dark places, where the sun has no power, nor light either, to stimulate the plants into growth before April. Such localities are best afforded by a straw-thatched and matted structure than one made of brick or other impervious material. So long as such a building is proof against hard frosts it is better for the plants, as there the air can never become unfavourably dry, owing to the free entry of the moist outer air in the months from September to March. Plants belonging to the stove and intermediate houses are better kept in the shadier parts of houses, where a night temperature of 50° is not exceeded, and where they are not liable to drip, or to the play of the syringe, as the object should be to keep them also as long in a comparatively inactive state as possible. That complete inactivity does not prevail in either cool or warm house subjects under this treatment, is proved by the growing wartiness of the rind, which can only be felt at first by passing the hand over the branches, but which becomes visible early in February, by a great number of pointed protuberances in the rind itself, that point to the coming shoots which are very gradually developing below, and in the bark itself. With cut-back plants potting or tubbing should slightly precede the actual bursting forth of the growth, the roots having by that period gained some slight degree of visible activity. If deferred till actual branch growth has begun, many rootlets and root leaders must be cut off or get broken off in the operation, which represent just so much wasted force. Generally it will be found advisable to compensate the loss of branches by cutting away some of the more inert and fibrous portion of the roots when repotting, as roots will then be rapidly replaced, that will do their work better than the old ones, besides correcting the disproportion between the sizes of the plant and the receptacle.

—— New Cattleya.—An extraordinary variety, evidently a natural hybrid between C. aurea and a variety of C. gigas—probably Sanderiana—is now in bloom in the collection of George Hardy, Esq., Pickering Lodge, Timperley, Cheshire. In form and size it is a magnificent thing, and in the richness of the labellum it is just what might be expected from the blending of the bright orange veining in the throat of C. aurea with the expanded rich crimson lower half of the other parent. It is wonderfully beautiful and sweet.

—— The Gardeners' Royal Benevolent Institution.—In our number for August 2 we mentioned that Captain Hargreaves had generously consented to throw open his grounds at The Mount, Bishopstoke, on Bank Holiday, for the purpose of increasing the Pension Augmentation Fund of this valuable Institution, Captain Hargreaves also furnishing a band on the occasion. We now learn that, thanks to the generosity of Captain Hargreaves, and the energy of his gardener, Mr. George Forty, the *fête* proved a success, and that a sum of £22 15*s.* was obtained for the purpose above-mentioned. We sincerely trust that this excellent example will be largely followed.

—— The Plague of Caterpillars in the Rhondda Valley.—Respecting the great swarms of caterpillars which have been devastating the Rhondda Valley, in South Wales, Mr. A. G. Bourne, Assistant Professor of Zoology in University College, London, says, "Specimens of these were forwarded to me for examination, and have proved to be the larva of Heliophobus popularis, a nocturnal moth not uncommon in England, an identification for which I am indebted to Mr. S. O. Ridley, of the British Museum. This moth, which is commonly known as the "Feathered Gothic," and some of its allies, among which I may mention Chœreas graminis, the "Antler" moth, are entirely grass feeders. As in the case with all such forms, they will ultimately turn into chrysalids—a quiescent stage—after which they become developed into the moth or perfect insect; and in this stage, and then alone, the eggs are laid. There need, therefore, be no fear that they will be carried, or in any way spread, by the crows; on the contrary, the crow will here be the farmer's best friend, and prove a most efficient agent in destroying them. There, further, is no need for any apprehension so far as the sheep are concerned; they will not touch them in any way. As to the chances of these caterpillars appearing another year in swarms in the same district, little can be certainly said; but it is more likely than not that next year none, or very few, will be seen."

—— Large Gooseberries.—We append a list of some of the largest specimens of these favourite fruits of our Lancashire friends that were shown at the Royal Botanic Society's Gardens, Old Trafford, Manchester, on August 4:—

Twin Berries.

Mr. John Boot had Lord Derby, red fruit; weight, 38 dwt. 5 gr.

Mr. B. Cheadle, High Sheriff, yellow fruit; weight, 36 dwt. 12 gr.

Mr. W. Riley, Stockwell, green fruit; weight, 35 dwt. 14 gr.

Mr. R. Parker, Antagonist, white fruit; weight, 31 dwt. 21 gr.

Single Berries.

Mr. J. Boot showed the premier prize red Gooseberry, Bobby; weight, 26 dwt. 14 gr.

Mr. J. Torkington the premier yellow, Ringer; weight, 24 dwt. 3 gr.

Mr. G. Beck the premier green, Shiner; weight, 24 dwt. 12 gr.

Mr. Roger Parker the premier white, Antagonist; weight 23 dwt. 16 gr.

The Stewards' Prize was secured by Mr. E. Salisbury, for the red fruit Lord Derby, having a weight of 26 dwt. 2 gr.

Some good weights were found in the red-fruited class, Mr. G. Beckett having Clayton, of 26 dwt. 8 gr. weight; Mr. J. Warburton showed London, of 25 dwt. 20 gr.; Mr. J. Boots showed Lord Derby, of 25 dwt. 19 gr. Some other excellent weights were exhibited, but we discovered nothing amongst them worthy of particular notice, or that even come up to those of which we possess particulars.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 11, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been generally cloudy or dull in the extreme western and northern parts of the kingdom, but exceptionally fine and bright elsewhere. Towards the close of the period, however, thunder and lightning were experienced, though but little rain fell. The temperature has been high in all districts, being as much as 7° in excess of the mean in "England, S.," and between 4° and 6° in most other districts. The maxima, which were generally registered on the 11th, varied from 73° in "Scotland, N.," and 76° in Ireland, to 92° in "England, S.," and the "Midland Counties" (in London and at Bawtrey), and to 93° in "England, E." (at Hillington). The minima, which were recorded on the 5th, were relatively very low; in the "Midland Counties" the thermometer descended to 40°, and in "England, N.W.," to 41°, while in most other districts it fell to between 42° and 47°. In "Scotland, N." and the "Channel Islands," however, the minima were now lower than 50° and 54° respectively. The range of temperature during the week has thus been unusually large, that at Bawtrey being 52°, and that at Hillington 50°. The rainfall has been less than the mean in all districts. Bright sunshine has been (except in "Scotland, N.") more prevalent than for some weeks past, the percentages of possible duration varying from 70 in the "Channel Islands," 68 in "England, E.," and 67 in "England, S.W.," to 39 in "Ireland, S.," and "Scotland, E.," and to 26° in "Scotland, N." Depressions observed.—Until the last day of the period pressure was highest over the Gulf of Bothnia, and relatively low in our islands. No depressions, however (beyond a few shallow thunderstorm disturbances) appeared over the United Kingdom, where the barometer was very uniform and comparatively steady. The winds were consequently light in force, and variable—but chiefly between south-east and north-east—in direction.

BROXBOURNE.

I had heard some rumours of the upheaval of a long mountain range not far from London, and I was also told that in an incredibly short space of time it had become clothed with the choicest alpine flowers, and that they were flourishing there in abundance. The rumours seemed too good to be true, and it was impossible not to wish to see all this, and to examine it for myself. The chance was at last given to me, and a run of less than 20 miles from London brought me to the Broxbourne range and into the midst of the flora of Switzerland. Unless I am much mistaken about it Mr. George Paul is laying the foundations broad and deep of a very big concern, and in the course of a few years he will have everything there in its right place and order.

The alpine garden is formed of huge blocks of stone which are put together in a very natural manner, and which run north and south for a distance of some 260 feet. The breadth of this large construction is from 36 to 40 feet, and when it is considered that about a quarter of an acre is covered in this sort of way it will be seen at once what a great undertaking it is. I should say that no expense has been spared at all, and the whole thing has been well done, and so as to last for ever.

There will be a grand opportunity here for those who take an interest in different sorts of soil and different kinds of rock to test the theories they entertain. Limestone, sandstone, granite, peat, sand, loam, all these have been put under tribute in one way or another, and Mr. G. Paul means to tabulate his results, and to form an opinion of his own, after experiments of his own, of the best course of procedure with many different plants. It need not be added that the value of all this will be immense. An ounce of practice is worth a ton of mere theorising, and in nothing is it more so than with plants. When my friend tells us in the future what he has done, and also adds to it how he has done it, we shall have something very solid to go upon. A skilful method of irrigation has been introduced into the rockery, and for the future drought will not bring destruction along with it; but all this has been so carefully hidden that there is no eyesore at all. I was glad to find that the wonderful collection of alpine plants so well grown by the late Mr. James Atkins of Painswick had come into Mr. Paul's hands. Nothing better could by any possibility have happened to make a good start for him. Such things as the specimens I saw of Saxifraga Tombeanensis and S. Vandelli, which were grown by Mr. Atkins, attest the labour of years. Large pots were well filled with the choicest productions, and much time has been saved at Broxbourne by the acquisition of these and other similar rarities. The person who has sixty large specimens of Pulmonaria dahurica may be felicitated on his acquisition, and must stand, I should say, quite alone in the country unless my experience about these things is largely at fault. Here and there we can just meet with it, but sixty large specimens are hardly to be dreamt of at all, and yet they have passed into Mr. Paul's hands from the collection at Painswick! What a sweet pretty little flower this Pulmonaria is! The blue is so bright, and its habit is so good that one takes to it readily. I saw it first in the late Mr. Harpur Crewe's garden, and I have never been without it since then, but it will not do everywhere and anyhow. Mr. Paul has got hold of the right secret of growing it, and his little lumpy bits of peat mixed with sand and with loam will probably satisfy it. On the rockery I noticed many of the *élite* of the alpine world, at any rate of the alpine world with which I am acquainted. That most delicately marked flower of all—I refer to Omphalodes Luciliæ—was here with its soft blue patches shading off into white as though it were made of the costliest porcelain. Campanula pulla was preparing to run riot over the place, for where it does at all it does well, and takes complete possession of the spot. Androsaces were well represented, and I think where they get on well it may be taken for granted that anything will get on in the way of alpine plants. To my thinking, what they care most for is that they have the right sort of sand, and their little delicate roots must never be stopped short, and never be allowed to get dry. A bit of glass placed over the heads of some few of them does good in wet weather, and Androsace carnea repays one fully in the spring for any little attention it may have received during the dreary months of the winter.

Mr. Paul seemed to me to be strong in Androsaces, and I believe I noticed here, in addition to Androsace carnea, several others, such as A. helvetica, A. Laggeri, and A. chamæjasme. It is refreshing to think that such undeniable little gems as these are now coming to the front, and that they can hold their own, albeit there is nothing at all glaring about them either of yellow or red. Who does not love Primulas? The earnest gardener at Broxbourne is very attentively considering their wants, and if those which he has now may be taken at all as representative plants, I should think that the whole family will more or less fall in with his ideas of their welfare. I noticed that Primula mollis, P. Clusii, P. spectabilis, and P. minima declared themselves to be quite happy under his care. I saw one plant, and I think it was only one, that assuredly meant to "go off." There are certain indications which declare a state of uneasiness, soon to be followed by one of actual failing, which mean death for our favourites. Pyxidanthera barbulata was in a plight of this sort. It was longing for its American Pine barrens, and I think Mr. Paul had not allowed enough for its shade-loving fancies and its wish to be cool at the roots: but this is a rarity of rarities in this country. Only once have I ever seen it completely at home, and doing as well as could be desired, but it is a very uncommon thing indeed to meet with this luck. If Mr. Paul is for the moment beaten by Pyxidanthera barbulata, he need not take it to heart overmuch. A little American plant of a different sort was prospering greatly—I refer to Houstonia serpyllifolia—it was new to me, though its congener, Houstonia cœrulea, is on terms of the closest familiarity. I like H. serpyllifolia the best of the two, and I was very much charmed with it. The little starry blossoms of clear blue are very pretty indeed and there is a decidedness about them which sets them off more than the washed-out look of the other. Saxifraga sancta was clothing the rocks with the loveliest green. This Saxifraga is so bright and so neat that it must also be valued, and S. aretioides primulina should always have a place as one of the best of them. Both were doing well on the mountains of Broxbourne, and with several others S. longifolia and S. Lantoscana were preparing to send forth their large plumes of blossom. Anemone vernalis was giving promise of very great interest. Its shaggy calyx seems made for the resistance of cold at high elevations, and gives a feature to it of unusual worth. It is not very often met with among us, but there are no unusual difficulties about it which should cause it to be scarce. I think Mr. Paul will soon have plenty of it. He already grows it successfully.

But my notes must come to an end about this interesting rockery. Let me give just a bare list of names, all of which stood for something last spring:—Thalictrum anemonoides fl.-pl., Geum montanum, Narcissus montanus, Gentiana imbricata, Æthionema iberideum, Linaria anticaria, Saxifraga marginata (with red stems), Hutchinsia stylosa, Coptis brachypetala, Oxalis oneaphylla, Boralia subacaulis, Soldanella minima alba, and last, but not least, Astragalus hypoglottis alba, were all doing well. I admired this Astragalus very much, and I had never seen the white form of it before.

It must not be understood that the rockery is the only thing which one goes to Broxbourne to see. Many acres have been laid down for the reception of herbaceous plants. Mr. Paul has taken the whole vegetable kingdom under his wing; but it was impossible in a rapid survey to get through it all, or for one's brain to retain it with accuracy. I remember some French Ranunculuses—the single far more so than the double—with which I was very much pleased, and I think they should be more widely known than is at present the case. But I have said enough to show that a new power is rising among us, and that the cultivation of alpine and herbaceous plants will have another great impetus. I was well-nigh distressed the other day to find that a great nurseryman on the west side of London was going to revert to red Pelargoniums and yellow Calceolarias. The stream of bad taste had set in so strongly with Londoners, he thought it best to go with it. Alpine plants were at a discount with him; herbaceous stuff, as it is sometimes called, was quite out of esteem. It was the first and indeed the only instance of such a thing I have met with. The notions of Mr. George Paul are happily the very reverse. According to him the tide is rising high and the current of popular interest throughout the kingdom is largely in favour of intelligent gardening. I am sure I hope he is right, even though London has taken a retrograde step. The establishment of another large nursery of the right sort will tend towards the improvement of taste and so far from there being an injury done by it to those which are existing already, it may be believed that we are only now on the very threshold of a large and rational progress in horticultural matters, and that anything which helps it on helps those on who are at all interested in it.

I just had time to scamper through the famous Rose gardens. When I was there it was too soon for much blossom. What a profusion of beauty and fragrance they must have at this season. I was glad to find, from Mr. Paul, that he was working up the different species of Roses; already he has made good advance. I met with Rosa berberidifolia var. Hardii in this nursery, which I have never found anywhere else—some of his houses were splendid.

Mr. Paul was also amusing himself with Ixias and Cape bulbs; he may be able to get them to live, but if he carries off his due share of the highest prizes for Roses, and if he also attains to celebrity about herbaceous and alpine plants, I think he will have his hands full, and he will have a very wide range of interest for those who pay him a visit. *A Wanderer.*

(To be continued.)



FIG. 43.—A SOUTH AMERICAN VISITOR, FOND OF AZALEAS (COPIOPHORA CORNUTA.)

ENTOMOLOGY.

COPIOPHORA CORNUTA. — The introduction of exotic animals or plants, their acclimatisation, and beneficial or detrimental action, involve questions of much interest both scientific and practical; thus the introduction of the common house sparrow, both into the United States and New South Wales, has entirely succeeded, so far as its acclimatisation in both countries is concerned, but it has in both already become a perfect pest. The Ligurian hive bee has been introduced and thrives well with us. Our common white butterfly has so much multiplied in the United States that it has become a nuisance; whilst the scarce swallow-tail butterfly (Papilio Podalirius), although various attempts have been made to introduce it into our southern counties, and specimens bred here have been captured at large (but have been satisfactorily proved to have been brought here in the chrysalis state), has always failed to perpetuate its species. The latest introduction into this country of which we have heard is that of the prairie dog, which we are informed now breeds in Epping Forest, where its whelps are easily mistaken for little foxes.

During the last two years we have received from several correspondents, specimens, in different states of development, of a South American grasshopper Copiophora cornuta) found alive in and about hot greenhouses in this country, doubtless introduced either in the egg or very young state with the earth in which exotic plants had been planted and sent on amongst their foliage. Our figure (fig. 43) represents a spray of an Azalea, of which the buds and bloom were spoiled in February last by the gnawing of a partially developed specimen of this insect, sent to us by Mr. Joseph Bates, of the Oxford Nursery. The insect is figured very slightly larger than its natural size. It is entirely of a very delicate pea-green colour, with a sharp erect frontal spine and with very powerful jet-black jaws, not seen in the figure, as the head of the insect is oblique and rests upon the front of the chest and with the face quite flat. The antennæ are very long and slender, the rudimental wing-covers small, and the ovipositor longer than the abdominal part of the body, which has a bright orange dorsal longitudinal stripe. Another specimen in the same condition was captured in an Orchid-house. A very fine male, with the wings and wing-covers fully developed, was taken alive in a greenhouse, and a fully grown female (represented full sized in fig. 44) was sent us from Skaffan, Kildare, having been caught on a bed of Gardenias planted out at the end of last May, where it was engaged eating the buds, which it closely resembled in colour. It measures 3 inches on the expansion of its wings, its body is 1½ inch long, and its ovipositor is 2¼ inches long. The face is conical, with a marginal row of small tubercles on each side. *I. O. Westwood.*

Natural History.

MIGRATION OF BIRDS.—In several works on natural history the migration of birds has been attributed to innate restlessness. The author of a German book on *Bird Life* insists on the restlessness of migrants at the period of the "passage." "Cage birds," says Dr. Brehm, "though well fed and kept warm, are seized with the same longing as their wild relations when the season for departure comes round. As long as the 'passage' lasts they are restless in their cages. Those that usually travel at night may

be observed fluttering uneasily all night long, sleeping little, singing seldom, calling uninterruptedly. And this is the case not only with birds which have been caught when full grown, but also with young birds which were taken from the nest and can know nothing of winter and its hardships. They are all alike restless during the season of migration, and they again become quiet as soon as it is over." So says Dr. Brehm, but perhaps the particular kind of restlessness he describes requires confirmation. Birds are sometimes restless no doubt. The writer once possessed a raven, a grave, deliberate, aggravating bird, that was usually occupied in various kinds of mischief within the boundary of the homestead. He never roamed far, except in February, when he was invariably lost, and recovered by advertisement in the local papers. In February ravens seek a mate, and perhaps migration may be due to some impelling motive. Science has afforded the true solution of many mysteries which were articles of faith in former days, and the replacing of truth for error is certainly a gain. Dr. Brehm is a most interesting and picturesque writer, but his mystery-making may be challenged without compunction. He compares the crossbill to a gipsy for its habits of wandering, and thinks those habits are inherent; but the wandering propensities of gipsies might be cured by means of a sufficient bribe. Increase the capital of a wandering tinker, and he would soon be found a blacksmith with a shop, or if he were wedded to his old life his descendants would not be so. Nor would the crossbill wander so much if the seed of the Fir were more abundant. He moves from place to place for the sake of food; but a passion of wandering for the sake of wandering does not perhaps exist among birds. The wingless penguins leave Tierra del Fuego after the breeding season and swim for dear life, but they have a distinct motive for their flight. We all know how the songsters from beyond seas wander, and how regularly they visit us in spring and then depart again; and stranger still, that harsh voiced bird, the corncrake or land-rail is one of the most incorrigible wanderers, crossing several continents, and penetrating Africa, in spite of its weak legs and weaker wings, further than the great explorers have yet reached; and it does these long journeys every season, too, comes home unseen, and "crakes" in the same field as last year. And all these long journeys are for the sake of food, and are, in a sense, accidental.

It must be admitted that hunger is a primary motive, but migration, though caused by hunger, is not a necessary instinct common to all birds, since many species in favoured countries can find their food at home, and therefore do not wander. Migration may be regarded as an accidental instinct compared with those which are absolutely necessary to the welfare of the race under all circumstances, and which cannot be prevented. Few samples of an unpreventible instinct which nothing can alter are more remarkable than the sudden change which occurs in the habits and conduct of the common wood pigeon when, in spring, the great flocks of this bird suddenly break up. During the winter months the cushat is one of the most shy and wary of birds, flocking with others, and passing from one locality to another, according to the supply of food which different neighbourhoods may afford. He migrates from Oak wood country to Beech wood country, and thence into cultivated fields, wherever Acorns, Beech mast, Ivy berries, scattered grain, or Turnip-tops and green Clover may be found; and he remains during the whole time, the most alert and watchful of birds, and as mute as the capercailzie. Except for a few months in the year, the wood pigeon is entirely without voice or note. Suddenly, as by concerted signal, the pairing and dispersion take place, and the whole character of the bird alters at once. He was wild and he becomes tame, he was mute and he begins to coo!

In token of the change which overcomes the cushat at this season, he often moves for the nesting from the most secluded haunts to those which are most frequented, placing his nest frequently in gardens and shrubberies, close to walks that are in daily use. Even the rook—a far more domestic bird than the wood pigeon—is hardly more tame than he is during the breeding season. This describes a primary and unalterable instinct. Migration is an instinct of a very different kind. Circumstances have induced it in some birds, others do not need it, and it is readily laid aside; but it does not appear to be due to "innate restlessness," and most of the "mystery" connected with the wonderful phenomena of migration vanishes on close examination.

It is pleasing to reflect in connection with the migration of birds on the joy they experience while paying us their annual visit. They are no longer netted by bird-catchers by tens of thousands on the downs as soon as they arrive. They receive not merely the welcome of the humane, but the protection of our laws, and they live in clover while they are here—speaking of the summer migrants—since all sorts of grubs and insects, as well as fruit and seeds and corn abound. There are certainly some marvels connected with the subject of migration. Short migrations, it is true, are easily accounted for; but the long flights of storks and geese are not so. The theory of "hereditary memory," which seems to explain these flights, cannot be discussed here, and only resolves one marvel by means of a greater. It is surprising, too, that the same pair of swallows, which in March were at Cairo, should now be twittering in the same chimney as last year here in England. The sand martin, too, knows the hole of the sandbank where it nested last year, and enters it without hesitation. Starlings in Germany return after absence to the breeding boxes, which are hospitably provided for them on the tops of poles in the gardens, and take possession of their former homes at once, creeping in and out with all the confidence of ownership. One more example of the marvellous observation of locality which enables birds to return to old spots must suffice. A bird fancier reared two chaffinches, and plucked a few feathers from their breasts to ascertain the sex. As soon as the grey plumage of the female bird appeared he set her at liberty, and then hung the male bird outside his window in its cage. The hen came and looked through the bars, and afterwards followed the cage into the apartment and fed there till autumn, when it migrated with other birds of the same kind. But in spring she returned, and built her nest so as to feed her young ones from the cage; and during four successive seasons she departed in autumn, but returned punctually in spring, and built her nest and reared her young as before. *E.*

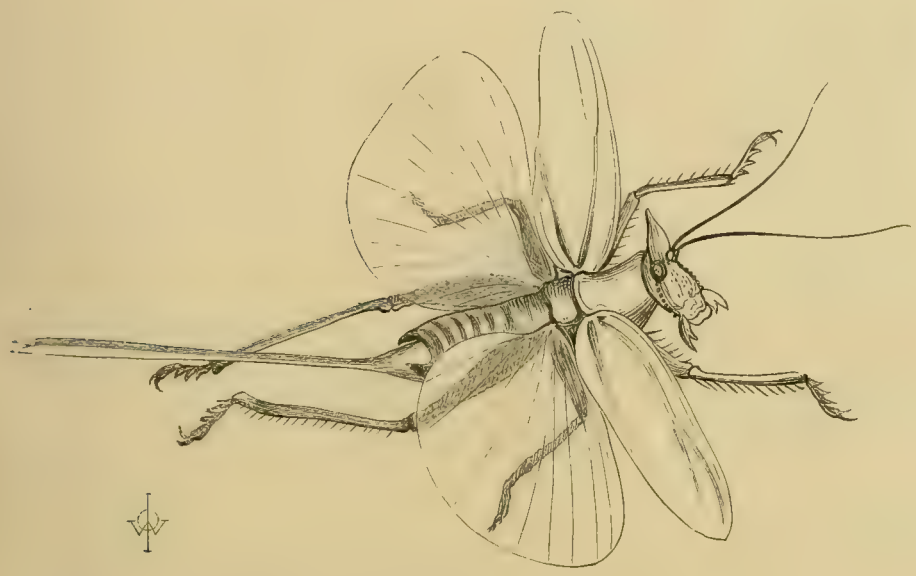


Fig. 44.—The South American visitor's wife, partial to Gardenias. (see p. 212.)

CULTURAL EDUCATION IN BELGIUM.

We had occasion some time since to mention the plans and models of the Vilvorde School of Horticulture, now exhibiting at the Health Exhibition. Concerning this noteworthy establishment, M. Gillekens recently read a paper in the Conference-room.

M. Gillekens stated that the rational culture of the land had taken firm hold in Belgium, and in order to develope it more and more and increase the national wealth, the Government did not hesitate to introduce into the programme of the normal schools and in primary schools notions of agriculture, of horticulture, and arboriculture. That was a wise measure, for no one better than the teacher could prepare the child to interest himself in the things which surrounded him, and to make him apprehend all the advantages of a country life. It would be the best check put upon the tendency of the country folk to emigrate into the centres of manufacture, which was the principal cause of the decrease in value of rural property and the most potent factor of pauperism. On account of its dense population, its topographical position, its easy means of communication, and the diversity of its soil, Belgium was in a most favourable condition for undertaking agriculture. It was incumbent upon the teacher to popularise this culture and to show all its advantages. This was all the easier to him inasmuch as he would have imbibed notions of culture in the normal school, and would be able to apply them in the garden annexed to his school. Fair results had already been obtained. This had been observed in the competitions organised a few years ago by the Agricultural Society of Brabant and the Agricultural Society of the province of Namur, among the primary schools. The former organised competitions in agricultural instruction and hygiene among the normal schools of several cantons. The programme of elementary notions of agriculture and arboriculture in primary and intermediate schools properly so-called embraced all that related to tillable soil, to subsoils, to the improvement of land, weeding, hoeing, to manures, the choice of seeds, the cultivation of vegetables, the care to be given, stock, the multiplication and the trimming of fruit trees. In fact, the teaching of agriculture and arboriculture in the lower, middle, and normal schools of Belgium embraced all that was necessary for the ordinary farmer to understand. The schoolmaster, he said, must be a bond of union between scientists and the farmer, that the latter might reap the benefit of all progress made by the former. Farmers must be made to understand the advantages of serious cultivation, which would add to the sum of ordinary labour while increasing personal and national wealth.

We have also adverted to the way in which the French, as shown in their exhibits, show practically the methods and procedures of cultivation, of grafting and pruning fruit trees, the nature of insect and fungus injuries, and the remedies for them. This is all done not only by books and diagrams, but by actual specimens. Oftener than we care to recal we have advocated the introduction into our rural schools of educational methods of this character and instruction of a more advanced character adapted for pupils of more advanced age. We have pointed out

how horticultural societies throughout the country fail in their duty in this matter. Their one idea is to get up one or two shows, supplemented by fireworks or any other attraction—well and good, we have nothing to urge against this, but it should be supplemented by practical teaching of the kind indicated. Those who are disposed to look into this matter for themselves will find a visit to the educational section of the Health Exhibition, contained in the new City of London and Guilds Institute amply repay them for the trouble of finding the exhibit in the overgrown Healtheries.

Home Correspondence.

The Heat.—We may not get such a dry, hot summer as the present for some years. What will the knowing prognosticators say now that polar ice has not got pushed down to the Thames mouth, and the newest glacial period is postponed for at least six months? At any rate, good Lettuces and saladings are also things of the future, for there is little to be seen in gardens or markets, and he must be a great believer in the efficacy of water who succeeds now in getting these much-desired items. In Continental market gardens, streams of water brought from a river by pumps, gravitation, or some inexpensive contrivances, run all through the land. As soon as the old crop is done with the land is dug with the spade—and such a spade!—often half of wood—laid out in flat lands, with a shallow water channel on either side, made water-tight enough by patting and smoothing with the aforesaid implement, water being then run in till the channel is 6 inches deep. A few bare-legged folks—men or women—with magnified soup ladles of tin fixed to long handles fling the water out of the trench over the land, some of which also soaks into it from the channel. It gets a deluge by that means, and are then left for a day or so till it has lost its stickiness, and then the plants, Lettuce, Kohl Rabi, Cauliflowers, Cabbages, or whatever is wished to be grown, are rapidly dibbled in, and all is watered again in a lighter fashion, and afterwards at frequent intervals if no rain falls. Our Fulham market growers used to irrigate in somewhat a similar fashion years ago, but these old gardens are bearing another crop now, that which the speculating builders put on the surface. With our better appliances, or by means of horse-pumps and such like, water could be utilised during hot, dry seasons like the present, much to the mutual advantage of grower and consumer. Fifty acres under Lettuces and Radishes or Cauliflowers would represent a pocketful of money during this month and the next. *Magyar Ember.*

Azalea sinensis.—This almost lost plant was seen amongst Mr. C. Turner's collection of Azaleas shown by him at one of the Crystal Palace spring flower shows. The plant in question was well bloomed, and not at all straggling in habit, the shoots having been loosely tied in so as to make a moderately compact plant. This may be demanded by flower-show judges, but it is not so certain but that many subjects which we never see on the exhibition table excepting in irons would please more if trained less stiffly. This is one of those plants that look well in a room vase, where simple graciousness is preferred to primness and formal training or natural habit. In this way A. sinensis beats A. mollis. It is a self-willed plant, but whose floriferous habit and bright orange-yellow colour entitle it to more general cultivation. It will bear the same treatment as Indian Azaleas, but is in best health when wintered in a house that enjoys a temperature of from 45° to 50°. *N.*

Crested Violet.—In 1871 there appeared a curious form of Viola sylvatica here, with the leaves plaited and crested, and one curious part in it was that it appeared among the crested Ferns, and only there. I sent a specimen to Mr. Baker, of Kew, who wrote a short account of it in the *Journal of Botany*. In the following number I sent a supplemental account, in which I was able to mention two other places where the same form had appeared, and also among crested Ferns. The plant came up for two or three years and then disappeared. This year it has again shown itself in the same place. There are, perhaps, half a dozen plants, one of which I have sent to Kew, and I enclose a leaf of another. I do not mean to say that the Violet was influenced by the Ferns, but the coincidenee is curious and worth recording. *H. L. Ellacombe, Bitton Vicarage.*

Clematis crispa.—I enclose a blossom of this North American Clematis, from the Edinburgh Botanic Garden. As it is probably quite hardy, it is a valuable addition to climbing plants, its bell-shaped pale lilac blossoms being quite distinct from most kinds in cultivation. *C. M. O.*

Potatos in France.—That estimable French horticulturist, M. Henri Vilmorin, who was one afternoon last week a visitor for a short time to Chiswick, and there met the members of the Seedling Committee of the International Potato Exhibition, informed them that in France the Potato crops were looking remarkably well when he left there a few days previously—that, as here, drought had been largely prevalent, and that little or no disease had been seen. M. Vilmorin mentioned that his house were the possessors of one of the largest collections of Potatos in France, and that the progenitors of this collection of kinds had been in their hands since 1815; and, as bearing on the interesting subject of the wearing out of varieties, said that the Early Marjolan or dwarf Walnut-leaf had been in their possession all those years. The kind once known as Sandringham Kidney, which was really our old Walnut-leaf, had been found to bear the nearest resemblance to the Marjolan of any that had come under notice. This kind was formerly chiefly grown for the French markets in the open ground, but now its cultivation was mostly confined to pits and frames, and Myatt's Ashleaf had been substituted. M. Vilmorin's collection of Potatos consists now of some 350 kinds, many being sorts preserved for a number of years for the purpose of testing new kinds with them. All the best new kinds are added from year to year, and M. Vilmorin paid a high compliment to English raisers by saying that whilst the Americans had in their sorts remarkable productiveness, our raisers had excelled them in the production of flavour and good table quality. In France rather close yellow-flesh Potatos are most favoured; hence that country offers a poor market to our raisers. The national habits and methods of cookery at present offer insuperable obstacles to the introduction of choice English Potatos. M. Vilmorin hopes to be able to bring over samples of his large collection and exhibit them at the International Potato Show, which will be held early in October. *A. D.*

Rubus chamæmorus.—Dr. E. D. Clarke, in his *Travels in Scandinavia*, chaps. xi., xii., gives a very interesting account of this species of Rubus, lately referred to in your columns. He says that that the fruit is first scarlet and then yellow, and that the flavour is best before they turn yellow, but much improved by cooking. Dr. Clarke says that the fruit has considerable medicinal virtues, and that it cured him in Lapland from "a most obstinate obstruction of the biliary duct accompanied by the worst symptoms of that disorder;" also that, "in its natural state no fruit looks more beautiful." Although in these islands it occurs only on a few of the higher mountains in Scotland, it seems quite possible that it might thrive in certain situations in England. Would it not be worth a trial? *Alexander Nesbitt.*

Nectaroscordum (see p. 174).—There is no such plant as Nothoscordum siculum—Nectaroscordum siculum is no doubt intended. Nectaroscordum is a section of Allium, and has the Garlic scent highly developed—Nothoscordum has no alliaceous scent at all. *J. G. B.*

Eremurus aurantiacus.—It was not liberality, but rather thankful recognition which induced me to send at once a flowering plant of this to the Royal Gardens, Kew. The seeds were distributed by the authorities of that establishment now five years ago, and with their usual liberality, and perhaps with the idea that the climate of southern Germany was better than that of England for growing the plant, they sent me a portion. At this moment the name is questionable, and perhaps may be changed. On this occasion allow me to say a word as to the cultivation of these stately plants: although growing in any soil, they prefer loam or a rather heavy substantial mixture, and should, at least in England, have a very sunny and open position. After flowering the foliage soon decays, and then the roots are ripe; they must not be left in the ground, but be taken up and preserved in very dry earth for about from six weeks to two months. This causes the roots to shrivel and checks growth, which must be prevented as long as possible, or else the roots would thrive before winter, and be damaged by water and snow filtering into the crowns and causing decay. The roots are very brittle, and care must be taken not to break them too much when taking them up. *Max Leichtlin, Baden-Baden.*

The Potato Disease.—Mr. W. G. Smith seems determined to remain unconvinced of the fact that the disease spores enter Potatos through the skin. Surely the evidence of the entrance of the fungoid spores into the tubers from the soil is plain enough, at least it is to all practical men, who have paid attention to the subject. Why may not spores enter the tender epidermis of newly forming tubers as well as into the hard woody stems of the haulm? The other day at Chiswick, when inspecting some new kinds of Potatos in company with other Potato *savants*, I took up a tuber on which were visible several distinct disease spots as large as Peas. These spots were just in and beneath the skin, but had not had time to develope further. That they were of external origin was as plain as a pikestaff, and though some may be ever so unwilling to believe, yet none could doubt; yet one of our number, whom I might for the nonce dub a "Smithite," took out his knife, slit the tuber clean through the centre, and exposed to view—Ha! Mr. Smith will rejoice to learn, positive evidence of the existence of fungoid spots or spores in the inner channels which communicate with the stem. What did that show? That the external spots were the product of the internal spores? Not a bit of it; rather it evidenced that the unfortunate tuber having developed small pox, had also got an attack of cholera, and thus had been attacked both internally and externally. That it must have succumbed presently was obvious. The moral of this example is this—that the fungoid spores under certain conditions attack leaves and tubers in both ways sometimes, and sometimes in one way only. I think general experience will show that the attacks are from the soil chiefly, and therein lies the very essence of Mr. Jensen's theory—that for such manner of attack protective moulding is the only remedy. *A. D.*

Yellow Annuals.—A favourite colour just now with our lady friends is yellow. Looking over a border of annuals to-day we were much struck with the rare beauty of some of them, and think they are as worthy of culture as more expensive plants. Calliopsis Drummondii with its beautiful star-shaped yellow flowers is lovely in a group. There is also Bartonia aurea, and the yellow Sweet Sultan, with its heads like large yellow tassels. For bouquets nothing could be prettier, or less expensive, which latter is a consideration nowadays. *F.*

Dendrobium superbiens.—I am informed by Mr. Fitzgerald that Captain Broomfield assured him of the occurrence of the Dendrobium, figured in the *Australian Orchids* as D. superbiens, on the Prince of Wales' Group, about 20 miles from the mainland of Queensland, and 50 miles from New Guinea, and he adds that it is also to be found sparingly on the nearest mainland of Australia. Captain Broomfield cultivates this splendid Orchid, and he considers it superior to all his others in this—that it is the only one absolutely always in flower, a raceme being obtainable at any time. *F. v. M.*

Ha-ha Walls for Fruit Trees.—We do not find these employed so much for the invisible division, or, rather, separation of gardens from each other, or from fields or park-land, since the introduction of wire and light iron fencing. In Loudon's time it was one of the burning questions with landscape gardeners, as they saw the propriety of making the division between the garden proper and the adjoining land, and much money, time, and temper too were lost in making what to us of to-day seems an exceedingly simple matter. We can enjoy distant prospects over our neighbour's property by having an almost invisible fence, instead of a moat and wall. In many instances about the country these latter remain, and where the planting of them with fruit trees would not be incongruous, and the position would not be any point to the north, they might be used for that purpose. The trees—Pears, Apples, Apricots, or others—are best planted in the land at the top of the wall after it has received suitable preparation. The stem is then carried over the top of the wall, and cut back when it has extended far enough to allow the resulting shoots to be trained without any dangerous bending over the edge of the wall. These, as they extend, can be, and are best trained in the fan or half-star shaped method, as is done with wall trees growing in the usual way. As all these branches have a downward tendency, the direction would seem to induce early fruitfulness and but little wood-growth. Perhaps the comparative dryness of the ground so near to a wall would have some influence in causing meagre growth, and in light land must be counteracted by watering and mulching. My own experience in a wet district, in good medium loam, would seem to point in the direction of the trees getting water from the middle of June to the end of August, except in unusually wet years. I have found also that trees set far too many fruits, so that severe thinning has to be carried out during June, if quality and not numbers is looked for. This is another advantage that seems to depend on the acuteness of the angle of the downward traversing branches, for on walls with a batter the trees grow more wood, and I fancy the fruit ripened earlier, owing to the sun impinging on the wall more directly. *M.*

Campanula alpina.—Two distinct forms of Campanula have been grown near Edinburgh for many years, as C. alpina. The true kind, as figured in the *Botanical Magazine*, t. 957, is apparently the one grown at the Comely Bank Nursery, the flower-stems of which are about 6 inches high, with comparatively large drooping purple blossoms; the foliage is linear and glaucous. The other form was well shown at the July flower show, by Mr. Robertson Monro, and in

the collection of alpine plants sent from Miss Hope's garden. The flower stem is about 10 inches high, with grey linear foliage, leaves, stem, and calyx being slightly woolly. The blossoms are light-blue, somewhat erect, and like those of C. tenella in size and form. Whatever the right name of this Campanula may be, it is a variety well worth growing. *C. M. O.*

Foreign Correspondence.

How Mounds Can be Formed on Level Plains.—On the plains of Etawah, in the north-western provinces of India, there grows in large quantities the Zizyphus nummularia. Natives call it "Jungli Bair." It may possibly have been the ancestor of our present edible Zizyphus, the Hog-plum. This "Jungli Bair" is a low spreading, thorny, small-leaved bush, with fruit about the size of a Pea, so thorny (although the thorns are small) that even goats, the locusts of Etawah, don't care much about it. I have never seen it above a foot or so high, although in better soil it might grow taller. It spreads along the ground to a little distance from the main stem. It is found in colonies; that is, rarely one plant alone at a distance from others, but in groups of many. Wherever there is a colony there is a small mound under it, higher or lower, according, as I think, to the age of the colony. It is interesting to study how these mounds are formed. I conjecture that the mound is founded at first by one or a few plants. At the season at which leaves of trees fall they are swept by wind along the plain, and some of them get entangled in the "Bair" bush. Then a dust-storm comes, and a lot of dust is caught by the entangled leaves. Then rain comes and rots the leaves so entangled and mixed up with dust, forming a layer of leaf-mould under the bush. When the berries are ripe they fall, and find a favourable soil to germinate in and start in life. A colony is thus the collector of its own manure, and goes on increasing by entangling more and more dust and leaves among its thorny branches. In this way every year a little is added to the height and width of the mound. I have not seen any "Bair" mounds higher than a foot. The reason of this, I fancy, is because during heavy rains some of the accumulated earth is washed away, and thus the mound is not allowed to grow unchecked. The fact remains, however, that on a plain one sees an infinity of these low "Bair" mounds, looking like miniature coral islands, on the surface of a sea of alluvial soil. I have no doubt that the winds scatter the "Bair" fruit, but their dissemination may also be helped by birds and jackals. The latter are said to eat "Bair" fruit. As they are omnivorous I should not wonder at it. I have never seen them eat it, although I have often seen droppings, said to be theirs, containing little else than small stones said to be those of the "Bair" fruit. How they can eat this berry without pricking their lips and noses I do not know. This I know, that owing to the numerous small thorns, it requires great caution in handling a branch of the Zizyphus nummularia.

There is another interesting plant, the Capparis aphylla, called "Karil" by natives. It is sometimes also found on plains, in colonies, which also entangle the leaves and dust blown by the wind. When allowed to have its way this plant makes a higher mound than the foregoing. It is, however, kept low by goats when it attempts to found colonies where these animals abound, as its thorns are not very formidable. The place to see this Caper is on the sides of ravines inaccessible to goats. Then it forms a larger bush, consisting solely of their twine-like green stems, forming a complete tangle. At certain seasons it becomes covered with a profusion of small maize-coloured flowers, disposed in little bunches along the thin stems, in what I suppose should be the axils of the leaves; but, as its specific name implies, the latter are totally absent in old plants, and only temporary in young ones. The stems, remaining always green except when very old, take on, I suppose, the function of leaves. When in flower this bush is a very pretty sight. It grows on the driest edges and sides of precipices, and has a thick underground stem, which penetrates the soil very deeply before it gives off root-fibres. It ought to be a fine thing for deserts. Its fruit is a small rose-coloured berry, varying in size from a Pea to a Cherry. Goatherds and others eat them greedily. They are full of seeds, having round each a yellow gelatinous pulp, of a bitter-sweet taste. Natives pickle the unripe fruit, and say it is very nice, and good for "bâdi." This is a nondescript sort of ailment, which is perhaps better described by the old-fashioned "bad humours." This plant, queer at one time and pretty at another, might probably take with some people who are fond of curious things from the jungles, so I intend sending home some seeds. Possibly it might cross with the lovely Capparis spinosa of the South of Europe, and thus make another wonder.

For the specific names of these two plants I am indebted to the curator of the Herbarium, Botanic Garden, Calcutta. *E. Bonavia, M.D., Etawah.*

The Arboretum.

Hardy Conifers.—The following species have stood out unprotected in the gardens at St. Petersburg for the last fifteen years, according to the *Gartenflora*:—

- Abies balsamea
- ,, Douglasii
- ,, Fraseri
- ,, sibirica
- Juniperus communis
- ,, prostrata
- ,, Pseudo-Sabina
- Picea alba
- ,, Engelmanni and var. glauca
- ,, excelsa and ten varieties
- ,, nigra
- ,, obovata
- ,, pungens var. glauca
- Picea pungens = P. Menziesii, hort.
- ,, rubra
- ,, Schrenkiana
- ,, sitchensis
- Pinus Cembra
- ,, contorta
- ,, pumila
- ,, Pumilio
- ,, Strobus
- ,, silvestris
- ,, uncinata
- Retinospora pisifera
- Thuia occidentalis

Ornamental Plants in Masses.—That masses of plants are far more effective than those planted singly is nowhere more forcibly impressed upon one than in the nursery borders. This truth has just been recalled to my mind by the immense wealth of bloom exhibited by a bed of Fuchsia Riccartoni now in full bloom in our home nursery. Each patch, or rather patches, for there are several, contains from 300 to 500 plants, all in full blow, the effect of which can be easily imagined, but I might add, rather in the diminutive, for without a sight no adequate conception can be formed of the immense wealth of bloom here portrayed. Another very ornamental plant now in its prime, is Spiræa Douglasii, a shrub that is by far too seldom seen in cultivation. Grown in clumps or masses it is truly magnificent, the rosy-pink flowers being thrown well above the foliage in bold handsome spikes. The white or rather dun-coloured variety is a nice contrast to the normal form, and should be allotted a position in close contiguity to it where its distinctive features will best be seen. These Spiræas are plants of rapid increase, the running roots soon monopolising a large space of ground. Common though it be, the flowers of the oval-leaved and evergreeen Privets, the former in particular, deserve a passing notice, not only for their delicious fragrance, but ornamental character as well. Here again masses have the advantage of single plants, or even those in a hedge-row line. *A. D. Webster.*

Prunus myrobalana flore roseo plena.—The Myrobalana Plum, with double blossoms, is, according to the *Revue Horticole*, xix., p. 453, this year one of the finest of the recent introductions from Japan, having been brought out by the firm of Baltet Brothers, Troyes. It is similar in growth to the well-known Prunus triloba with which variety it can compete in beauty from the first opening of spring. The plant is a vigorous grower, very hardy, and in the earliest days of spring is quite covered with its sweet-smelling blossoms. The shrub has the growth of the common P. myrobalana; the rind of the twigs smooth, light-coloured, and polished; the foliage deciduous, long-stalked, and bluntly dentated, suddenly becoming small near the point, long pointed as in P. triloba, light green, the leaf-stalk, nerves, and edge of the leaf being coloured light carmine. Like P. triloba and P. sinensis alba plena the shrub can be easily forced in pots, and requires the same kind of culture, and to be stopped two or three times during the summer, so as to provide well-furnished examples. The chief good property of the shrub is the earliness of the flowering period, which is a week or more before that of any other variety. It is not as yet known if the plant will bear fruit, but from the formation of the productive organs it is not improbable, as anthers are to be observed between the centre petals, which also are an additional attraction in the flower.

Rubus cratægifolius is a shrubby species from the Amur territory, and is met with in Japan and North China. It is an upright growing plant, reaching the height of several feet; young plants are completely covered with a white down that disappears from the plant with age. The shoots, leaf-stalks, and nerves of the leaves are covered with small thorns, which are short, red in colour, and slightly bent backwards; the leaves are not unlike those of Cratægus coccinea. The flowers are white, coming either singly in the axis of the leaves or in bunches at the tips of the shoots. The plant coming from such high latitudes is perfectly hardy in England, and should form a pretty shrub for the grass plot or the choicer shrubbery border.

Notices of Books.

Forestry in Norway. Compiled by John Croumbie Brown. Simpkin, Marshall & Co.

With all sympathy with Dr. Brown's object and due recognition of the services he has rendered to botany and its applications, we feel constrained to ask whether it would not have been better to have left this present volume unpublished. For the most part, though not entirely, it is an avowed compilation, and as such, legitimate enough; but the compilation has apparently been hastily done, and information taken from other compilers rather than from original and easily accessible sources. The following is the author's own summary of the contents of his volume:—

"There are described in successive chapters the general features of the country. Details are given of the geographical distribution of forest trees, followed by discussions of conditions by which this has been determined—heat, moisture, soil, and exposure. The effects of glacial action on the contour of the country are noticed, with accounts of existing glaciers and snow-fields. And information is supplied in regard to forest exploitation and the transport of timber, in regard to the export timber trade, to public instruction in sylviculture, and to forest administration, and to ship-building and shipping."

Evidences of hasty treatment are visible in the fragmentary and inconsequent arrangement of paragraphs and in the very numerous misprints. The first word of the first chapter affords an illustration of which there are too many elsewhere. At p. 39 the confusion already arising from the deplorable jumble as to the proper names to be given to the Silver Fir, and to the Spruce respectively, is intensified. A few pages further on we find mention made of the Straits of "Madgalhæris," of a distinguished naturalist who "perished in all the leaves of his spring," of the Lake of Geneva being the "sleeping Rhine." As the basis of a series of lectures no doubt the information here printed was serviceable, but it needed much more revision than it seems to have had, before it was put before the public in book form.

—— *Days and Hours in a Garden.*—Many readers will remember the sympathetic letters from a Buckinghamshire garden which first appeared in these columns. The quaintness and the originality of illustration, the real love of the garden for the garden's sake, the freshness of the author's spirit were, we have reason to know, appreciated by the reader as a real change from the hum-drum technicalities of ordinary garden literature. "He who goeth into his garden to look for spiders and cobwebs will doubtless find them; but he who goes out to seek a flower may return to his house with one blooming in his bosom." We may apply this quotation, made use of by the author herself, to her book. There are cobwebs which might be critically considered, but it is pleasanter and more profitable to cull and cherish the flowers collected for our delight, to follow the author's fancy so far as we may, and give one's-self up to her guidance—and the public thinks so too—for before us, in dainty vellum, lies the "second edition." Elliot Stock is the publisher.

BRITISH FERNS AND THEIR EXTERMINATION.

I HAVE read with much interest your note in last week's edition regarding wild Ferns and their destruction at the hands of collectors. This is an old and vexing evil, and one that unfortunately cannot—or, rather, has not—been satisfactorily dealt with, the difficulty of taking active measures in the question being only too apparent. In taking an unbiassed view of the matter, let us, in the first place, consider if all the mischief, of which an exaggerated account too often finds its way to the public press, is actually committed either by tourists or the oft-maligned plant-collector, and what steps could be taken to allay the evil.

In speaking from my own experience of this district, well known to be the best for Fern hunting in the country, I must certainly say that although tourists, plant-collectors, and true botanists scour the country in scores, it cannot be said, even by those who are intimately acquainted with the flora of this country, that either flowers or Ferns have diminished in number—not, at least, to an extent worth mentioning. Several rare Ferns have certainly become extinct on our Welsh hills, but this is due neither to the tourist nor ordinary plant-collector, whose knowledge of such rarities is usually limited, but to the true botanist.

Again, we must not be too hard on the town's-people for Fern hunting when out for a day in the country; for place ourselves in their stead, and more than likely we would be nothing better. Nor must we either altogether condemn the plant-collector. Fern hunting is a regular trade, and considered by the vendors a most honourable one too. Certainly it is a pity if lanes and roads, more especially on the outskirts of towns, should be despoiled of their Ferns and Primroses to satisfy the cravings of their inhabitants; but, on the other hand, how can this be averted, or a stop put to the illicit traffic?

In a letter which appeared in the *Gardeners' Chronicle* of March 22, a well known nurseryman in the Fern line said, in reply to a note of mine regarding the high price of Ferns, "Let the country once show a desire for these plants, and the prices will lessen," or some such words, for I have not the paper at hand.

Now is the time, when so many complaints are forthcoming as to the number of plants annually collected in lanes and ditches, for the supply of town's-people and town markets, and when the supply seems insufficient for the demand. A double benefit will thus accrue by our town's-folk enjoying their natural Ferny banks, which in all likelihood would then remain untouched, as well as obtaining these at a reasonable price from Fern nurseries. We must, however, remember the greater value to any person of a plant they find over one they have purchased. *A. D. Webster.*

CHISWICK.

July 31.—A meeting of the Floral Committee was convened at the gardens at Chiswick on Thursday, July 31, to inspect and determine the relative merits of the Caladiums, Adiantums, foliage Begonias, and Pentstemons, grown for that purpose in the Society's gardens. Members present:—John Fraser, Esq., Chairman; Messrs. James O'Brien, Harry Turner, John Woodbridge, John Dominy, James Hudson, Herman Herbst, and John Laing. The method of proceeding was to go over the entire collections, as they had been carefully grown side by side by Mr. Barron, each member selecting any of the specimens which he considered well worthy of general cultivation, the selection in each case was again carefully gone over by the committee, each plant being put to the vote, and either excluded or awarded two or three marks according to its merits. In all cases, while bringing their experience to bear on the subject before them, the committee desire it to be understood that their judgment on the plants brought before them is given without prejudice to the great number of good kinds which were not on trial.

It is a pity that raisers do not more generally avail themselves of the opportunity given at the Chiswick gardens, under Mr. Barron's superintendence, of seeing new and meritorious productions side by side with known kinds. The selections were made having regard to the general usefulness of the plant, its habit, its beauty, and its good constitution.

Caladiums.—Best selection, three marks:—

Caladium argyrites	Caladium Paul Veronese
,, candidum	,, Mons. A. Hardy
,, Alfred Bleu	,, Princess of Wales (yellow, good)
,, pictum (the old species)	,, Princess Teck (yellow, good)
,, Ceres	,, Clio
,, Dr. Lindley	,, Laingii
,, Mad. de la Devansaye	,, Rameau
,, Ville de Mulhouse	,, Mad. M. Schæfer
,, Comtesse de Condeixa	,, Mithridate
,, minus erubescens (Schmellini section)	,, Luddemanniana
,, Gerard Dow	

Caladiums.—Two marks:—

Caladium Princess Alexandra	Caladium Mad. Alfred Bleu
,, Mad. Heine	,, Max Kolb
,, John R. Box	,, Chantinii

Adiantum.—Best selection, three marks:—

Adiantum cuneatum	Adiantum pubescens
,, Pacotii (syn. compactum)	,, hispidulum
,, gracillimum	,, Veitchianum
,, Lathomii	,, amabile
,, decorum	,, rubellum
,, Victoriæ	,, Capillus-veneris (hardy)
,, concinnum	,, cardiochlæna
,, ,, latum	,, speciosum
,, tenerum	,, rhodophyllum (Veitch)
,, scutum	,, Farleyense
,, trapeziforme	,, lunulatum dolabriforme (good for baskets)
,, Sancta Katherinæ	,, Edgworthii ciliatum (good for baskets)
,, macrophyllum	,, assimile
,, pedatum (hardy)	,, reniforme
,, formosum	

Adiantum Luddemannianum.—Two marks.

Foliage Begonia.—First selection, three marks:—

Begonia Rex	Begonia Louise Chrétienne
,, Duc de Brabant	,, Bettine Rothschild
,, Marshalli	,, Apotheose
,, Emile Chati	,, Zenobia (Veitch)
,, Seneca	,, Julie Serot (Veitch)
,, Juliette Raulin	,, ricinifolia leptophylla
,, Madame Tryneau	,, Comte Alfred de Leon
,, Xanthina var. argentea	,, Marga
,, Helene Udher	,, Sylvia (Bull)

Pentstemons.—Best, three marks:—

Pentstemon Cerise Queen	Pentstemon Edison
,, Purple Queen	,, Marjolaine
,, Virginale	

The committee also inspected some red Currants, pronouncing favourably on Victoria or Raby Castle, which produces very long sprays of large bright red fruits; and Haughton Castle, a very close-growing variety and a profuse fruiter—Mr. Turner thinks it ought to be grown in pots.

Benary's hybrid Carnations were also inspected and pronounced worthy as border plants, the best by far being Anna Benary—white, with rose line and edge. In addition to the varied stock of trial plants, which it is a wonder Mr. Barron can so skilfully manage and tabulate, the Begonia-house contains a very fine lot of plants of the first beauty and merit as seedling decorative plants.

Reports of Societies.

Royal Horticultural: *Aug.* 12.—The conservatory was well filled with a miscellaneous collection of flowers and vegetables, the main feature consisting of very numerous exhibits of fruits and vegetables grown by cottagers. We were pleased to see that the collection was not only large, but that it included exhibits from widely separated localities, and that on the whole the quality was very good—especially so being the Beans, Peas, Onions, and Potatos—having in view the late hot dry weather. Some improvement in "setting up" is desirable, and more care should have been taken to ensure correct nomenclature. In many instances no names at all were appended to the varieties shown. This is to be regretted, for it is almost impossible in so large a collection, amid the bustle of these meetings, to recognise the sorts. The omission of the names defeats one of the main objects of such exhibitions, which should serve to illustrate prominently which varieties are best suited for cottagers' purposes generally and for special localities. The weak points were to be found in the fruit classes, but as nothing more conduces to future advances as the knowledge of our shortcomings in the present, we may reasonably expect the items under the various classes to make a more meritorious display on the next trial of strength. We want greater variety, as more Peaches, Nectarines, Apricots, Plums, early Pears and Apples, cool-house Hamburgh, Chasselas, and Frontignan Grapes, Figs, Mulberries—all these fruits are cultivable about the suburbs of London, in the open in some instances, and in others under some simple glass protection. Further details of this department are given further on. Among the flowers the principal things were a fine stand of Gladiolus, sent by Messrs. Kelway, some double Dahlias from Mr. C. Turner, of Slough. Single varieties were also shown by Mr. Ware. Among the best of these were the old variety Paragon, Pantaloon, with white florets banded with maroon; Fire King, rich crimson; Cochineal, deep red-violet; Mrs. Bowman, a lovely flower, deep rosy-lilac in colour, and of good form. Among the flat-flowered doubles of the Yuarezii type was General Gordon, bright red, very effective. Mr. Noble brought cones of Abies nobilis and Pinus parviflora, together with flowering sprays of Spiræa Lindleyana, Douglasii, Nobleana, callosa, and Fortunei. Mr. G. F. Wilson sent cut spikes of Lilium superbum, some 9 feet in height, with flowers of deep orange-red colour From the new Plant and Bulb Company came, among other things, a cut spike of Eremurus Olgæ, an Asphodel-like plant with a dense spike of pinkish-cream coloured flowers, each segment marked with a narrow central line of dark puce colour, and Gladiolus Enfant de Nancy, with relatively small flowers of a rich deep crimson colour. Messrs. C. Lee & Sons sent a group of Statice floribunda in small pots, admirably adapted for greenhouse decoration. The plant is of good habit with dense trusses of lilac and white flowers. It had been previously certificated, and the present exhibit showed that the award was well merited.

FLORAL COMMITTEE: *Section A.*—Dr. Masters in the chair. Present: Messrs. Laing, O'Brien, Kinghorn, Herbert, Dominy, and Hill.

The plants specially brought before the section were Scuticaria Steeli, from the New Plant and Bulb Company, an old-fashioned and singular Orchid, with long linear cylindric leaves and large flowers, with oblong greenish-yellow segments dotted with purple. The side lobes of the lip are erect, the terminal lobe flat, oblong, obtuse, cream-coloured with a thick orange crest of raised ribs at the base. Curcuma sumatrana, shown by Messrs. Veitch, is an interesting plant with stalk oblong, finely ribbed leaves, and flower-spikes bearing crowded boat-shaped bracts of a dull red colour marked with fine veins and partially concealing the yellowish flowers. Ixora Westi×, also sent by Messrs. Veitch, is a reputed hybrid between I. odorata and I. amboinensis. It is of good habit, with ovate lanceolate leaves and dense terminal trusses of slender trumpet-shaped flowers of a lovely pale pink hue. Lælia elegans superbissima, sent by Messrs. F. Sander & Co., has white sepals and petals, the lip being rich deep violet with a white throat. Mr. King, of Rowsham, Aylesbury, sent two seedling Coleus, one called Earl Dudley, small, with crimson foliage edged with green, but not sufficiently distinct; and another called Countess of Dudley, of very fine habit, and with bold, wavy foliage; the disc clear yellow, spotted with green. Cattleya Eldorado Wallisii was sent by Mr. De B. Crawshay. It is in the way of C. Wallisii. The same gentleman sent flowers of Disa grandiflora, and two varieties of the same; and Mr. A. H. Smee Lycaste Deppei and an improved variety.

The awards made were:—

FIRST-CLASS CERTIFICATES.

Section A.

To Messrs. James Veitch & Sons, for Ixora Westi×.

To Messrs. F. Sander & Co., for Lælia elegans superbissima.

To Mr. James King, Rowsham, Aylesbury, for Coleus Countess of Dudley.

BOTANICAL CERTIFICATES.

To The New Plant and Bulb Company, for Scuticaria Steeli.

To Messrs. James Veitch & Sons, for Curcuma sumatrana.

VOTES OF THANKS.

To Messrs. C. Lee & Sons, for Statice floribunda.

To Mr. Smee, for Lycaste Deppei.

To Mr. De B. Crawshay for Cattleya Eldorado rosea.

To Mr. De B. Crawshay, for Disa grandiflora.

To Mr. De B. Crawshay, for Disa grandiflora superba.

To Mr. De B. Crawshay, for Disa Barreli.

To Mr. G. Goldsmith, The Gardens, Hollanden, Tonbridge, for Passiflora quadrangularis.

Section B.—Present: Shirley Hibberd, Esq., in the chair; Messrs. James Douglas, W. Beilby, G. F. Wilson, J. James, and G. Duffield, by whom the following First-class Certificates were awarded:—To Messrs. Kelway & Son, Langport, Somerset, for Gladiolus Lady Carington; to the New Plant and Bulb Company, Colchester, for Montbretia elegans and Tigridia pavonia alba; to Messrs. Cannell & Sons, Swanley, for double flowered Begonia Madame Arnold, Tigridia pavonia alba, and a variety of Hibiscus Trionum var., shown as Malva Knelleri.

FRUIT COMMITTEE.—Present: John E. Lane, Esq., in the chair; Messrs. J. Lee, J. Willard, F. Rutland, A. W. Sutton, G. Goldsmith. A Vote of Thanks was given to Mr. Herbst, The Nursery, Kew, for King of Tomatos, a round bright coloured variety, less in size than Vick's Criterion, of the same shape,

and seemingly an abundant bearer. Mr. Rutland, The Gardens, Goodwood, received a Vote of Thanks for some few enormous examples of the Goodwood Melon. Amongst a boxful of Clematis hybrids set up by Mr. C. Noble, nurseryman, Bagshot, we noticed the lilac-coloured C. Proteus, the flowers of which are produced as single ones now, albeit in the spring on the earliest growth they come always of the double form; C. ascotensis, of the colour of Achimenes longiflora, and the white Jackmanni were charming flowers, both being constant single blooms, and showing the habit of continuous bloomers.

Cottagers' and Artisans' Exhibition of Garden Produce.—It was a happy thought, and one quite in consonance with the objects of the Health Exhibition, which led to the remarkable display of cottager or working-class garden productions at South Kensington on Tuesday last, and the promoters are to be congratulated upon the results, for a finer show of products raised under similar conditions has never been brought together. Though accustomed to see first-rate exhibits from cottagers here and there, yet in this case there was, as it were, a concentrated effort of all the best exhibitors of that class all over the kingdom, and as a result a display of unusual excellence. As will be seen from the report appended, exhibitors came from districts so remote as Dorset on the one hand, and the northern town of Dingwall, in Ross-shire, on the other, including Penrith, and other distant places. There were sixty exhibitors, and a total of 1770 entries, so that the labour involved was considerable. Whether all the exhibitors were of the *bonâ-fide* cottager or artisan class it would be difficult to say, but it is assumed, of course, that they were. In very many cases, as will be seen from the number of exhibits in the various classes, the competition was extraordinary, and throughout the prize lots were of such high-class character that even good gardeners might have found it hard to have beaten the best. The prizes were large—quite three times the value of those usually found in cottagers' schedules, and some of the more successful must have had good reason to return home rejoicing. Were it possible that such an interesting show could be repeated next year, we would suggest such an arrangement of classes as would give average exhibitors a better chance, by making duplicate ones, in which competitors could show in one only. The first class was devoted to collections of garden produce, sent by local horticultural or cottage garden societies, grown by and collected from the members, and entered by the secretary of the society. In this case, not less than twelve distinct kinds of vegetables, and six distinct kinds of fruit were required, and the conditions doubtless helped to restrict the competition, as there were but three entries, the largest coming from the Petworth Garden Society, Sussex, and comprised several sorts of Potatos, Onions, Celery, Marrows, Cabbages, &c., and nineteen plates of Apples, Pears, Currants, Gooseberries, and other fruit. Though by virtue of its extent placed 1st, it was not in the vegetable section a handsome lot, and on the whole far from being meritorious. The 2d prize lot consisted of twelve kinds of vegetables, and six of fruits, came from the Wrotham Horticultural Society, and was, if a small lot, at least very neat, and as much could be said for the 3d lot, which came from Bromley (Essex) Horticultural Society. On the whole, it cannot be said that this class is worthy of repetition. Happily the money saved, because of the small competition, enabled a number of extra prizes to be awarded to meritorious exhibits in other classes, later in the day.

Limited Collections.—Of these there were one class for six kinds of vegetables, and one for four kinds. There were twenty-three competitors in the first of these classes, making a brave display, with capital quality throughout. Here Dorsetshire men were in strong force, Mr. G. Hazzard, of Sherborne, coming 1st, with beautiful white Celery and Intermediate Carrots, fine Runner Beans, Ashleaf Potatos, good Onions and Peas. Mr. Jas. Kite, of the same place, came 2d, having long tapering handsome Parsnips, White Spanish Onions, Woodstock Kidney Potatos, good Carrots, Peas, and Runner Beans. Mr. H. Gibbs, Ightham, Sevenoaks, was 3d, his lot including fine Giant Rocca Onions, Canadian Wonder Dwarf Beans, pretty Snowflake Potatos, Moore's Vegetable Cream Marrows, &c. Mr. Warren, Shrivenham, was 4th; another Sherborne man, Mr. Saunders, came 5th; and Mr. T. Beckett, Amersham, 6th. In the next class, for four kinds of vegetables, there were twenty-seven collections. In this case Mr. Warren came 1st, with good Runner Beans, pretty white Marrows, small neat Cabbages, and International Potatos. Mr. F. Beck, Hemel Hempsted, who was 2d, had Spanish Onions, Bresee's Prolific Potatos, Cabbages, and Runner Beans. Mr. W. Cooper, Shrivenham, was 3d; Mr. Baker, Bampton, Oxon, 4th; Mr. J. James, Teddington, 5th; and Mr. W. Page, Bedford, 6th.

Potatos were in immense force, and generally of capital quality. In the class for three kinds of rounds there were thirty-three collections, the 1st place being taken by Mr. Warren, who had pretty though medium-sized Schoolmaster, Reading Russet, and Porter's Excelsior. Mr. W. Burrows, Lutterworth, came 2d, with fine though hardly smooth samples of Schoolmaster, The Dean, and Reading Russet; whilst Mr. Beckett, who was 3d, had with Schoolmaster and Reading Russet rather coarse Peerless. Mr. G. N. Kentish was 4th. Vicar of Laleham, Radstock Beauty, and Triumph were well shown in this class. In the corresponding class for three dishes of kidneys there were thirty-two lots. Mr. G. Kirtland, Bletchington, came 1st, with fine Mr. Bresee, Prizetaker, and International. Mr. H. Gibbs was 2d, with very clean and pretty Snowflake, International, and Beauty of Hebron. Mr. Burrows came 3d, with fine Woodstock Kidney, Snowdrop, and International. Mr. T. Nunn, Maldon, Essex, was 4th. In this class two otherwise excellent lots were disqualified, because in one case Woodstock Kidney was put in twice, the second dish being labelled Ashtop Fluke; and in another International, already shown, was also put in as Cosmopolitan. In the single dish class for round kinds there were forty lots to choose from, and Mr. T. Whatley, Stroud, came 1st, with very handsome Vicar of Laleham; Mr. Kirtland coming 2d, with good Reading Russet; Mr. Barron 3d, with good Schoolmaster; and Mr. Baker 4th, with Vicar of Laleham again. A fine dish of Blanchard somewhat rubbed was shown in this class. Of single dishes of kidneys there were forty-two, Mr. Warren having the best in handsome Woodstock Kidney; Mr. Burrows coming 2d, with the same kind; Mr. R. Hall, Dartford, having the next best in International; and Mr. Gibbs 4th, with very nice clean Snowflake. In all the Potato classes some extra prizes were later awarded, as well as several commendations bestowed.

Peas.—The competition in these was necessarily limited, but here a new competitor—Mr. Wetheral, Penrith—came to the front, having really admirable samples of Stratagem and Evolution. Mr. Munro, Dingwall, was 2d with good kinds unnamed; Mr. Kite, from Sherborne, coming next with nice Ne Plus Ultra and Laxton's Sturdy; Mr. Burrows 4th. That out of the eight lots staged only two were named rather indicates that correct naming should in all cases be enforced. There were eighteen entries in the single dish class, Mr. Wetheral being again 1st with fine Stratagem, Mr. Munro coming again 2d, also with same kind; Mr. Gibbs was 3d with Telephone, and Mr. Dredge, Bletchley, Bucks, 4th.

Onions made a big class, there being thirty-three dozens of various kinds, but winter Onions carried the prizes by virtue of size and shape. Mr. T. Willis, Maidenhead, had very fine Giant Roccas for the 1st lot; Mr. J. Packman, Aylesbury, came 2d with same kind; Mr. Jacob, Petworth, was 3d, and Mr. Nunn 4th, both with fine Tripolis.

Cabbages were but moderately good, the best large white heads coming from Mr. David Green, Ealing; Mr. G. Mayes, Halton, Middlesex, coming next with small Drumhead; Mr. E. Cane and Mr. W. Cane, both of Ealing, following with red Cabbages.

Lettuces were also moderate in quality, Mr. Warren having the best in White Cos, Mr. Willis, Mr. Beckett, and Mr. Kite, following with medium samples. Scarlet Runner Beans made a fine class of thirty-four dishes, the general quality being excellent. The prizes went to Messrs. Kite, Baker, Mayes, and Jas. Harvey, Hertford, in the order placed. Out of thirty-threes lots of dwarf Beans, Mr. Baker had the best, Messrs. Beckett, Warren, and Wellard, Dartford, taking the other prizes; Canadian Wonder was the chief kind shown. Broad or Longpod Beans were rather indifferent though Mr. Munro was able to send from the far North a good sample of Leviathan; Messrs. Barrow, Kite, and Saunders taking other prizes. Carrots made a pretty show, and were generally very handsome; Mr. G. Kirtland was a good 1st, with very beautiful Long Red Surrey, Mr. Hazzard coming next with pretty Intermediate, Messrs. Saunders and Baker following with the same kind. Of Turnips there were twenty bunches, handsome white kinds, shown by Messrs. Hazzard, Kite, and Saunders coming 1st, 3d, and 4th, and Mr. Munro was 2d with handsome and rich coloured Golden Ball. There were twenty-nine lots of Beet, but the Turnip-rooted kinds, though so useful for early salads, stood no chance, good samples of Dell's Crimson taking the prizes; these fell to Messrs. Beck, Warren, Saunders, and Hazzard, as placed. Of Cucumbers there were twenty-five, Mr. Kite having the best one in Tender and True; Mr. William Ellis, Romford, coming 2d, with Pearson's Long Gun; Mr. Page came 3d, with Telegraph, and Mr. Saunders was 4th. There were not less than thirty-three brace of Vegetable Marrows, the samples selected being rather small and pretty than profitable, the prizes going to previous named exhibitors. Tomatos were rather good for cottagers, and must have been produced under glass. Messrs. Farndon, Peasey, and Weal, all of Ealing, had the best samples. Mr. Peasey had the best six kinds of sweet herbs, and Mr. Beckett the best four kinds of salads. Handsome Celery, good Shallots, Spanish Onions, and red Cabbages took the prizes in the miscellaneous class for vegetables.

The Fruit shown by the amateur growers consisted mostly of Gooseberries, red and white Currants, Morello Cherries, Raspberries, and one dish of Strawberries, from Skelton, in far-away Cumberland, shown by Mr. R. Wetherell. A few dishes of Apples were shown, as well as of such Plums as will grow on trees in the open. Mr. W. Jacobs, Pound Street, Petworth; Mr. Mayo, Hatton, Middlesex; Mr. Kirtland, Bletchington, Oxon; Mr. Kentish, Bedwood, Hemel Hempstead; Mr. Peasey, St. Matthew's Road, Ealing Common; Mr. Conway and Mr. Castle, were the principal prize-winners in the different classes.

Gladioli.—The principal feature in the general flower show was a splendid collection of 144 Gladioli spikes, from Messrs. Kelway, of Langport. The spikes were arranged with excellent effect, and they were also exceedingly well grown. Further, on this occasion, Messrs. Kelway prudently exhibited only such varieties of their own raising as they had propagated sufficiently to be able to place them in commerce immediately. This is much more satisfactory than the method of exhibiting from the seedling bulbs. In that state First-class Certificates might be awarded to them, but they are lost to sight for six or eight years, and the interest in them as new varieties is forgotten. In fact, it would be much better not to award certificates to spikes of Gladiolus until more than one spike of a variety can be exhibited together. Messrs. Kelway have adopted this plan of their own accord, and they are to be commended. They exhibited four varieties for Certificates, all of them were of considerable merit, although only one was selected for the highest award, viz., Lady Carrington, a superb and distinct variety, forming a long spike of large well formed flowers of a distinct pale lilac colour with white centre. The other new varieties were St. Gatica, a superb variety, with long spikes of perfect flowers, of a rich deep rosy-crimson colour, and whitish centre. William Coleman, very distinct; flowers orange-scarlet, with a crimson purple blotch at the base of the sepaline segment. G. T. Miles, rosy-red with white centre, the flowers borne erect on a long spike. The general collection contained a large and varied selection of the newest varieties; and for convenience of reference we divide them into

Section 1: White or light coloured.—Queen Mary, white, with violet centre; Agnes Mary, large well formed flowers, white, pale lilac blotch on lower petal; Daimio, white flushed with lilac; Mrs. J. Eyton, very fine and distinct, with rosy-lilac blotch; Duke of Teck, blush white, fine form, rosy-red centre; Neocles, white, marked with purple on the lower petals; Mrs. D'Ombrain, a well formed variety, white, with a tinge of lilac; Agdestes, a large flower of good substance, white, with a purplish-violet mark on the lower petal; Lord Powis, white, with rose flush on the edge of the petals, and reddish flame.

Section 2: Scarlet and red-coloured varieties.—Maréchal Bazaine, clear light scarlet, white centre; Caliphion, rose, streaked with deep red, light centre; Earl of Airlie, bright deep red; Captain Boyton, red, scarlet flake; Pictus, reddish, with violet-purple centre; Marcianus, deep rich scarlet, veined with maroon; Dr. Benson, light scarlet, purple centre; Mr. Thornton, very fine scarlet, flushed with lake, white centre.

Section 3: Mr. Derry, a very fine variety, pale lilac-purple, veined with rosy-purple; Electra, pale rosy-lilac, white throat; Countess of Pembroke, rich purple, with a flush of lake; Lady Cavendish, pale lilac, fine form; Remus, good form, bright rosy-purple flaked crimson; Helum, rich violet-purple, with crimson-purple flake.

The above selection represents the best exhibition varieties in cultivation. A Silver-gilt Medal was awarded to the collection.

Dahlias are not expected to be exhibited in their best form until September, and the tropical heat we have had to undergo during the last week has forced many of the flowers out of character—indeed, the plants and flowers drooped very much in the noonday heat, with syringing and watering every night. Notwithstanding these drawbacks, Mr. Charles Turner, of Slough, was able to exhibit seventy-two blooms in capital condition, most of them being the best show varieties. He also exhibited three blooms of a new fancy variety, named General Gordon; the flowers were of large size, and good form; the base of the petals was yellowish-buff, the upper portion to more than half their depth being orange-red. The general collection contained a selection of most of the best show varieties in cultivation; particularly fine

were the following:—George Rawlings, rich dark maroon with good centre; Goldfinder, yellow, slightly tipped with red; James Cocker, fine deep purple; John Bennett, a very distinct yellowish flower; Joseph Ashby, one of the best formed flowers, orange-buff; Julia Wyatt, one of the best white kinds; Michael Saunders, a neat flower of the best form, reddish-purple; Sunbeam, buff, good form and large size. It would occupy too much valuable space to characterise all the varieties in this collection, which could not be easily matched so early in the year, and this is the less necessary that the Grand National Dahlia Show will be held at the Crystal Palace in three weeks, when all the new and the best of the old varieties will be placed in competition.

Mr. T. S. Ware exhibited a collection of Single Dahlias, representing the greatest advance this section has at present attained unto. A new fancy single variety was examined by the committee, of the Pantaloon type, but it was not thought equal to that variety. Mr. Ware also exhibited a selection of seedlings from Yuarezii, or, at least, of that type, which might be designated garden varieties, as they sadly break the uniformity of a stand of show flowers. Some of them were richly coloured, and might be prized by those who do not like the more symmetrical and perfect form of the show varieties. The committee did not select any of them for the award of First-class Certificates.

A curiously marked Gladiolus was shown by the New Bulb Company in Marie Lemoine, the three upper petals being cream-coloured, and the reverse side greenish; the two lower petals being also cream-tinted, but having a lake-coloured blotch of great size descending into the throat, whilst the lip of each was sulphur-coloured; the flower-spike was compact and small.

Bournemouth Horticultural: *August* 4.—The seventh annual exhibition of plants, fruits, flowers and vegetables of this Society was, under most favourable circumstances as regards the weather, held in the Town Hall Buildings on Bank Holiday, and, as compared with previous shows, it cannot be pronounced the best one the Society ever held. This, too, is to be wondered at, seeing that the district (a fashionable seaside resort) and the situation are such as might be reasonably expected to contribute largely both to the funds of the Society and the stages of the exhibition-tables the elements necessary to make the show not only attractive to gardeners, but to visitors also. Moreover, there are several good gardening establishments within easy reach of Bournemouth if prizes sufficiently liberal to entice them thither were offered. The plants, however, were shown off to greater advantage in consequence of there being more available staging-room, and there were some very creditably flowered plants staged, including in the 1st prize collection well-flowered plants of Stephanotis floribunda, Allamanda Hendersoni, and Plumbago capensis, and (in Mr. W. Earp's collection) a grandly flowered plant of Eucharis amazonica. Pelargoniums and Coleus were also shown well. The prizes offered for groups of plants, not to occupy more than 60 feet space, brought out a very creditable and good arrangement of plants eminently suitable for decorative purposes, and these—especially those in the 1st prize group—were arranged very tastefully, light graceful plants showing well above a carpet of Maidenhair Fern (Adiantum cuneatum), and the whole being edged with small plants of Caladium argyrites and Maidenhair Fern had a very telling effect, and elicited great praise from visitors and gardeners alike, as also did Mr. Earp's group. The following is a list of the awards made by the judges:—

Open Classes.—Plants.—For a collection of six stove and greenhouse plants, Mr. W. Osborne, gr. to the Rev. F. Hopkins, Vicar of Holderness, Bournemouth, secured chief position with a very creditable collection; 2d, Mr. Albert Shadwell, gr. to Hay Morant, Esq., Manor House, Ringwood, who was followed closely by Mr. W. Earp, gr. to John Sellom, Esq., Hume Towers, Bournemouth. For a collection of stove and greenhouse ornamental foliage plants there were only two competitors, namely, Mr. W. Osborne and Mr. Shadwell, who took the prizes in that order. Mr. Piper, Parkstone Nursery, near Poole, was 1st for nine exotic Ferns, distinct, with a very fresh lot, including a fine Cyathea medullaris and Dicksonia antarctica; 2d, Mr. W. Osborne. For six Fuchsias Mr. Cobbe, gr. to Mrs. Marsden Smedley, Gablehurst, Brankstone Park, Bournemouth, was 1st, and Mr. W. Earp 2d. Mr. C. Phillips, gr. to Mr. P. J. Hankinson, Eastbury, Bournemouth, was 1st for a single Fuchsia, and Mr. Cobbe 2d. Mr. Phillips was again 1st for six zonal or nosegay Pelargoniums, and Mr. Cobbe 2d; and for a like number of Achimenes, Mr. Earp was 1st, and Mr. Phillips 2d. There was only one entry for three pots of Lilium auratum, and Mr. Roberts, gr. to Mr. W. Merson, Lainstone Lodge, Bournemouth, was awarded a 2d prize. For six single Petunias, Mr. John Hobbs, gr. to Mr. W. H. Reeves, Foxholes, Christchurch, was 1st, and Mr. Earp 2d; and in the corresponding class for six doubles, Mr. Hobbs was the only exhibitor; and for six nicely grown plants was awarded 1st prize. For four Coxcombs, Mr. G. Newman, The Grange, Bournemouth, obtained 1st, and Mr. W. Newman, gr. to F. C. Hyde, Esq., Wilderton, Bournemouth, was 2d. Mr. W. Earp had the six best Balsams, and Mr. Shadwell the 2d best. Mr. Phillips had the best six Coleus, nicely grown and well-coloured plants; Mr. Earp being a good 2d. Mr. Piper had the best group of plants, Mr. Earp the 2d, and Mr. Cobbe the 3d best. These groups formed an interesting feature to the left of the central stage at the entrance to the hall.

Cut Flowers.—For twenty-four Roses, distinct, Messrs. Keynes, Williams & Co., Salisbury, were 1st, with a superb lot of blooms; Mr. Davis, of Wilton, being a very good 2d; there were only two lots staged. In both classes for twelve varieties of Dahlias, Messrs. Keynes & Co. were the only exhibitors, and secured 1st honours in each case, with a grand lot of blooms, mostly the same varieties as those staged by that firm in Southampton the previous Saturday, including Mrs. Langtry, one of the two varieties certificated at that show. For twelve trusses of Pelargoniums, distinct, Mr. C. Phillips secured 1st position, and Mrs. Hubbard 2d. There was only one exhibitor in the class for twelve Gladioli spikes, viz., Mr. J. Joy, Bournemouth, who was awarded a 1st prize. Mr. Swaffield, Exotic Nursery, Bournemouth, was 1st for hand bouquets, and Mr. Earp 2d.

Fruit.—The classes for fruit were badly contested, those staged in competition for the prizes, however, were good. Mr. P. Davison, gr. to Lord Wolverton, Trewerne Minster, Blandford, secured 1st in the black Grape class, with three good well-finished bunches of Black Hamburgh; Mr. Earp being a very good 2d, with the same variety; and in the corresponding class for a like number of bunches of white Grapes, Mr. Hawkes, gr. to Mr. Merton Cotes, Royal Bath Hotel, was 1st, with three of the largest and best finished bunches of Sweetwater we have seen this season; Mr. Earp was 2d, with the same variety, also well finished, but smaller bunches. Mr. Earp was a good 1st for six Peaches, and Mr. G. H. Richards, gr. to the Earl of Normanton, Somerley House, Ringwood, was 2d; and in the class for six Nectarines there was only one entry, and a 2d prize was awarded to Mr. Osborne, The same exhibitor secured 1st place for a fine dish of Coe's Golden Drop Plums. Mr. Earp was 1st for twelve culinary Apples, and Mr. T. Wilkins, gr. to Mr. Merthyr Guest, Henstridge, near Shaftesbury, 2d; and for a like number of dessert Apples, Mr. Earp was again to the front. For one Melon, Mr. Osborne was 1st, and Mr. Wilkens, 2d. There was only one Pine-apple entered—a fine Queen, by Mr. Richards who was awarded a 1st prize for it. There was also only one entry for miscellaneous a collection of fruit (Pines excluded), and for which a 2d prize was awarded to Mr. Shadwell.

Vegetables.—For the best collection of eight kinds of vegetables Mr. Richards was easily 1st, with a very clean even lot, and Mr. Wilkins 2d; Mr. Shadwell being only a few points behind Mr. Wilkins' collection. Mr. Osborne had the best brace of Cucumbers, and Mr. Richards the 2d best. For collections of six kinds of vegetables (not open to exhibitors in the class for eight kinds) there was only one entry, Mrs. Hubbard, who was awarded a 2d prize.

Special prizes, for the best pair of flower-stands arranged with with flowers and foliage for table decoration.—1st, Mr. Cobbe. Best single ditto.—No 1st; 2d, Mr. G. Taylor.

Amateurs.—Plants and Flowers.—For four Fuchsias, there was only one entry, Mr. C. W. Hall; and a 2d award was made. Specimen Fuchsia.—1st, Mr. J. T. Hankinson; 2d, Rev. J. R. Phelps. Four zonal Pelargoniums.—1st, Mr. T. J. Hankinson, with really good plants, covered with large fresh trusses of bloom; and for a like number of variegated leaved plants the same exhibitor secured 2d; there was only one entry. Collection of eight Ferns.—1st, Mr. C. W. Hall, with a neat fresh lot of plants. Group of plants for effect, not to exceed 30 feet space.—1st, Mr. Merson; 2d, Mr. T. J. Hankinson. Cut flowers.—Gladioli, eight spikes.—1st, Mr. Merson. Twelve Dahlias.—1st, Mr. G. Taylor; 2d, Mr. Cobbe. Twelve double Petunias.—1st, Mr. J. J. Hobbs. Hand bouquet.—1st, Mr. C. W. Hall; 2d, Mr. Merson. Fruits and vegetables were also shown somewhat largely and well, especially Potatos, including Prizetaker, Reading Russet, Vicar of Laleham, and Schoolmaster.

The cottagers' classes, more especially those for Potatos, Onions, Marrows, and Carrots, were keenly contested, and the produce of the gardens of cottagers and artisans were alike meritorious and creditable to the cultivators.

Mr. Swaffield, Exotic Nursery, Bournemouth; Mr. W. Sephonson, Haywood, Bournemouth; Mr. Horsey, Westbourne; and the Rev. E. R. Phelps, contributed a variety of plants not for competition, as also did the Messrs. D. & W. Stewart, of the Ferndown Nurseries, Wimborne, a fine variety of neatly grown coniferous trees in pots, including Retinospora plumosa aurea, Thuia borealis compacta, Cupressus pulcherrima, &c., and which effectively furnished the entrance hall to the exhibition, the Secretary of which (Mr. Harry Nash) deserves a word of praise, as also do the committee, for the satisfactory manner in which the management of the exhibition was carried out.

Scottish Horticultural Association.—The fifth ordinary meeting of this Association was held at 5, St. Andrew Square, on Tuesday, August 5, Mr. Robert Morrison presiding. Mr. Alexander M'Kenzie, Warriston Nurseries, read a paper on "Coniferæ," confining himself to the first section of the Conifer tribe—Spruce and Silver Firs, and the Pines proper. Having described in succession the Picea Alcoquiana from Japan, the Spruces of North America, and the Eastern Spruces, Mr. M'Kenzie referred to the Prince Albert Hemlock Fir from California, which was, he said, superior in every respect to the Canadian form of the same tree. Of the Douglas Fir Mr. M'Kenzie said there were fine sections at the Manitoba Farm in the Forestry Exhibition under the name of Red Fir. Coming to the Silver Firs he mentioned the Nordmanniana and the Abies nobilis of California. The latter, although it had only been in this country for thirty-five years, attained a height of from 80 to 100 feet. The Abies Pinsapo ranked next, and was one of the most important introductions of the Oregon Association. The magnificent Silver Fir, Abies grandis, from California, took the first rank in size among the gigantic Firs of North-West America, where the wood was highly valued by settlers. Being so lofty, it was impossible to climb the trees, and as the cones were destroyed by the felling of the trees, the seeds were lost. Of the Pines proper here were the Austrian Pine, with its sombre and massive aspect, hardy constitution, and rapid growth; and the Corsican Fir, a geographical development of the last-named, and the quality, quantity, general utility, and early maturity of which were unsurpassed among the Pine tribe, and made it a rival of the now discussed Larch. Pinus Jeffreyi would produce more timber in a given period than any of our native Scots Fir, and a quality of wood not inferior to any tree of similar age. It grew in Edinburgh at the rate of about 15 inches a year. P. Benthamiana and P. ponderosa were variations of the same tree; and another Californian Pine, which had been recommended for extensive planting in this country, was the P. monticola, but it had not become very popular with arboriculturists. Mr. M'Clure, Trinity Grove, exhibited a magnificent specimen of the brilliant mule Pink named Napoleon III.

Massachusetts Horticultural: *Boston, July* 19.—To-day, being prize day for Hollyhocks, a large number of exhibits were made. Next to these the native flowers shown by Mrs. P. D. Richards and Mr. E. H. Hitchings, and the herbaceous plants exhibited by J. W. Manning, Reading, Mass., and Miss S. W. Story, were very interesting and instructive. Mrs. P. D. Richards showed the following wild flowers:—Potentilla anserina, Asclepias incarnata, Phytolacca decandra, Sericocarpus conyzoides, Solidago arguta, Ceanothus americanus, Geum strictum, Mimulus ringens, Drosera longifolia, D. rotundifolia, Agrimonia Eupatorium, Lilium philadelphicum, L. canadensis, Myrica cerifera, Corydalis glauca, Utricularia vulgaris, Specularia perfoliata, Diervilla trifida, Aster macrophyllus, Ranunculus multifidus, Anemone virginiana, Polygala sanguinea, Monotropa hypopytis, M. uniflora, Lysimachia stricta, Habenaria lacera, Solidago canadensis, Leonurus Cardiaca, Melampyrum americanum, Desmodium acuminatum, Epilobium angustifolium, Apocynum androsæmifolium, Cephalanthus occidentalis- Most of these plants had their common names attached, so that those who were not botanists might know their names. Mr. E. H. Hitchings exhibited wild flowers, as follows:—Rumex maritimus, Osmarhiza longistyle, Anagallis arvensis, Anemone virginiana, Leonurus Cardiaca, Epilobium angustifolium, Circæa canadensis, Linaria canadensis, Lysimachia clliata, Actæa rubra, Melilotus officinalis, M. alba, Desmodium acuminatum, Arabis canadensis, Dianthus Armeria, Lathyrus maritima, Elymus virginicus, E. striatus. J. N. Manning showed the following herbaceous plants, all carefully named:—Galium boreale, Veronica spicata, Catananche cœrulea, Centaurea calocephala, Achillea tomentosa, Anthericum liliastrum, Asclepias verticillata, Coreopsis lanceolata, Gypsophila paniculata, Spiræa Ulmaria, Monarda fistulosa, Lathyrus latifolius, L. Salicaria, Rudbeckia maxima, Asclepias tuberosa, Gypsophila paniculata, Dicentra eximia, Hypericum rotundatum, Clematis coccinea, Hibiscus moscheutos, Heliopsis lævis, Platycodon grandiflorus, Liatris spicata, Malva alcea. Miss S. W. Strong showed the following collection of herbaceous plants:—Aquilegia chrysantha, Gypsophylla paniculata, Achillea millefolium, Funkia ovata, Galium boreale, Lathyrus latifolius. L. Salicaria, Yucca filamentosa, Helianthus, Clematis integrifolia, Statice, Coreopsis lanceolata. Mrs. E. M. Gill showed a collection of Lilies and Hollyhocks. The Hollyhock was shown very largely by many contributors. Miss S. W. Story and Mrs. E. S. Joyce made extensive displays of cut flowers. The White Gondoin and Fay's Prolific Currants were shown, and the McLaren Raspberry.

Dr. Henry P. Walcott was appointed delegate, with power to appoint a substitute, to the congress of the Société Centrale d'Horticulture du Département de la Seine-Inférieure, to be held at Rouen, Oct. 3—12.

July 26.—At the free exhibition of to-day, held from 12 A.M. to 3 P.M., quite a large and varied collection of plants and vegetables were shown. Among the most noticeable groups of plants were the native wild plants shown by Mrs. P. D. Richards, an eminent botanist, who has shown more than 100 different specimens this year all carefully named with both the scientific and the common name, thus making it very instructive to all. Mr. E. H. Hitchings contributed a plant of Cicer arietinum; John C. Hovey exhibited a new double Amaryllis from Japan, and Convolvulus leptophyllus from New Mexico. Brassica verrucosa, a splendid Orchid, was shown by Joseph Tailby. Mrs. Margaret Parker showed flowers of Nelumbium speciosum and Limnocharis Humboldtii. Mrs. E. Wood contributed a handsomely arranged vase of flowers, and J. H. Woodford a large bouquet of Sweet Peas. Hon. M. P. Wilder showed the new Rose raised and named for him by the late lamented Henry B. Ellwanger, son of Mr. Geo. Ellwanger, of Rochester, New York, widely known for his popular work on *The Rose*, and for his careful classification of the queen of flowers, and his enterprising experiments in its hybridisation. It is of splendid form, colour, and very fragrant, and has every indication of becoming a continuous bloomer. All the fruits of the season—Raspberries, Blackberries, Currants,

Gooseberries, &c.—were well represented. Warren Fenno showed large specimens of Speedwell Gooseberries, and Mrs. E. M. Gill, Whitesmith. B. K. Bliss & Son, of New York, showed vines of Abundance and Bliss Everbearing Peas; one of the former bore seventy-one pods, and one of the latter seventy-five. *Correspondent.*



STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 13, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 Years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity Sat. = 100	Wind: Average Direction.	Rainfall.
Aug.	In.	In.	°	°	°	°	°	°			In.
7	29.80	−0.11	84.6	55.5	28.5	70.9	+6.9	59.3	71	E: NE.	0.00
8	29.88	+0.13	87.0	61.0	26.0	72.4	+10.4	60.5	65	E.	0.00
9	29.83	+0.08	84.5	61.0	23.5	71.1	+9.0	60.5	69	N.E.	0.02
10	29.80	+0.05	82.5	58.5	24.0	69.5	+7.4	57.1	64	N.W.: N.E.	0.00
11	29.76	+0.01	91.0	61.0	30.0	75.7	+13.5	57.1	52	S.E.: S.S.E.	0.00
12	29.78	+0.02	82.0	64.0	18.0	71.1	+8.0	60.1	68	S.W.: S.S.E.	0.00
13	29.82	+0.06	77.5	62.5	17.0	67.6	+5.4	59.2	75	S.W.	0.03
Mean	29.82	+0.07	84.1	60.2	23.9	70.9	+8.8	59.1	65	N.E.	0.05

Aug. 7.—Very fine day and night.
— 8.—Very fine day and night.
— 9.—Very fine till 2.30 P.M., bright at intervals afterwards. Rain from 9 P.M.
— 10.—Dull, fog in morning. Very fine afternoon and night.
— 11.—Very fine day and night. Lightning at night.
— 12.—Lightning and thunder in early morning. Very fine day and night.
— 13.—Fine and bright at times. Rain falling at 10 P.M.

LONDON: *Atmospheric Pressure.*—During the week ending August 9, the reading of the barometer increased from 30.02 inches at the beginning of the week to 30.32 inches by midnight on the 4th, decreased to 30.20 inches by 3 P.M. on the 5th, increased to 30.26 inches by midnight on the same day; decreased to 30.08 inches by 3 P.M., increased to 30.10 inches by midnight on the 6th; decreased to 29.97 inches by 3 P.M., increased to 30.10 inches by midnight on the 7th, decreased to 30.05 inches by 3 P.M. on the 8th, increased to 30.08 inches by midnight on the same day, decreased to 29.98 inches by 3 P.M. on the 9th, and was 30.04 inches by the end of the week.

The mean reading of the barometer for the week was 30.11 inches, being 0.04 inch higher than last week, and 0.19 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 87°, on the 8th; the highest on the 4th was 73°. The mean of the seven high day temperatures was 79°.7.

The lowest temperature was 46°, on the 5th; on the 8th and 9th the lowest temperature was 61°. The mean of the seven low night temperatures was 54°.4.

The greatest range of temperature in one day was 31°, on the 5th; the smallest was 19°.5, on the 3d. The mean of the seven daily ranges was 25°.3.

The mean temperatures were—on the 3d, 62°; on the 4th, 60°.3; on the 5th, 61°.4; on the 6th, 65°; on the 7th, 68°.9; on the 8th, 72°.4; and on the 9th, 71°.1. Of these the first three were below by 0°.2, 1°.9, and 0°.7 respectively; the rest were above by 2°.9, 6°.9, 10°.4, and 9°, respectively.

The mean temperature of the week was 65°.9, being 1°.9 higher than last week, and 3°.8 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 148°, on the 7th. The mean of the seven daily readings was 138°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 37°, on the 5th. The mean of the seven readings was 43°.6.

Rain.—0.02 inch fell on the 9th.

ENGLAND: *Temperature.*—During the week ending August 9 the highest temperatures were 90°.4, at Cambridge, 87°.5 at Nottingham, 87° at Blackheath; the highest at Sunderland was 70°, at Hull 76°, at Plymouth 78°.3. The general mean was 82°.4.

The lowest temperatures were 42° at Truro, Cambridge, and Hull; the lowest at Brighton was 51°.8, at Sunderland 51°, at Liverpool 50°.5. The general mean was 46°.

The greatest ranges were 48°.4 at Cambridge, 43°.5 at Nottingham, 41° at Blackheath; the smallest ranges were 19° at Sunderland, 28°.5 at Brighton, 30°.3 at Plymouth. The general mean was 36°.4.

The mean of the seven high day temperatures was highest at Cambridge, 81°.9, at Blackheath 79°.7, at Nottingham 77°.9; and was lowest at Sunderland, 67°.5, at Bradford 71°.3, at Liverpool 71°.9. The general mean was 74°.2.

The mean of the seven low night temperatures was highest at Brighton, 57°.7, at Liverpool 57°, at Plymouth 56°.2; and was lowest at Cambridge, 49°.4, Wolverhampton 50°.2, at Hull 50°.9. The general mean was 53°.4.

The mean daily range was greatest at Cambridge, 32°.5, at Nottingham 26°.3, at Blackheath 25°.3; and was least at Sunderland, 13°.5, at Liverpool 14°.9, Preston 16°.7. The general mean was 20°.8.

The mean temperature was highest at Blackheath, 65°.9, at Brighton 64°.8, Cambridge 63°.9; and was lowest at Sunderland, 59°, at Wolverhampton 59°.8, at Hull 60°.1. The general mean was 62°.1.

Rain.—The largest falls were 0.19 inch at Sheffield, 0.11 inch at Hull, 0.09 inch at Truro; the smallest falls were 0.01 inch at Bristol, 0.02 inch at Blackheath and Sunderland. The general mean fall was 0.03 inch. No rain fell at Plymouth, Brighton, Wolverhampton, Nottingham, Liverpool, Bolton, Bradford, Leeds, or Preston.

SCOTLAND: *Temperature.*—During the week ending August 9 the highest temperature was 78°.3, at Paisley; at Aberdeen the highest was 70°.5. The general mean was 75°.2.

The lowest temperature in the week was 46°.3, at Dundee; at Paisley the lowest temperature was 51°.4. The general mean was 49°.1.

The mean temperature was highest at Paisley, 61°.9, and lowest at Edinburgh, 58°. The general mean was 59°.8.

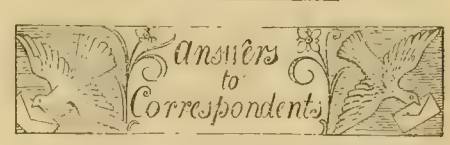
Rain.—The largest fall was 0.24 inch, at Paisley; and the smallest fall was 0.01 inch, at Leith. The general mean fall was 0.08 inch. No rain fell at Glasgow or Edinburgh.

JAMES GLAISHER, F.R.S.

Variorum.

DESTRUCTION OF BRITISH FLORA. — Under the above heading, Mr. R. Goodwin Mumbray, of Richmond, contributed a suggestive and useful letter to a recent issue of the *Pharmaceutical Journal*. We have pleasure in reproducing Mr. Mumbray's remarks, because they have considerable force in respect to the ignorant and wasteful destruction of British flora. He says:—"It is a matter of regret to all lovers of natural science when any part of the great and wondrous scheme of creation is interfered with. Those who admire flowers, whether they be botanists or not, must deplore the wanton destruction of their favourites. Beautiful and interesting specimens have been exterminated by ignorant cadgers or unscrupulous traders in our native flora. Many years since the Cypripedium (Lady's Slipper) was abundant in Bolton Woods, Yorkshire, until the spot was visited by an enterprising Cockney, who employed a number of rustics to grub up the plant at 2*d.* a root, to be transported from their delightful home to languish and perish on the arid window-sills of a wilderness of bricks and mortar. The same thing has occurred with the Asplenium, Adiantum Capillus-Veneris (Maidenhair Fern), and the beautiful little Hymenophyllum tunbridgense (Tunbridge Wells Fern). The Fern destroyers are out all the summer, and bring their spoils to Covent Garden, or hawk them about from door to door. They usually bring the hardier kinds, as Scolopendrium (Hart's-tongue), Lastrea Filix-mas, and F.-fœmina (male and female Ferns), and many others that adorn our hedge-banks and coppices. Such marauders should not be encouraged. They are generally a set of lawless vagrants, who if they go on in their reckless course will in the end not leave a single representative of the genera. Another source of complaint is the drainage and enclosure of common lands. Wimbledon is an example. Twenty years ago many species of bog and marsh plants were abundant; now you cannot find a single specimen of Menyanthes trifoliata (Bog-bean), or even a small patch of Sphagnum (Bog-moss). Drosera has long since disappeared, although I have seen the ground fretted over with it like a garment of rich brocade glistening in the early morning sun. Speculating builders, too, find 'eligible sites,' upon which they not unfrequently erect villas that are never occupied, and even never finished, as at Wallington and Surbiton; these levellers cut down sheltering trees and shrubs that protect and foster many delicate plants. I have found the Aquilegia (Columbine), and the Serapias ensifolia (Sword-leaved Helleborine) at Reigate, but on revisiting the place all was changed. A wealthy Cit. has bought a hill, erected a fence around it, with notices conspicuously stating than 'Man-traps and dog-spears are placed here.' This hill was a good hunting-ground for many choice species of Orchis and Ophrys. To make matters worse, the enlightened owner of the estate has turned down a lot of rabbits, which may be seen grubbing up and devouring every tuber they can find. Near Gomshall we found a small patch of bog, a perfect garden of delights, in which we spent many hours. It was thickly studded with Menyanthes (which in the esteem of Mr. Curtis 'may compete for beauty with the choicest exotics'), Lychnis, Orchis latifolia (Marsh Orchis), with a thick undergrowth of such plants as Anagallis tenella (Bog Pimpernel), Hypericum elodes (Marsh St. John's-wort), and many others too numerous to mention in this space. A subsequent visit revealed an unpleasing fact; the erection of sheds, steam sawing-machines, and other significant indications of industrial occupation. Next visit we may expect further encroachments; perhaps the disappearance of the bog, or a row of 'desirable residences' on the site. Is there no remedy for this unfortunate state of things? Government has of late years shown a laudable desire to preserve some of our suburban recreation grounds. The 'Ten Commandments' of Mr. Ayrton are still in force at Hampstead; would it not be possible to transfer to some suitable locality — say Keston Common — specimens of all our less common wild plants before they are utterly destroyed? Such a herbarium would be of permanent value, of a still more useful, if not of so ornamental and expensive a character, as the Royal Gardens at Kew."

SARRACENIA PURPUREA, L., grows exclusively in the districts in the centre and in the Northern United States, where it spreads among the sphagnum, and finds in the damp moss everything necessary for its existence. It especially thrives in America in slightly shaded spots—a condition which would correspond in our climate to exposure to the full glare of the sun, as in Pennsylvania and in the State of New York the temperature attains a degree unknown to us. The temperature frequently rises in summer to 35° R. (112° F.) In winter, on the contrary, the cold is intense, and it is not rare to see the temperature descend as low as 25° R. below zero (—25°.6 F.). The climatal conditions under which Sarracenia purpurea grow are thus completely different from those of the Southern districts inhabited by the above-mentioned species. It would be a great mistake, therefore, to submit them all to exactly the same treatment. Sarracenia purpurea might be cultivated without doubt in Germany in the open air on the proper soil. *Recd in "La Belgique Horticole,"* p. 307, 1883.



ABIES NOBILIS.—In answer to a recent inquiry, as to the probable cause of the injury to the cones of this plant, may I suggest that probably the hot, dry weather is answerable for it, by causing the apex of the cone to shrivel, and ultimately fall out. *W. P.* [The appearance of the cone does not bear out this view, as no sign of shrivelling is apparent. ED.]

ARAUCARIA: *G. D. T.* It is not very uncommon to see this in fruit.

AVERAGE CROPS: *B.* According to Mr. Moore's returns, 29 bushels of Wheat, 35 of Barley, 40 of Oats, 5 tons of Potatos, 27 bushels of Beans, 26 of Peas, and 1½ ton of hay per acre, may be assumed as a fair average throughout the country. Of course it may be largely exceeded in places, according to circumstances.

BOOK ON THE VINE: *Amateur B.* Barron on *The Vine* would suit your wants. To be had of Mr. A. F. Barron, Royal Horticultural Society's Garden, Chiswick.

CARNATIONS AND PICOTEES: *W. H. Hartland.* The flowers were such as are generally classed as "good border sorts;" very useful for flower-garden use,

abundant bloomers, and therefore very desirable. There are immense numbers similar to those sent.

CATTLEYA: *H. M. H.* A pretty pale C. Eldorado, approaching that known as C. Wallisii.

DAHLIAS: *E. L. Weston.* There is nothing unusual in the fusion of two flower-heads.

EUCALYPTUS: *R. V. F.* No species is mentioned in the *Pharmacopœia.* Probably E. globulus is meant, though any species would answer the purpose.

EUCHARIS AND EOUVARDIA: *Bouvardia.* Your Eucharis seem to be suffering from a temperature much too high for them, as it is apparently accompanied by insufficient ventilation. The leaves will look well for a time, but they are very deficient in firm texture. The Bouvardias have the now well-known Bouvardia disease, for which there is no remedy; but if you cut the plants down, the new growth will probably be quite healthy.

FLORISTS' FLOWERS: *C.* It is a matter of opinion and taste, but the opinion of those who are best informed and have the best artistic eye naturally should have greatest weight. One objection, and to our thinking a very strong one, is that the natural characters of the flower are perverted, its history and lineage obscured, the tale it has to tell garbled. Just as phonetic spelling, however convenient (?), destroys all the history and significance of words, so the rules of the florist, arbitrarily applied to all and any sorts of flowers, destroy their meaning. If symmetrical forms are wanted—and they are worthy of all admiration—let us have them where they are appropriate, but not elsewhere. But if you don't care for the "eternal verities" you are at perfect liberty to indulge your own fancies.

FRITILLARIA NIGRA: *C. W. D.* We should be happy to supply you with bulbs of Alopecurus bulbosus more cheaply than the dealer who supplied what appears to be this grass as Fritillaria nigra.

MICROBE: *L.* This is a new term, not to be found in botanical text-books, not even in the recently published edition of Henfrey's *Elementary Course.* It applies generally and vaguely to the whole brood of germs variously known as Schizomycetes, Bacteria, Vibrio, Bacillus, Micrococcus, Sarcina, &c. It is thus a useful word, if rather vague in its application. Air, earth, water, are full of these microbes, under ordinary circumstances, but it is only special forms under special conditions that are injurious. In a topmost room at the Health Exhibition may be seen a series of such microbes in process of "cultivation." There is the tubercle bacillus, the bacillus of splenic fever, of cholera, and we know not what beside. Fortunately, they are not allowed to escape!

NAMES OF FRUIT: *Apple. Apple:* Sugar-loaf Pippin. —*H. C. Fig:* Brown Turkey, or Lee's Perpetual.

NAMES OF PLANTS: *F. N.* 1, Brodiæa laxa; 2, B. peduncularis; 3, Davallia chærophylla. — *D. de Y.* Probably a variety of Dendrobium longicornu.—*W. W.* 1, Sequoia sempervirens (the Californian Red-wood). We are not aware that the bark is used for Pine-wool but it seems adapted for that purpose. 2, Acanthus spinosus; 3, Polygonum cuspidatum; 4, Bocconia cordata; 5, Epilobium sp., perhaps a white variety of E. angustifolium.—*Spes.* Gentiana asclepiadea.

OXALIS: *C. M. O.* The Oxalis figured in the last edition of Henfrey's *Elementary Course,* just published, is that of the species originally figured in these columns by the late Dr. Welwitsch, and in which the leaves are folded upwards in so-called sleep, instead of downwards, as in most other cases.

PEACHES SHRIVELLING AND FALLING OFF: *W. H.* Have you over-cropped your trees this year or last?—as by so doing you may be able to obtain seed, but it will be covered with leathery-like fruit, which soon shrivels, and is really uneatable, whilst a very few favourably placed fruits might attain fair proportions.

SMUT ON ROSES: The fungus on Roses is Capnodium Footii; it usually grows on evergreens, Laurel, Ivy, &c., but at other times on deciduous plants. It is a remarkable fungus, as it is very frequently accompanied by a lichen named Strigula Babingtonii. The lichen is never on the fungus, but the fungus covers the lichen; wherever the fungus comes in contact with the lichen it kills it. It is often called Fumago. *W. G. S.*

SOUTHAMPTON SHOW: ERRATUM.—In transcribing our notes of the above show, a report of which appeared in last week's issue, we inadvertently gave first place for two bunches of black Grapes to Mr. Molyneux, instead of to his neighbour, Mr. F. J. Cox, gr. to R. K. Wyndham, Esq., Corhampton House, Bishop's Waltham, who obtained that award with two well-finished bunches of Madresfield Court. And in the same way we omitted mentioning that Messrs. John Laing & Co., Forest Hill, London, put up, not for competition, two stands of grand tuberous Begonia blooms, which attracted much attention on account of their great size, fine form, substance, and colour.

THISTLES IN PASTURES, AND WHITE SCAB ON SILVER AND OTHER FIRS: *Sir D. Baird.* For the first frequent cutting, spudding, and high manuring. For the second the application of a petroleum emulsion (soapy water as a basis), with a fire-engine, stirring the mixture the while.

*** All communications intended for publication should be addressed to the "*Editor,*" and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE: — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

☞ FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

DICKSON, BROWN & TAIT, Manchester — Dutch and French Bulbs.
LITTLE & BALLANTYNE, Carlisle—Hyacinths, Roses, Clematis.
FOTHERINGHAM & WALLACE, Dumfries—Bulbs.
DICKSON & Co., Waterloo Place, Edinburgh — Flower Roots, &c.
R. G. NEALE, Wandsworth Common—Bulbs.
HAAGE & SCHMIDT, Erfurt—Roots and Bulbs.
L. SPÄTH, Berlin—Bulbs.
A. DICKSON & SONS, Belfast—Dutch Bulbs
DICKSON & ROBINSON, Manchester—Bulbs, Roots, &c.
HOGG & WOODS, Coldstream—Dutch Flower Roots.
J. DICKSON & SONS, Edinburgh—Dutch Flower Roots.
THOS. KENNEDY & Co., Dumfries — Dutch Flower Roots.

COMMUNICATIONS RECEIVED.—W. J. M. O. P.—H. E.—C. J.—D. de Yharrado.—C. M.—J. W. P., Hammerfest.—H. M. O.—H. W. W.—W. H.—G. D. F.—C. & C.—J. S.

Enquiries.

"He that questioneth much shall learn much."—BACON.

COLOUR FOR CEMENT BLOCKS.—Can any one inform the undersigned of the best colouring material to colour cement blocks to represent natural stone? Being for an outdoor rockery it would doubtless require some solution to render the colours weatherproof and binding. *Ten Years' Subscriber.*

DIED, on the 5th inst., MARY ANNE, aged fifty-two, the beloved wife of Edward W. BADGER, of Merton Lodge, Moseley, Birmingham.

Markets.

COVENT GARDEN, August 14.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

SOFT fruit is now over, prices being well maintained to the last. Plums and Apples have commenced in fair supply, and are making good values. Hothouse fruit is quiet. Large supplies of Grapes from Channel Islands. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Asters, per dozen	3 0	6 0
Begonias, per doz.	4 0	12 0
Bouvardia, dozen	9 0	18 0
Calceolarias, per doz.	4 0	9 0
Chrysanth, dozen	4 0	6 0
Cockscombs, doz.	2 6	4 0
Coleus, various, doz.	2 0	4 0
Cyperus, per dozen	4 0	12 0
Dracæna term. doz.	30 0	60 0
— viridis, per doz.	12 0	24 0
Erica, various, doz.	9 0	18 0
Euonymus, various, per dozen	9 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	2 0	10 0
Fuchsias, per doz.	4 0	12 0
Heliotrope, doz.	3 0	6 0
Hydrangea, per doz.	9 0	18 0
— paniculata, doz.	18 0	36 0
Lilium longiflorum, per dozen	24 0	36 0
— lancifolium, doz.	9 0	18 0
Marguerite Daisy, per dozen	8 0	12 0
Mignonette, per doz	3 0	6 0
Myrtles, per doz.	6 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums (show), per dozen	6 0	18 0
— scarlet, per doz	3 0	9 0
Petunias, per dozen	3 0	6 0
Rhodanthes, p. dozen	4 0	6 0
Solanums, dozen	9 0	15 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0
Arum Lilies, 12 blms.	3 0	6 0
Asters, 12 bunches	3 0	6 0
Bouvardias, per bun.	0 9	1 0
Calceolaria, 12 sprays	0 4	1 0
Carnations, 12 bun.	2 0	6 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 0	6 0
Eschscholtzia, 12 bun.	2 0	4 0
Eucharis, per doz.	3 0	6 0
Forget-me-not, 12 bunches	2 0	6 0
Gardenias, 12 blms.	3 0	6 0
Gladiolus, various, 12 bunches	6 0	12 0
Heliotropes, 12 sp.	0 6	1 0
Lapageria, white, 12 blooms	2 0	3 0
— red, 12 blooms	1 0	2 0
Lavender, 12 bun.	6 0	8 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 0	4 0
Pelargoniums, per 12 sprays	0 6	1 0
Pinks, various, 12 bunches	2 0	6 0
Primula, double, bun.	1 0	1 6
Pyrethurm, 12 bun.	2 0	6 0
Rhodanthes, 12 bun.	4 0	6 0
Roses (indoor), doz.	1 0	4 0
— (outdoor), 12 bun.	3 0	9 0
— coloured, doz.	2 0	6 0
Stephanotis, 12 spr.	2 0	4 0
Stocks, 12 bunches	3 0	6 0
Sweet Peas, 12 bun.	1 6	4 0
Sweet Sultan, 12 bun.	2 0	4 0
Tuberoses, per doz.	0 6	1 0
White Jasmine, bun.	0 6	1 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	2 0	4 0
Currants, black, per ½-sieve	3 9	4 0
— red, ½-sieve	3 6	4 0
Figs, per dozen	2 0	..
Grapes, per lb.	1 0	3 0
Lemons, per case	10 0	14 0
Melons, each	2 0	3 0
Pine-apples, Eng., lb.	3 6	4 6
Peaches, per doz.	2 0	10 0
Plums, ½-sieve	4 0	9 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0
Asparagus, English, per 100	3 0	5 0
Aubergines, each	0 4	..
Beans, French, lb.	0 4	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 0	1 6
Carrots, per bun.	0 6	..
Cauliflowers, English, dozen	3 0	4 0
Celery, per bundle	1 6	2 6
Cucumbers, each	0 6	1 0
Endive, French, per dozen	2 6	3 6
Garlic, per lb.	0 6	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	3 0	4 0
Lettuces, Cabbage, per dozen	1 6	..
— Cos, each	0 2	..
Marrows, each	0 2	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 0	2 0
Onions, per bunch	0 6	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 9	..
Peas, English, quart	1 6	..
Radishes, per doz.	1 6	..
Small salading, per punnet	0 4	..
Spinach, per strike	2 0	..
Tomatos, per lb.	1 0	..
Turnips, new, bun.	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £5 10*s.* to £7 per ton.

SEEDS.

LONDON: *Aug.* 13.—No new feature of interest or importance presented itself on the seed market to-day. Trifolium continues exceedingly cheap. Sowing Rape seed is steady, at the moderate rates now ruling. For white Mustard seed there is a fair inquiry at unchanged quotations. Of Rye the supply is meagre. New winter Tares are abundant, good, and cheap. More money is asked for Canary seed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday prices of new Wheats were lower than in the earlier sales, though the condition and quality were quite as good. Red Wheats sold at 36*s.* to 38*s.*, and white at 40*s.* to 42*s.* Foreign Wheats were almost unsaleable at 2*s.* decline on the fortnight. Flour was depressed, in sympathy with Wheat, and the top price of town reduced 3*s.*, making the present quotation 37*s.* per sack. The new Barley trade was dull. There was no quotable change in Beans; for Peas and Lentils prices were reduced 6*d.* to 1*s.*; and Oats, with large arrivals, were 6*d.* lower; Maize was quiet and unchanged in value.—On Wednesday business was quite at a standstill, and prices of Wheat and flour were merely nominal, but they were weak. No quotable change occurred in the prices of spring corn, but there was hardly sufficient doing to test quotations.—Average prices of corn for the week ending August 9:—Wheat, 37*s.* 6*d.*; Barley, 28*s.* 3*d.*; Oats 23*s.* 1*d.* For the corresponding period last year:—Wheat, 43*s.* 6*d.*; Barley, 27*s.* 9*d.*; Oats, 23*s.* 11*d.*

CATTLE.

At the Metropolitan Market on Monday the cattle supplies were not heavy. Trade opened slow, finishing quite 2*d.*, in some cases 4*d.*, under Monday se'nnight, except in a few isolated cases. Sheep and lambs were less numerous than on the previous Monday, but no advance was established, although the trade opened rather more cheerfully. Trade in calves was rather better than last reported. Quotations:—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 8*d.*; calves, 4*s.* 8*d.* to 5*s.* 8*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 6*s.* 2*d.*; lambs, 6*s.* to 7*s.* Thursday's trade was quiet in tone. Beasts were a shade firmer than on Monday, but sheep and lambs were dull and flat; calves also were flat.

HAY.

Tuesday's Whitechapel report states that supplies were short, and prices firm. Quotations:—Prime old Clover, 95*s.* to 117*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 117*s.*; best meadow hay, 80*s.* to 97*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 40*s.* per load.—The Cumberland Market report states that supplies were large and trade dull. Quotations:—Clover, prime old, 100*s.* to 110*s.*; second quality, 80*s.* to 96*s.*; inferior, 60*s.* to 70*s.*; hay, best old meadow, 80*s.* to 95*s.*; inferior, 60*s.* to 75*s.*; new, 65*s.* to 68*s.*; and straw, 30*s.* to 38*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies continue moderate, and prices steady to rather dearer. Quotations:—Kent kidneys, 6*s.* to 7*s.*; Essex ditto, 5*s.* to 6*s.*; Shaws, 4*s.* to 5*s.*; Hebrons, 5*s.* to 7*s.*; Early Roses, 4*s.* to 4*s.* 6*d.*; Regents, 5*s.* to 6*s.* per cwt. The imports into London last week consisted of 24 packages 48 casks from Boulogne, and 24 packages from St. Nazaire.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 16*s.* 6*d.*; Wear, 15*s.*; Binchester, 15*s.*; East Hartlepool, 16*s.* 3*d.*; South Hartlepool, 15*s.* 3*d.*; Tees, 17*s.*

Government Stock.—Consols closed on Monday and Tuesday at 100⅜ to 100½ for delivery, and 100 7/16 to 100 9/16 for the account. Wednesday's closing figures were 100⅜ to 100⅜ for delivery, and 100⅜ to 100¾ for the account. The final quotations of Thursday were 100⅜ to 100¾ for delivery, and 100 11/16 to 100 13/16 for the account.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1s. 3d. per sack; 10 for 12s., 15 for 17s., 30 for 30s.; all sacks included. Trucks (loose), 33s. Selected Brown Fibrous Peat, 5s. per sack; 5 for 22s. 6d. Black Fibrous Peat, 4s. 6d. per sack; 5 for 20s.; sacks 4d. each. Coarse Silver-Sand, 15 6d. per bushel, 25s. per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1s. per bushel. Chemical MANURES. Fresh Sphagnum, 6s. per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8d. per lb.; Specialité Paper, imported solely by us, 10d. per lb., 28 lb. 21s. Shading materials of all kinds. Write for Price LIST. — W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.

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Effectually clears all Insects and Parasites from the Roots or Foliage of Trees and Plants. Kills all Vegetable Grubs, Turnip Fly, &c. Cures Mildew and Blight. Clears Grapes from Mealy Bug, &c., and makes a good Winter Dressing. Of all Seedsmen and Chemists, 1/6, 2/6, 4/6 a bottle. Per gallon 12 6, or less in larger quantities. *A Treatise on "Fir Tree Oil," and its application, sent free on receipt of address, by the Manufacturer,* E. GRIFFITHS HUGHES, MANCHESTER. Wholesale from HOOPER & Co.; CORRY, SOPER, FOWLER and Co; C. E. OSMAN & Co., and from all the London Seed Merchants and Wholesale Patent Medicine Houses.



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Enables the operator to apply the Insecticide underneath the leaves, the superfluous liquid falling on the upper surface while descending

One to four teaspoonsful of the Fir Tree Oil to a pint of soft water will answer for all insects on plants. For further directions see label on bottle.

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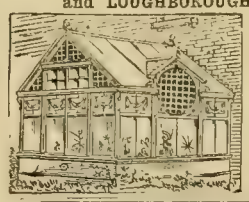
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14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

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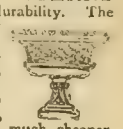
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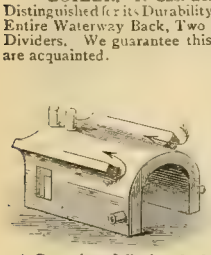
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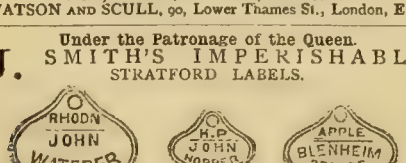
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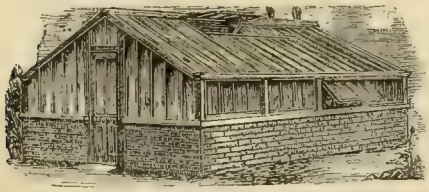
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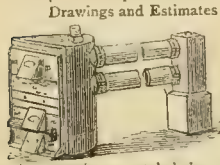
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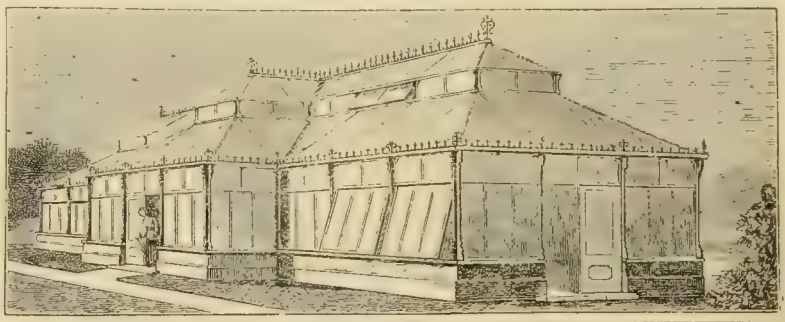


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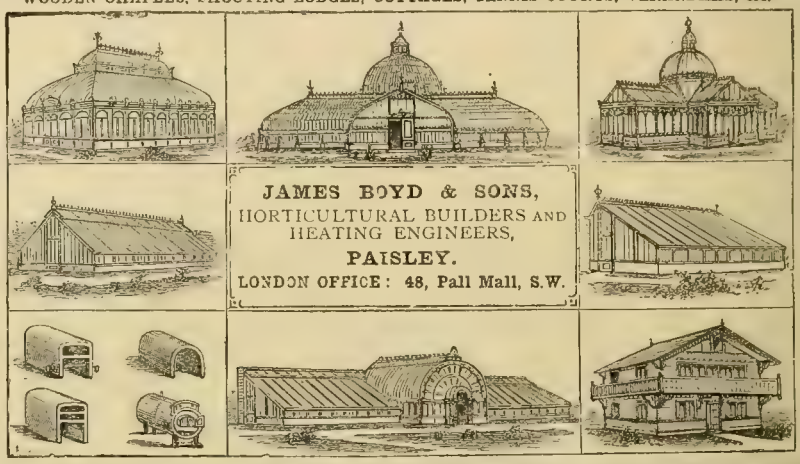


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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 16, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 556.—Vol. XXII. {New Series.} SATURDAY, AUGUST 23, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. Post-free, 5½d.

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THE GARDENERS' CHRONICLE,

Volume XXI., JANUARY to JUNE, 1884.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE!—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory.

GENERAL MEETING, for the Election of Fellows, at 3 P.M., in the Gallery of the Conservatory, on TUESDAY NEXT, August 26.

FRUIT and VEGETABLE SHOW, and Competition for Prizes offered by Messrs. James Carter & Co., and Messrs. J. C. Wheeler & Sons.

N.B.—Exhibitors' Entrance, West Side of Royal Albert Hall.

INTERNATIONAL INVENTIONS EXHIBITION, London, 1885.

Division I., *INVENTIONS.* Division II., *MUSIC.*

Patron—Her Majesty the Queen.

President—H.R.H. the Prince of Wales, K.G.

APPLICATIONS to EXHIBIT must be made on Printed Forms, which will be supplied on application to the SECRETARY, International Inventions Exhibition, South Kensington, S.W. These must be filled up and returned on or before OCTOBER 1, 1884.

To the Trade.

W. M. CROWE begs to offer the following BOUVARDIAS, as strong plants, in 60's, fit for shifting into 48's at once :—Jasminoides, Humb. corymbiflora, Alf. Neuner, Dazzler, Queen of Roses, &c., 22s. 6d. per 100, £10 per 1000; or my selection, in eight to ten sorts, 20s. per 100, £9 per 1000; President Garfield (new), double pink, 4s. per dozen, 28s. per 100. LIST of PALMS, FERNS, &c., on application. Boleyn Nursery, Upton, Essex.

M. LUDDEMANN'S ORCHIDS. — In consequence of the death of M. Lüddemann, the whole of his superb collection of Orchids, so widely known to Orchid Growers, will be SOLD in one lot on SEPTEMBER 11, 1884, at Bourg-la-Reine, near Paris, at 2 P.M.

For particulars apply to Mr. HORDÉ, Greffier, at Sceaux (Seine), France.

MESSRS. GREGORY AND EVANS beg to call the attention of the Trade to their first of Annual Sales of ERICAS, of all the leading varieties for winter and spring blooming; also large quantities of SOLANUM and CYTISSUS, which will be offered early in September, of which due notice will be given. Inspection invited.

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FRANK GRIFFITH, Kotagiri, Nilgiris, India.

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Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.

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T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

WISE AND RIDES, FRUIT and FLOWER SALESMEN, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.

BASKETS, BOXES, LABELS, and Directions for Packing forwarded upon application.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

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DANIELS BROS., Town Close Nurseries, Norwich.

WANTED, GERANIUM CUTTINGS—500 Henri Jacoby, 250 Mrs. Seavers, 250 Madame Vaucher. Lowest price for cash.

J. YOUNG, Southend-on-Sea.

VINES, PEACHES, NECTARINES, and APRICOTS in Pots. The leading kinds.

WILL. TAYLER, Osborn Nursery, Hampton, Middlesex.

CORRECTION.—In the Advertisements of CHRISTOF STEINPÖCK, Altlengbach, Lower Austria, which appeared in the *Gardeners' Chronicle* of July 5, 12, 19, 26, and August 2, by an *error in translation* the Prices were made much higher than they should have been. *For the Correct and much Lower Prices* Buyers are referred to his Advertisement in the current Number, see p. 229.

To the Trade and Others.

FOR SALE, about 700 or 800 Double White PRIMULA (the true old double white). Good strong Plants, in 3 and 4-inch pots. Price, &c., on application to

JOHN GREEN, Floral Nurseries, Thorpe, Norwich.

OUR TRADE LISTS, Nos. 68 and 69, just issued, contain all the North American Lilies, Rare Bulbs and Plants, Calochorti, Fritillarias, Heuchera micrantha, &c., Ferns and Cypripedia, to be delivered next autumn, to order, at unprecedentedly low prices; also Lilium auratum, Japanese Bulbs, Maples, Iris, Narcissi, to be delivered in same way. To ensure certain delivery, please order at once.

NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

AFRICAN TUBEROSES.—Our supply of Bulbs is now arriving, in fine quality.

HOOPER AND CO., Covent Garden London, W.C.

W. M. CROWE'S CATALOGUE for 1884 can be had Post-free on application, and should be in every Amateur's hands. It embraces an extensive List of best Novelties; also splendid Collections of Double and Single Zonal Geraniums; Bronze Bicolor, and Silver and Golden Tricolor Geraniums; Show, Fancy, and Regal Pelargoniums, Fuchsias, Carnations, Chrysanthemums, Palms, Ferns, Stove and Greenhouse Climbers, &c. Special attention is also given to Collections of Plants, which can now be supplied for immediate effect in 5-inch pots, both Flowering and Foliage, at 10s. 6d., 21s., 42s., and 63s.—W. M. CROWE, Boleyn Nursery, Upton, Essex.

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PRIMULAS.—PRIMULAS.—CINERARIAS.—Nice Plants, ready for potting, of the finest Covent Garden strains, 1s. 6d. per dozen, 10s. per 100. Twelfth year of distribution.

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FOR SALE, Two large ORANGE TREES, and Two large SHADDOCK TREES, in Slate Tubs. For price and particulars apply,

J. G., The Gardens, Bayfordbury, Hertford.

ROBERT AND GEORGE NEAL beg to inform Gentlemen, Builders, and all who may be intending to Plant Trees and Shrubs, &c., this autumn, that their stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS, is specially fine, and that the present time is the best to view and select the same, both as regards foliage and flower. A personal visit to the Nurseries earnestly solicited.

The Nurseries, Wandsworth Common, S.W.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

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OVE. BURVENICH-DE WINNE, The Rose and Palm Nursery, Gentbrugge, near Ghent, Belgium

FOR SALE CHEAP, 30 fine Fruiting PEACH TREES in Pots.—For names, price, and description, apply to

W. JACKSON, Blakedown, near Kidderminster.

SALES BY AUCTION.

Dutch Bulbs.—Monday and Thursday Next.
SPECIAL TRADE SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY and THURSDAY NEXT, at half-past 12 o'Clock precisely each day, extensive consignments of the finest varieties of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland; the lots will be specially composed to suit the Trade and other extensive buyers, and arrangements have been made for the supply of roots of the best quality.

On view morning of sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.—Flowering Orchids.
ALTERATION of DATE from Tuesday to FRIDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, 100 lots of ORCHIDS in Flower. Amongst them will be found fine specimens of Dendrochilum filiforme, splendid varieties of Odontoglossum Alexandræ, Cattleyas in variety, and others.

On view morning of Sale, and Catalogues had.

Friday Next.
LÆLIA HARPOPHYLLA
CATTLEYA WARNERI LABIATA.
CATTLEYA LODDIGESI HARRISONI.
CATTLEYA SCHILLERIANA REGNELI.
MASDEVALLIA RACEMOSA CROSSI.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 29, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., an immense quantity of choice imported ORCHIDS, chiefly from Brazil, comprising many hundreds of Cattleya Warneri labiata, C. Loddigesi Harrisoni, C. violacea varieties, C. Schilleriana Regneli, Cattleyas distinct looking, apparently hybrids, Lælia harpophylla, L. præstans marginata varieties, L. xanthina or grandis varieties, Oncidium phymatochilum, Masdevallia racemosa Crossi, Odontoglossum vexillarium rubellum, Aërides from the locality of Vanda Sanderiana, 2000 Eucharis from the Cauca, 600 Phædranassa chloracea, Dendrobiums, and other CHOICE ORCHIDS.

On view morning of Sale. Catalogues may be had of the Auctioneers, 67 and 68, Cheapside, E.C.

North Brazilian Orchids
Importation received direct in splendid condition. Unreserved Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68 Cheapside, E.C., on TUESDAY, September 2, a splendid importation of CATTLEYA ELDORADO, C. ELDORADO SPLENDENS, a fine lot, in the very best condition, having good plump and dormant eyes; also grand-leaved masses of CATTLEYA SUPERBA SPLENDENS and varieties; SCUTICARIA STEELI, GALEANDRA DEVONIANA, very fine bulbs, and other ORCHIDS.

An importation of CATTLEYA LOBATA, together with an assortment of ESTABLISHED ORCHIDS. A few varieties in flower.

On view morning of Sale, and Catalogues had.

Preliminary Notice.
The well-known Collection of ORCHIDS formed by Oscar Lamarche, of Liège.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Oscar Lamarche, Esq., to SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, E.C., EARLY IN OCTOBER, his entire COLLECTION of ORCHIDS, which enjoys a reputation probably unequalled on the Continent.

Great Horticultural Sale Week.
Important Notice to Nurserymen and Florists.
ANNUAL TRADE SALES of ERICAS and WINTER BLOOMING PLANTS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have arranged for the above SALES to take place as under:—

MONDAY, SEPT. 15.—GREAT SALE of DUTCH BULBS, at Protheroe & Morris' Auction Rooms.

TUESDAY, SEPT. 16.—ANNUAL SALE of ERICAS and WINTER BLOOMING PLANTS, at the Burnt Ash Nursery, Lee, S.E., by order of the Executors of the late Mr. B. Maller.

WEDNESDAY, SEPT. 17.—ANNUAL SALE of ERICAS and WINTER BLOOMING PLANTS, at the Lea Bridge Nurseries, Leyton, E., by order of Mr. John Fraser.

THURSDAY, SEPT. 18.—ANNUAL SALE of ERICAS and WINTER BLOOMING PLANTS, at the Brunswick Nursery, Tottenham, by order of Mr. John Maller.

THURSDAY, SEPT. 18.—GREAT SALE of DUTCH BULBS, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 19.—SALE of IMPORTED ORCHIDS, at Protheroe & Morris' Rooms, by order of Mr. F. Sander.

FRIDAY, SEPT. 19.—SALE of ERICAS and WINTER BLOOMING PLANTS, at the Sidcup Nursery, Sidcup, by order of Messrs. Gregory & Evans.

Messrs. PROTHEROE & MORRIS would call special attention to these Sales. They will comprise in the aggregate nearly 8000 lots, and have been arranged in this manner to enable country buyers to attend them all during the one visit to London.

Catalogues will be forwarded on application.
67 and 68, Cheapside, E.C.

Mondays, Wednesdays, and Saturdays.
BULBS—BULBS—BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6710.)
VALUABLE IMPORTATIONS of ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, August 28, at half-past 12 o'Clock precisely, valuable importations of ORCHIDS, amongst them Lælia purpurata, Zygopetalum Gautieri, Cypripedium Robeleni, a new Cypripedium in flower, Angræcum caudatum, Cattleya Harrisoni, C. speciosissima, C. intermedia, C. Ernestii, Warscewiczellas, Epidendrums, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6711.)
ORCHIDS from VENEZUELA.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 28, ORCHIDS, just received from Venezuela, including Cattleyas, Oncidium Papilio, Odontoglossums, Stanhopea Wardii.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6711.)
2000 AMARYLLIS, EUCHARIS, CRINUMS, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 28, 1400 Bulbs of AMARYLLIS EQUATRIX, 375 EUCHARIS AMAZONICA, 150 CRINUM LONGIFLORUM, and 100 KÆMPFERIA ROTUNDA, from Ghent.

On view morning of Sale, and Catalogues had.

Established Orchids.—Without Reserve.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, without reserve, the COLLECTION of ORCHIDS formed by the late Alexander Gillespie, Esq., of Weybridge; also a small Collection of STOVE and GREENHOUSE PLANTS.

Further particulars in future Advertisements.

Waltham Cross, N.

MR. J. TYDEMAN will SELL by AUCTION EARLY in SEPTEMBER (unless a suitable offer is previously made for the Whole Collection), at the Nurseries, Waltham Cross, a VALUABLE COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, the property of Mr. E. Tudgey, of the "Exotic" Nurseries, Waltham Cross (late of Worcester), and sold in consequence of his giving up Exhibiting, including well grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnecomas, Dracophyllums, Stephanotis, Allamandas, Clerodendrons, Franciscas, Rondeletias, Specimen Palms, Anthuriums, Crotons, &c. This well-known collection has taken first prizes at the London and Provincial Shows, viz.:—Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in the country. Also two Exhibition Plant VANS, in good repair.

Full particulars of Mr. J. TYDEMAN, Auctioneer and Valuer, Waltham Cross, N.

Date of Sale will be announced in future Advertisement.

Preliminary.

SALE of an IMPORTANT COLLECTION, comprising Several Thousand Choice and Rare ESTABLISHED ORCHIDS, in first-class condition; and a large number of IMPORTED PLANTS.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from the Executrix of the late Mr. George Toll, deceased, to SELL by AUCTION, on TUESDAY and WEDNESDAY, September 9 and 10, at their large rooms, 45, Princess Street, Manchester, a Finely Selected Lot of Good ORCHIDACEOUS PLANTS. Catalogues are in course of preparation.

For further particulars apply to Messrs. S. SIMPSON AND SON, Solicitors, 15, Southgate, King Street West; or to the Auctioneers, 45, Princess Street, both of Manchester.

Eccleston Nursery, Prescot.

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THE
Gardeners' Chronicle.
SATURDAY, AUGUST 23, 1884.

THE GRANGE, ALRESFORD.

YEARS ago I remember to have heard of the glories of The Grange—of the great house and its avenues of Limes, of its miles of woodland drives, and of its river running down the valley through the park and before the windows of the mansion. The Grange had belonged for a short time to Mr. Henry Drummond, whose tenant here for a little while was the Prince of Wales, afterwards George IV. ; but Mr. Drummond soon migrated to Albury Park in Surrey, and sold this nobler seat to the second Lord Ashburton, who was, like himself, a banker, and, more than that, a Baring. Even William Cobbett, writing in his *Rural Rides*, as he passed through this neighbourhood confessed his respect for the Barings, who owned then, as now, The Grange and Stratton Park, the seat at the present time of the Earl of Northbrook, the head of the Baring family, noticed in these columns, p. 197, 1883.

I suppose this district consisted of bare and barren chalk downs until the great proprietors covered them with timber, which forms now the glory of the country. As you find Hops on the banks of the Medway from its source to its outfall (marshes below Chatham excepted), so you find timber following the Itchen from its head-springs till it loses itself in Southampton Water. There are several branches of the Itchen, and they are all well timbered, including this Candover branch, which rises at Candover, 3 or 4 miles above The Grange. We may include, too, the stream of the Arle, which, at Mr. Shelley's place at Avington, Itchen Abbas, has been widened to form a sheet of water before the windows, just as the Candover branch has been, 3 miles off, to form a lake before The Grange. Give to a district wealth and water, and the permanent residence of great families, and you will always have the ornament of timber—as, indeed, you may sometimes without the water, though hardly perhaps in dry chalk districts, when they are unblessed by springs and streams. The Grange estate belonged to the Church, and having passed into the hands of some "robber" at the Reformation (the Duke of Bedford has been heard to use that term in pointing to one of his family pictures), it passed to the Henleys, for whom Inigo Jones built a house much praised by Horace Walpole, enlarged and altered by Robert Henley, the Lord Chancellor, who in 1764 took his title of Lord Northington from the parish in which The Grange is situated, and again enlarged by the present Lord Ashburton. To these successive owners this beautiful residence owes its fame and its characteristics.

In approaching the house, either from Alresford or Micheldever, you drive for miles through well kept woods, the road from the Micheldever Lodge being especially remarkable from its 2½ miles of trimmed Yew trees and the stately Lime avenue on that side of the house. If you enter the private domain, as you may not do of course without permission, at the Abbotstone

Lodge from Alresford, a coach and four will be in keeping with the character of the precincts, and you will roll along through Beech and Oak woods and all sorts of fine timber, skirting the open valley with its streams and meadows on the right. The Grange is famous for its Cedars of Lebanon, and some very large specimens of these trees will be the first sign of your drawing near the house. There are several very fine ones growing by the water side, at the point where the lake commences, where the woods end, and the road crosses a bit of open park close to the house. One of these within the wood must have some good soil under it, covering the chalk, for the trunk is remarkable for size and height, whereas most great Cedars on the chalk have short trunks and spreading heads. Another great Cedar stands in the open park, just outside the wood, and Mr. Vernon Heath, who has taken many photographs here, says that this particular tree makes one of his prettiest pictures.

Mr. Allan, the head gardener, kindly took me through the gardens and grounds, which are managed with great skill and taste. A lovely strip of garden runs alongside the water from the Cedars at the point I have mentioned, having soft turf and beautiful shrubs, the stream on the left, and a Yew tree fence on the right, then an arcade covered with Ivy and other creepers, and then a Yew fence again, or Yew and Box, both of which grow here to perfection. Hardened as most people have become to the most brilliant floral displays, it is impossible not to admire in this garden the exquisite carpet bedding, which is all the better for being confined to a few beds, whose gorgeous colours are softened by the wide margins of turf and the fences of evergreen.

Crossing the water by the waterfall, a little below the spot where two turbines are used in connection with the electric lighting of The Grange, you are now on the side where, a little higher up the stream, the house stands on its banks, on higher ground. The owners of The Grange must have loved trees. The noblest Silver Willow I have seen grows here by the water side, with Mistleto on it. It is a most interesting and charming spot we have reached —a perfect example of an English park ; a great house is full in our view, a large, terraced lawn, with a few flower-beds and clumps of shrubs ; a park, with lovely glades through the trees, and such smooth turf as only a chalk soil can produce. Wild ducks occasionally pass rapidly overhead and after circling about join the flock upon the lake, and wood pigeons, shy as they usually are, seem quite at home in these pleasure grounds, where those who would like to kill them dare not, and those who could do so will not. Among the unusual trees there is one which is called here the Fern-leaved Beech, and it is well named in accordance with the appearance of the foliage.

The Mistleto grows here very abundantly on many kinds of trees, such as the Acacia, Oak, Elm, Lime, Thorn, and others—the Lime avenue being ever green with this parasite in winter. In the conservatory at the house, which communicates with some of its rooms, there are several fine specimens of Luculia gratissima, with tree Ferns and other plants either rare or rarely well grown and ornamental. Here and there by the water side you come unexpectedly upon some nook or out-corner, where, fenced with shrubs and quite unlooked for, a charming little garden is discovered, set with shrubs and favourite flowers.

I must only briefly add that the kitchen garden consists of 4 acres within walls, and this space and the grounds are kept by seventeen gardeners. Among the well managed houses a stranger, ignorant of Orchids and rare flowers, would perhaps be most struck with the Peach-house when the fruit was ripe, the trees being on a curved trellis as well as on the back wall, and running up the pillars and upper part of the rafters. And next, one could not help pausing in a house 66 feet long by 16 feet wide, filled by a single tree of the Brown Turkey Fig, ripening a second crop early in August.

It seemed to me that the 100 yards of patent new swing coping made of iron and glass, on one of the walls, 3 feet wide, at £1 per yard, and capable of being opened in five minutes, forms a cheap greenhouse—for it is a greenhouse, and secures a crop which would not be so safe in spring, in this valley, as in some situations. *H. E.*

New Garden Plants.

GOVENIA ANDRIEUXII, *Rchb. f.*, in von Mohl and von Schlechtendal's *Botanische Zeitung*, 1852, pp. 835 and 937.

This has been confounded with Govenia capitata, Lindl. Its flowers are smaller, though surpassing those of Govenia liliacea. They are yellowish, white at the base. The cordate oblong acute lip is white, with purple round spots in front, yellow, with brown bars above. Column yellowish, with numerous small purple markings in front.

I have received an excellent specimen from Mr. W. Bull, who imported it from Mexico. It is a fine terrestrial Orchid. Its plaited, soft leaves having been overlooked by a modern writer, it was not taken over by him into the Malaxideæ, as should have been done. As to me, I need not say I regard it as one of the Vandeæ. *H. G. Rchb. f.*

GOVENIA DELICIOSA, *Rchb. f.*, in von Mohl and von Schlechtendal's *Botanische Zeitung*, 1852, p. 836.

This stands near the best known species, Govenia liliacea, Lindl. Its fine white flowers have much shorter lateral sepals, broad petals, full of small, purple, transverse bars inside. The lip is nearly elliptic apiculate, with dark brown spots in front, Column white, with brown spots in front. Anther with a strong abrupt apiculus, shorter than in Govenia liliacea. I saw it first on February 23, 1839, at Dresden. I have before me a flower and a sketch, with my remarks. Now it comes to hand from my unwearied correspondent, Mr. W. Bull. *H. G. Rchb. f.*

KNIPHOFIA LEICHTLINII VAR. DISTACHYA, *Baker.**

This is an Abyssinian form of Kniphofia, lately raised by Herr Leichtlin, closely allied to K. Leichtlinii, Baker, in *Bot. Mag.*, t. 6716, but quite worth distinguishing for garden purposes. The habit is more robust than in the type, the leaves broader, the peduncle longer, the perianth a little shorter, and the stamens more decidedly exserted. In the two latter characters it recedes from the tpye in the direction of K. comosa, Hochst., *Bot. Mag.*, t. 6569, and as this was grown in the same garden, Herr Leichtlin suggests that it may perhaps be a natural hybrid between the two species, but if so it produces seed more freely than either of its parents. The peduncle produces two, or even sometimes three, heads of flowers, the side ones coming forward after the main one has finished. Acaulescent; leaves bright green not at all glaucous, 2—3 feet long, reaching a breadth of 1½ inch at the base, tapering gradually to a long point, the two sides much folded together, the back acutely keeled, the edge quite smooth. Peduncles 3—4 to a cluster of leaves, about 3 feet long, bearing generally two racemes. Racemes very dense, oblong, about 3 inches long ; pedicels very short, deflexed ; bracts ovate-lanceolate, acuminate, two or three times as long as the pedicels. Perianth funnel-shaped, distinctly constricted above the base, about ⅝ inch long, varying in colour from lemon to fulvous-yellow. Stamens and style ¼—½ inch longer than the perianth. *J. G. Baker.*

* *Kniphofia Leichtlinii var. distachya*, Baker.—Acaulis, foliis 2—3 pedalibus viridibus ; pedunculo tripedali sæpissime distachyo, pedicellis brevissimis ; bracteis ovato-lanceolatis acuminatis pedicello 2—3-plo longioribus ; perianthio infundibulari 7—8 lin. longo fulvo-citrino segmentis brevibus obtusis ; genitalibus conspicue exsertis. *J. G. Baker.*

THE MARKET GARDENERS OF FRANCE.

IN no two men carrying on the same occupation in life can there exist a more marked difference than between the market gardener of England and him of France. With the habits, social and horticultural, of the one we are most of us conversant enough, but with the idiosyncracies and customs of the other—the Frenchman, to wit—we as a rule know little or nothing. A word or two anent him may, therefore, interest both the professional and the general reader.

In olden days, when in France every trade or calling was divided into what were termed *maîtrises*, or associations, gardeners had their special communities, those of Paris dating back so far as 1473, as some of their records still in existence show, and it is notable how religiously the rights and privileges which certain statutes granted them were renewed as each king came to the throne, or at any political crisis. Thus, in 1545, Francis I. proclaimed ratification of the gardeners' rights by sound of trumpet ; Henry III. confirmed them in 1576 ; and they were registered in Parliament successively in 1509, in 1646, in 1634, 1655, and at other times unnecessary to specify.

The market gardeners of those days, generally, and especially those of Paris, were ruled by four supervisers, or *jurats*, who visited their gardens periodically, as well to ascertain if they were in working order as to see that certain conditions in respect to the lads who were apprentices to the trade were being carried out. These novitiates were articled for four years ; then they served for two as "household companions," so to call them, and before they became master gardeners they were obliged to be furnished with a sort of certificate of fitness. In 1776, when all societies in France were suppressed, there were in Paris alone more than 1200 master gardeners, called *maraîchers*, *marayers*, and *jardiniers*, this last name being given to experts only.

The French gardeners of yore—it goes without saying—were badly housed, badly clothed, and badly fed ; they carried their loads of vegetables to market upon their own backs, and drew water from their wells by manual force only. Inasmuch as their land was by no means as profitable as at present, they fared miserably, working much, gaining little. Science aided them not at all ; they did not "force," they simply sowed seed, and waited patiently for its natural growth and maturity. It was the spurt given to horticulture in the royal gardens of their country in the reigns of the last Louises which stimulated them to bring artificial appliances to supplement natural ones, to use the bell-glass, the glass frame, and other means now in such every-day subserviency to their art.

The agricultural life of a French market gardener begins, one may fairly say, from babyhood. At eight or nine years of age his mental education—if, indeed, he has ever had any—is complete, his physical and professional one commences. His father, or his patron, assigns him a bed, or an out-of-the-way corner of the garden, which he may cultivate with just what he pleases, and appropriate the money proceeds of his crops to his own peculiar use and behoof. As he has been accustomed to hear economy vaunted and upheld, and to see it rigidly practised, so he applies the lesson to himself. No bon-bons, *galette* (cake), or toys, come within the range of his juvenile necessities ; he supersedes the *dulce* by the *utile*, and the few sous he makes from Radishes, Lettuces, Cabbages, or what not, he either puts into his money-box or spends upon actual wants. And thus it has come to pass that, as a class, the men we are dealing with are unquestionably the most hard-working, least frivolous, and most thrifty of all their countrymen.

The very first care a French market gardener saddles himself with socially is about the very last an English one thinks of—a wife. To the latter individual she may be a luxury ; to the former she is a positive *sine quâ non* of a necessity to his prosperity, for while he tills and produces, so she gathers and sells. But the bachelors don't wander for wives beyond the spinster sisterhood of their own calling ; they choose the daughters of one of their brother gardeners—very very rarely indeed beyond them—for, say they, these damsels are to the manner born, of the earth, earthy, and must be so to stand the incessant fatigues of its culture. After marriage these young men and women give themselves up entirely to their occupation ; their horizon does not extend beyond

that of their gardens; farewell to the world outside of it.

In the establishment of a French market gardener every one is up and about before daybreak. In summer the womenkind start at 2 o'clock, and in winter at 4 o'clock, to sell their vegetables at market. The sale is over by 7 or 8 o'clock, when they return home, and go straight into the garden to take their share of the daily routine of labour. This work, without being actually the severer kind, is nevertheless hard enough, compelling them to kneel down much, and necessitating exposure to wind and weather for hours and hours together. And while *maman la jardinière* is so occupied, do not suppose that mam'selle, the daughter of the house, is idle. No; there is that young lady on her knees, too, helping materfamilias in her various tasks.

So soon as the women have gone their ways to the Halles the men begin their toil. At 7 o'clock they eat a crust of bread with their loins girded, so to say; at 9 o'clock every one breakfasts; then, after a short rest in the middle of the day, they dine at 2 o'clock—all at the same table, master and mistress, men-servants and maid-servants, boys and girls, apprentices and labourers—there is no distinction; the meal is a general one, *commune omnibus*, after the fashion of the patriarchal ones of old. Dinner finished there is no lingering over dessert, work is resumed and continued without interruption until supper-time, which varies according to the season of the year. That refreshment closes the day, to be opened, passed, and terminated by a morrow in every respect precisely its counterpart. Truly one day telleth another:—

"Each morning sees some task begun,
Each evening sees it close;
Something attempted, something done,
Has earned a night's repose."

The marriage of a relative, the funeral of a friend, and the *fête* of the gardeners' patron saint, are the only circumstances under which the men and women ever allow themselves a holiday.

But, spite of a life so laborious, and which seems to leave time for neither relaxation of mind nor for rest of body, the French *maraîcher* works on to a very advanced age, and it is a fact that one never comes across an old man or woman of the class begging his or her bread. This state of things does not result because each and all have put aside something for a rainy day, or as a provision in the decline of life, but simply because they are so habituated to labour that they cannot, or believe that they cannot, live without it. Those seniles who have failed to save are housed among their children; those who have no families—and which, by the way, is a rare contingency of marriage amongst them—offer their services for a mere nominal wage to their better-to-do brethren, and these employers consider it a religious duty to shelter and to apply the decrepids in a manner suitable to the strength of their declining years. *H. L. C.*

ARBORICULTURE IN SCOTLAND.

Doubtless there will be many visitors to the Forestry Exhibition at Edinburgh, which has occupied so large a space in your columns of late, who will be interested in arboriculture and forestry generally, and will make this visit their summer holiday: a few notes of some of the most notable places where fine timber and well managed woods and forests may be seen, combined with the magnificent scenery for which Scotland is famed, may therefore be of some service.

The starting point being Edinburgh, the only notable place before reaching Stirling is Linlithgow Palace, to the right of the station. Reaching Stirling, the coign of vantage is the Castle, or burial ground adjoining; from here the view on a clear day is magnificent, looking north—"Keir," and its well wooded domain, so well known as the residence of the late Sir William Stirling Maxwell; a little to the right is the Bridge of Allan, celebrated as a sanatorium and the residence of the orchidologist, Dr. Paterson, backed up by the woods of Airthrey. To the east the Abbey Craig, with the Wallace monument, the ruins of Cambus Kenneth Abbey, the Forth wending its way to the sea, and in the distance the woods of Dunmore, celebrated in Scottish song; a little more to the south is Falkirk, the scene of many a fight, but now noted for its trysts (fairs). To the south is the field of Bannockburn, to the west Ben Lomond and The Cobbler tower up in the distance; and to the north-west is Menteith, where the King of Kippen once held sway. As far as the eye can reach was once covered by the immense Caledonian forest, and more lately immortalised by Sir Walter Scott, in the *Lady of the Lake*. About one mile from the Castle is the home of the veteran Auricula grower, Alexander Meiklejohn; a day can be well spent here and at the Bridge of Allan. Continuing the journey north we pass the partially ruined Cathedral of Dunblane: this is the junction for Oban. At Dunning station the rail passes through the estate of Duncrub (Lord Rollo's). Near Forteviot station, on the left, is Dupplin, the seat of the Earl of Kinnoull, and here we begin to enter into the region of the most notable of the woods and forests of Perthshire.

Immediately opposite to Dupplin is Inverary, celebrated for its woods and its fine trout stream, the "Maywater." At Forgandenny Station is Freeland, one of the old family estates of the Ruthven family, now owned by Collingwood Lindsay Wood, Esq., who is planting largely and takes great personal interest in arboriculture. From this station is a fine view of the Hill of Moncrieffe—the old Roman Camp, called Morventop, showing prominently. At Perth advantage should be taken to inspect the North and the South Inches, the two public parks of the city; on the South Inch are some avenues of very old trees. Crossing the bridge over the Tay, and winding gradually up the Hill of Kinnoull you have a panoramic view seldom equalled. Beneath is the silvery Tay, the old city of Perth, and its ancient church, St. John's, recalling the feudal times, and the North Inch the fight of the two clans before King James, in which the armourer Gower Smith played so conspicuous a part—for which read the *Fair Maid of Perth;* and as you ascend further you will see that the tops of all the eminences around the city are covered with trees planted by some master hand who possessed artistic skill—most probably one of the Earls of Kinnoull. A little higher up the hill you turn again, and looking across Strath Tay, you ask what woods are those in the distance—Dunkeld? The highest part is Birnam Wood, and to the right of the Tay, nearly due north, in the distance beyond Scone, is Dunsinnane, the scene of the "Bard of Avon's" tragedy. Entering the woods of the Hill of Kinnoull (at one time a shelter for Wallace—a small cave still retains his name), you reach a stone seat. From this point you look over the Carse of Gowrie, 600 feet below; immediately beneath is Kinfauns Castle, a modern erection; the old castle was at one time the property of Sir Thomas de Longueville, the friend of Wallace; to the right, on the banks of the Tay, are the ruins of Elcho Castle, from which the present Earl of Wemyss derives his title of Lord Elcho.

Scone Palace, where so many scenes in Scottish history were played out, is within 2 miles of Perth; there are some notable old trees here—one said to have been planted by the unfortunate Queen Mary. The park is heavily timbered, but the great feature in this princely estate to the forester will be the quantities of Abies Douglasii, planted by Mr. McCorquodale, the forester to the Earl of Mansfield, both at Scone and Lynedoch.

Dupplin is some 6 miles from Perth; to reach here a conveyance will be necessary (in Scotland all light conveyances are called machines), and if a party of three or four could take this tour together, it would be pleasanter, as well as more economical when hiring. The best way is to drive to the Glasgow Road entrance to the Castle, and between this entrance and the Castle will be seen some magnificent specimens of Silver Firs. There will be so much to be seen here that it would be better to write or see Mr. Browning, the Earl of Kinnoull's able gardener, who would do his best to make the visit agreeable and show all the most interesting parts, as the Earl, like many other Scotch noblemen and lairds, is highly pleased to allow visitors to inspect his domains. There is here a very handsome Araucaria imbricata growing in front of the conservatory in the kitchen garden. If time would allow, we should advise the tourist to continue the drive (crossing the Earn at Forteviot) to Inverary, where Mr. Mackie is director—a fine genial specimen of the craft; thence to Freeland, where Mr. Routledge, with Mr. Wood's permission, would, we feel sure, show some of the ancient trees for which it is celebrated; from here, keeping the Ochil Hills to the right, to the Bridge of Earn, passing by the Pitcaithlie Wells, highly valued in the neighbourhood for their medicinal properties.

At the Bridge of Earn is the entrance to Sir Robert Moncrieffe's domain; near it is a grand old specimen of Horse Chestnut. Mr. Bisset, who is land steward, &c., would be much pleased to show the interesting subjects near the mansion. Inquiry should be made at the "Moncrieffe Arms" hotel, and if Mr. B. should be from home the landlord could, no doubt, arrange for this fine old tree to be seen. Ascending the hill towards Perth at the top on the right hand you ascend gradually for nearly a mile, when you suddenly find yourself in an old Roman camp, from whence you obtain one of the most beautiful panoramic views in Perthshire. Immediately in front are the Ochil Hills, lightly timbered; to the left Fifeshire as far as Auckland Castle Woods can be seen; to the right Strathearn as far as Auchterarder, whilst all around is the well wooded Hill of Moncrieffe. A little farther to the east is Morventop, from whence you obtain a view of the Carse of Gowrie, nearly as far as Dundee. On leaving here, just as you begin to descend the hill towards Perth, is the little hamlet of Craigieburn, from about which spot, history relates, the Roman soldiers cried in ecstacies, "Behold the Tiber!" the silvery Tay flowing through the valley beneath recalling home scenes to them. A most interesting view of Perth is obtained from here, also of the stupendous rocks of Kinnoull Hill, with its Pine-covered top. This will make quite enough for one day's tour.

Again starting from Perth by rail to Crieff, you pass Methven Castle and Balgowan; at both places there is fine old timber as well as many of the newly introduced Conifers. At Abercairny, the residence of C. H. D. Moray, Esq., is a fine estate, and the proprietor pays great attention to the timber and fences on it, in addition to foresters keeping a regular staff of hedgers, who cut, plant, &c., all the hedges on the estate, resulting in its being one of the best kept properties in Scotland. At Crieff a vehicle should at once be obtained to drive to Drummond Castle, which is open daily to visitors.

This is one of the finest estates in Scotland. From the entrance to the Castle is an avenue of Oak trees but sufficient width of road, nor distance from tree to tree was given to make this effective: it looks cramped and narrow. Arriving at the Castle, the great treat here is the flower garden, figured in these columns, the design being considered the finest in Europe. If an inspection of the immense woods and forests should be wished it would be better to write to Henry Curr, Esq., Pitkellony House, Muthill, Perthshire, the factor to the estate, and ask permission, otherwise, if only a cursory view is wished, instruct the driver to take you to Comrie, by way of Strowan; ample evidence will then be afforded of the large tract of land covered with timber. On the road to Comrie you will pass Strowan, the residence of —— Graham, Esq. Above this, on an eminence, is the Melville Monument. A little further on you will reach the estate of Lawers, the residence of Colonel Williamson, on which some very fine Oak and Ash timber is to be seen on each side of the road; also an avenue reaching to the river Earn. In front of the house the hillsides are thickly covered with timber. Comrie is only noted for its earthquakes and a pool, called the Devil's Cauldron. Returning from here, on the road to Crieff is Ochtertyre, the residence of Sir Patrick Keith Murray, Bart. Entering the domain at the Comrie end, as you drive through some fine old timber will be seen. Altogether this is a delightful and beautiful residence. If a little time can be spent, acquaintance should be made with Mr. Croucher, who will, in his quiet affable manner, endeavour to point out the most interesting subjects. If time permits a visit should be made to Cultoquhey, about 3 miles from Crieff, the residence of —— Graham, Esq., where, amongst other noble trees, are some very handsome specimens of Pinus Cembra. Crieff is specially famed for its immense hydropathic establishment. By the time Perth is reached a long and interesting day will have been spent.

(*To be continued.*)

Kentiopsis macrophylla.—In the *Revue Horticole*, p. 372, we find a coloured plate of this elegant Palm. It is a native of New Caledonia, with pinnate leaves, the pinnæ being oblong-lanceolate. The colour of the young leaves is a rich brownish-red, and the habit of the plant such as to make it highly ornamental for the conservatory.

FORESTRY EXHIBITION.

(*Continued from p.* 200.)

JAPAN.—Owing to the varied character of its climate Japan possesses a singularly rich flora, as will readily be seen in the numerous and somewhat interesting nature of its exhibits. In the north flourish vast forests of Oak and Pine; in the south the Cycas, Tree Ferns, the Banana, the Bamboo, Bignonia, and Myrtle, delight the eye with their grace of form and wealth of colour. The landscapes are also richly diversified by clusters of Hydrangeas, Camellias, and Azaleas, which here attain a luxuriance and beauty almost unknown in Europe. Amongst the trees which clothe the mountains are the Chestnut, Maple, Beech, Elm, Lime, Elder, and Cypress. Japan also possesses amongst its varied collection of ornamental Conifers several of great value as timber trees, and which have been critically studied and figured in recent volumes of the *Gardeners' Chronicle*. Amongst these may be specially noted Retinospora obtusa, a splendid slab of which is exhibited, which clearly shows the great size this tree attains in its native country, the wood of which might, at a casual glance, be readily mistaken for that of the Californian Redwood, than which, however, it is of superior quality, being extensively used in ship building, for the erection of houses, and for turnery. Other varieties of the same wood are also shown, but these seem of inferior quality and destitute of the rich colour so characteristic of the normal form.

The Japan Cedar (Cryptomeria japonica)—a tree much prized in this country for its ornamental appearance and general suitability for our climate—must, from the sections of wood here shown, attain a goodly size in its native country. This tree attains to a height of 130 feet and is much used in Japan for bordering the high road. Various slabs of the more ornamental timbers are also on view, such as the Bird Cherry, Maple, Juniper, Yew, and Camphor-wood, the latter remarkable not only for its fragrant perfume but for its beautiful graining as well. Of what we have styled ornamental woods there is exhibited an exceedingly neat trophy, showing in combination nearly 100 specimens of such as are valuable either for quality, beauty of graining, or colour. Amongst the various forms of Oak found in Japan, several of which are evergreen, none are of any particular value as regards quality of timber, though for ordinary purposes they are much in request. From the bark of one species of Oak cork is obtained, while others are valuable for their edible fruit or for the dyes obtained. The Camphor tree (Laurus camphora), found in most of the forests, occasionally attains to huge dimensions. One, visited by Kæmpfer, in the island of Kiusiu, is supposed to be upwards of 1000 years old. The Lacquer or Varnish tree (Rhus verniflua) furnishes the gum with which the Japanese heighten the brilliancy of their *papier maché* articles. The Wax tree (Rhus succedanea) yields seeds from which wax for candles is obtained by compression. It thrives best on barren and stony ground, ripens in its eighteenth year, and afterwards declines.

Another valuable tree is the paper Mulberry (Broussonetia papyrifera), whose bark supplies the paper of which the Japanese make such extensive use. Several specimens of clothing made from one of the climbing plants are also exhibited, as well as Willow basket-work, woods for engraving purposes, and a miscellaneous collection of useful articles ingeniously made by the natives from Bamboo splints. An interesting collection of butterflies, dragon-flies and beetles is to be seen, as also specimens of the ordinary silkworm, the culture and rearing of which is an extensive Japanese industry. Specimens of silk procured from the different varieties of the worm—some of which are fed on the Mulberry leaves, and others on those of the Oak—are also exhibited. To those interested in the manufacture of charcoal an examination of the models of kilns will be highly instructive. One of these is made of stone, in which Oak and the better classes of wood are carbonised, and the other, which nearly approaches our own method of kiln-burning, is used chiefly for the rougher woods. The former method, from the quantity of charcoal produced—300 lb. from about 1000 lb. of wood—is well worthy of imitation by those who have the supplying of this commodity for estate purposes. An interesting collection of about 100 dried specimens of the leaves of different varieties of Maples is conspicuously arranged in frames made of different woods, and give to the observer a fair idea of the numbers of this interesting family now under cultivation in Japan.

A tree-transplanting machine of good design, various wood-working tools, wooden water-pipes ingeniously constructed, and a timber-pond, are all exhibits of a practical nature. These ponds exist in large numbers in Japan, and are in construction somewhat similar to those used on the Continent. In our own country the art of preserving timber by subjecting the logs to the influence of salt water has long been known, and is, in many sea-side districts, extensively practised even at the present time. There are likewise exhibited models of rustic arbours and fences, a collection of cones and seeds, specimens of dwarfing and grafting, in which the Japanese are very accomplished, and many other objects of interest which space will not allow our dwelling on at present.

WOOD-WORKING MACHINERY, AND OTHER MINOR EXHIBITS.—The largest exhibit in this class is that of Messrs. John McDowell & Sons, Johnstone, near Glasgow. In this extensive collection the most approved wood-cutting and preparing machinery are to be seen in motion, from a monster steam frame for sawing logs up to 30 inches square, to the band or ribbon-saw which is used for cutting out the most delicate fretwork articles. The latter, which we saw at work, is certainly a most useful machine, and will occasion a great saving of labour over the older inventions. Other exhibits in this way are sent by Robertson & Sons, Rochdale; Carrick & Ritchie, Edinburgh; and Sagar & Co., Halifax; all of which firms are well represented in the various forms of wood-working machinery, the transit and erection of which must have occasioned no little trouble and expense. Messrs. Hornsby & Sons, Grantham, exhibit their famous hedge-cutter, an excellent machine where the ground is tolerably level. A portable railway, with trollies and waggons, for use in forest work, is shown by Glehn & Sons, London. This is an excellent idea, well worthy of extension, and one that we have seen most profitably employed in the forest department of an estate in the North of Ireland. Mr. N. Ahlbotter shows an excellent composition for protecting young trees against the ravages of vermin, and one we believe to be well worthy of a fair trial by such of our foresters as are troubled with these pests. The composition has this much in its favour, that it is non-poisonous in nature, non-injurious to even the most tender tree, easily applied, and is regarded with special aversion by both hares and rabbits.

WIRE FENCING.—Various specimens of wire fencing, all on the most improved principle, rustic arbour work, entrance and wicket gates, as well as various useful straining pillars for wire fencing, are exhibited by Ben. Reid & Co., Aberdeen, Smith & Son, Inverness; Gibson & Son, Edinburgh; P. & R. Fleming and A. & J. Main, both of Glasgow; and W. Bain, Lochrin, Edinburgh.

WOOD CARVING, &c.—As regards carved work, certainly by far the most elaborate are three pieces of furniture exhibited by W. Adams, Queensferry Street, Edinburgh. These, which show artistic qualities of the highest order, are in dark Oak, and represent (1) a large doorway supported by elegant figures representing "War," the panels being richly carved with illustrations from Shakespeare; (2) a massive Oak settle of exquisite workmanship, depicting the demanding of Magna Charta from King John; and (3) a mantelpiece illustrating various battle subjects.

To those interested in Irish bog Oak, a visit to the stand of J. Jacques will be well repaid by a sight of the various exquisite articles manufactured from this famous wood.

Of firearms, Messrs. Henry and D. & J. Fraser, Edinburgh, have sent a very varied contribution, the former exhibiting in an ebony and gold case a variety of weapons used for sporting purposes, conspicuous amongst which is a neat and elegantly inlaid Express rifle of miniature design. Messrs. Fraser's exhibits are of a similar nature, and include a number of well-finished rifles, as well as samples of Walnut wood, from which the finest gun and rifle stocks are made.

A dining-room suite in the Stuart style, made from wood grown in the old Caledonian forest in Dalkeith Park, is both interesting and beautiful. The same exhibitor, W. S. Brown, Howe Street, Edinburgh, has also on view a neat and elegant bedroom suite made from the Californian Redwood, the adaptability of this wood for the use of the cabinet-maker being very apparent in the various articles of which the suite is composed.

The Woolwich Arsenal exhibits, which are neatly arranged on the right side near the entrance, are of a very interesting nature, and illustrate in a practical manner the kinds of wood used in the army department, as well as the various uses to which they are applied. Conspicuous in this collection are several examples of lances, from those fully equipped down to such as are in an unfinished state; also samples of the ingenious processes through which the stocks for the Martini-Henry and Snider rifles pass previous to being ready for attaching to the barrel.

Specimens of the charcoal used in the manufacture of gunpowder (made from Dogwood, Willow, and Alder) are shown in cases on the table alongside the latter exhibit. Arranged in frames are well polished and distinctly named sections of the woods used in this department—forty-seven in number—with details of the various uses to which they are applied in army equipment.

CEANOTHUS VELUTINUS.

ALTHOUGH lacking the rich colour of some other species and varieties, this proves a "very handsome evergreen shrub," its dark glossy leaves, covered with white felted down on the under-surface, and the profusion of whitish flowers rendering it very attractive. Our sketch (fig. 45) was taken from a specimen kindly sent us by Mr. Gumbleton, with whom, in the South of Ireland, it proves hardy against a wall, and indeed in most winters it would be hardy throughout the country, particularly if slightly protected. Its beauty is such as fully to repay any little attention of this kind. It is a native of Oregon, and was originally introduced by Douglas, and afterwards by Lobb, but has become scarce in cultivation. It was figured in Hooker's *Flora Boreali-Americana*, p. 125, t. 45, and in the *Botanical Magazine*, 1860, t. 5165.

DOT PLANTS.

WE all admire the plan of placing plants in the flower beds, which shall break up the too great uniformity of surface; it is a good one, and seems to give liveliness to the garden scene, that contrasts very advantageously with that which we were accustomed to see ten years back. Then, all was flat and monotonous, and colour effect was the only object sought for, the wonder being now, that this rage for big masses of high colour, in which the eye found no resting-place, and which had no meaning, did not die out sooner. However, with the greater variety of plants employed at the present time, their less confined distribution, and the free use of those elegant plants, the subtropicals, we have now obtained a species of garden arrangement which deserves to be tenderly dealt with by the tyrant, Fashion. It may be said, that to the increase of the variety we have also added the charm of greater cheapness in garden decoration; at least, where cost is a consideration, a way is shown by which it can be carried out with hardy plants, bulbs, tubers, and annuals and biennials. Of course, the most admired gardens and finished parterres cannot be contrived from such materials; and those who, ignoring the unsurmountable difficulties that beset their efforts, and hope to create the fine and more lasting effects which nobler plants only can achieve, must meet with disappointment.

Those who possess a garden near the house are quite right in wishing to see that garden as enjoyable for as long a period as our climate will allow, so that the gardener is under compulsion to use the long-flowering old favourites in considerable numbers, if he will not be perpetually changing the contents of his beds or borders. It matters not if it is spring, summer, or autumn gardening, the recognised favourites must be used, if comparatively lasting effects are desired. Spring is our most fleeting season, and that is also the time in which the best use can be made of hardy annuals, early flowering perennials, and bulbs, as these, under the cooler skies of that portion of the year last much longer in fine condition than they would do later on, even if we could have them then. Such annuals as Clarkias, Collinsias, Eucharidiums, Clintonias, Myosotis, so treated, and Wallflowers, Saponaria ocymoides, Silenes, Pansies are really good annuals, or plants annually treated so as to class with them, and are some of the best things to use for the broader effects, or, as we may say, the

ground colours of spring arrangements. And then, when the flush of bloom is gone, we can pull these plants up and throw the really annual ones away without a regret—in fact, with positive gain, for we have not got to care for them a moment longer. The advance of summer, when the plants for that season ought to be all in the ground by the beginning of June, makes this change imperative.

One of the newer adoptions is that of employing isolated, or solitary plants in beds and borders, and concerning which we may express the opinion that gardeners are, in the matter of variety in these plants, just a little too exclusive. Nearly all the plants used are flowerless ones, and depend for their effect upon their foliage; but however fine small Palms, Yuccas, miniature Conifers, Ficus elastica, F. Parcelli, Dracænas, Aralias, Myrtles, Osmanthus illicifolius, Japanese Maples, &c., may be, we should like to see some of these sentinels chosen from amongst the more conspicuously flowering section of plants.

What do we know of the capabilities of pyramidal, columnar, or the much maligned standard or half-standard forms of Lantanas, zonal Pelargoniums, P. Rollisson's Unique, or the newer Ivy-leaved sorts —Abutilons, Fuchsia corymbosa, F. corallina, F. serratifolia, F. Dominiana, and other kinds—Heliotropes, Calceolarias, Plumbago capensis, double-flowered Pelargonium, Clematises, Abutilons? These, one and all, are wonderfully decorative when grown in the way stated above, and are then most abundant bloomers. Some little time and trouble are required to raise the plants to the wished-for height, but when this is once performed the plants can be kept for many years if lifted in the autumn before sharp frosts set in. It may be noted that the quickest growing stocks or stems are to be had from seedlings, on which, when they are strong enough, the nobler variety can be grafted or inarched. The majority of the plants named could be raised within two years, and the perfect plants, being the direct result of careful culture and assiduity, would become the more valued as a personal possession. *M.*



Fig. 45.—Ceanothus velutinus: hardy shrub, glossy foliage, whitish flowers. (see p. 232.)

A YORKSHIRE GARDEN.

A visit to Yorkshire found me this summer in close proximity to the old town of Beverley, and there I made the acquaintance of an enthusiastic lover of plants with whom I had often corresponded. I found Dr. Appleton doing as much as could possibly be done in the way of cultivation of plants with very much against him. His little garden was full from one end to the other, and his greenhouses showed signs of the elaborate care which he had bestowed upon them. Moreover I got from him two or three very valuable wrinkles, and I shall act upon one of them as soon as the occasion requires. I refer to a simple but very effectual plan for holding a sheet of glass safely over the head of a small plant when the wind is high. In winter-time and during any hard rains it is a very great safeguard for an alpine plant to have a piece of glass put over its head so as to throw off the water; it is a very common device, but open to one great objection—the glass will often not remain properly in its place, and a gust of wind may at any time carry it away or shiver it to pieces. A few stones may sometimes prevent all this, but there is no certainty about it. Dr. Appleton has so manipulated with some stout pieces of wire that they nip a piece of glass on two sides, and they do it so effectually that they hold it quite firmly in its place, however fiercely the tempest may rage. I attach the greatest importance to this simple device, for it gives me a prospect of many an alpine saved which would otherwise have been lost. I have had so much trouble about keeping pieces of glass in their right places that I had almost ceased to put trust in them.

He largely uses some coarse slag for his alpines, and by mixing this with leaf-mould he says he meets their requirements. He is greatly a believer in the mechanical rather than the chemical properties of any soil he may use for them. I noticed in his garden a variety of Campanula turbinata, which seemed to me to be larger and brighter than what I had seen elsewhere. He called it Campanula turbinata Schottii, and it was very pretty indeed. Sedum spathulifolium, Iberis jucunda, Saxifraga paradoxa, Sempervivum arachnoideum, Erythræa diffusa, Saxifraga rosularis, &c., were all doing well. I expect I shall find Dr. Appleton, if I visit Yorkshire again, with a much larger affair on his hands, and with a fine collection of plants. Not far from Beverley there is a garden over which tears might be shed. If any of your readers want to know how quickly all traces of his devotion to his favorites can be lost—how utterly in a brief space of time things can run down—he may find it all here. It is a very sad story for any lover of flowers. A former rector of the parish to which I refer lived to be ninety years old, and his son, who succeeded him, and who was also a clergyman, numbered eighty before he died, and for a very large part of this long term of years they kept on collecting plants. It was all done in a very knowing and quiet way, and long before the *renaissance* with regard to the cultivation of herbaceous and alpine plants had set in these two were at work. Some florists' flowers also were greatly in favour, and the Pansy bed was always a sight to see in the merry month of May. But a sad change came over the prospect from a gardening point of view. The rector who followed the last of the two I have named above was not absolutely inimical to flowers so far as I have heard anything about him. He neither hated nor loved them, and he simply let everything go its own way. But he did not reign long, and then an iron age began. Somehow a foxhunter got hold of a lease of the house and the grounds to which I refer (they were at that time not attached to the rectory, though now they belong to it), and he lost no time in inaugurating a new condition of things. He told a neighbouring nurseryman that he cared nothing at all for his garden and that he might do what he liked with it, if he would keep him supplied with Potatos and Peas. It need hardly be stated what was the upshot of this. Long rows of Dahlias disappeared for ever. Pansy beds were run off into grass. Anemones, Leucojums, Lilies, Fritillarias, and a thousand other things were never heard of again, and instead of the *miscuit utile dulci*, which is bad enough in all conscience in some cases, a regard for what is useful drove out everything else, and there was little beauty left. But the worst was to come yet. A decided antipathy to all plants and bulbs followed on this. "Take all of them, if you like," was said to me; "the whole garden reeks with bulbs. I throw away the nasty

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things as fast as I can:" and I had full permission given to me to carry off the relics of a glorious past, as much as I liked. I am sorry to say I found but little to take; the ploughshare of destruction had done its work too well. The fruits of most earnest labour, which had been spread over a hundred years, were dissipated in ten, and no one who was not cognisant of what had gone before could ever have dreamt how an Eden had thus been despoiled.

I accepted the permission which had been given me, and which was, in truth, most kindly meant, and a spade which had known better days was used here and there in the hope that some great treasure might be disinterred. Alas! the hope was well-nigh in vain. Here and there were the remains of a Crown Imperial which had blossomed in the spring, a Veratrum looked out timidly from among the shrubs as though it feared to be seen, a dry leaf or two of Anemone ranunculoides told of the veritable Cloth of Gold which I had seen there in former days, an old Kerria japonica stood upright amidst the ruins, but there was little else to be seen. As though in dismal satire now, and in plain contradiction to everything with which it was surrounded, a little old board but yesterday hung on the panels of a summer-house fast falling into decay, and on it were still the words in which Horace expressed a wish which many since his time have had:—"Hoc erat in votis: modus agri non itu magnus, Hortus ubi," &c., and it seemed as though it were preaching to the winds, so little was the notice that was ever taken of it. The only thing that is quite unchanged, though sadly out of harmony with all its present surroundings, is a little babbling brook, one of the sweetest which I have ever seen in the land, and from which Tennyson might have derived an inspiration for his favourite song. The shadows were playing on it as of old, and the trout were darting hither and thither beneath the bridge, but the flowers which used to edge its banks were all gone, and a crescent-shaped border close by, which in other days never failed to respond to the earliest touch of spring, had become like some barren waste—there was not a single thing in it. The only person I have ever seen with any gardening propensities who scented out this oasis in the desert was the late J. C. Niven of Hull, and he told me he was fairly astonished by what he saw. He found rare plants growing there by the yard, and he came upon a breadth of Sanguinaria canadensis which could not fail to electrify him.

Very much might be added to all this, but it would take up too much of your space. I would just note how in another Yorkshire garden I came across a phenomenon which greatly surprised me. Almost in the gravel walk and almost under a large flagstone I espied the little wiry shoots of Tropæolum speciosum struggling upwards towards the light; it was not a place where plants were much thought about, and it appeared that a lady had met with this beautiful creeper in Scotland and had brought it home with her. All she did with it was to clap it down against the side of the house and to leave it entirely to its fate. But Fortune was better to it than might have been expected, and Tropæolum speciosum determined to live. I spent a quarter of an hour in just edging off the flagstone and in improving the soil, without any handling of the roots, and am certain that there will be a great blaze of colour here which will astonish the natives. But the inference that I drew from it was this: the reason why Tropæolum speciosum is reputedly more of a Northern than of a Southern plant is because it must be cool at the roots. Perhaps a great flagstone put in closer proximity to it than might have been deemed well would coax it into acquiescence with its lot, and the glory of Scotland might luxuriate either in Devonshire or in the Isle of Wight. *A Wanderer.*

(*To be continued.*)

STARLINGS.

If many of your readers are labouring under the same impressions as myself respecting these valuable birds, of which Mr. Andersen gave so interesting an account at p. 203 of the *Gardeners' Chronicle*, it may not be out of place to insert the following observations. Before condemning these birds, I must confess I quite agree with the writer of the article in question, that they pay a good rent for the nest-boxes which are now so commonly provided for them, but it is paid to the farmer, and not to the gardener, as the following facts will prove:—

The starling gets well paid for his labour if he is found in a house rent-free during the incubation and rearing of the young, and can find a good bed of ripe Strawberries or Raspberries, and then very few insects will be eaten by them. I must admit it was a surprise to me to find that starlings would eat fruit.

A short time since, when Strawberries were in full bearing, a friend of mine remarked to me that he had been shooting starlings that morning. My friend being a gardener, I naturally inquired his reason for shooting these valuable birds, for I had thought that no gardener or farmer would kill starlings, so useful were they to them. The answer I got was quite as astonishing as his former remarks—"They are eating my Strawberries by the peck; and I do not know of a more mischievous bird than the starling."

Since getting this novel item of news respecting the bird I have been very closely watching their movements in and about the gardens here, where I consider they have had a very fair trial, as I had a Cauliflower bed and Gooseberry trees which were attacked by caterpillars, and which grew in close proximity to a large bed of Strawberries. I soon found my supposed good friends paid frequent visits to the latter in the early morning hours, and to my surprise I found that for every caterpillar they devoured they took a goodly number of Strawberries in return for their kindness. *Alfred Bishop.*

[Since the toll they take almost counterbalances any good they may do, you must put nets over your fruit, but do not slaughter your friends in the way your gardening friend did; and remember fruit is not always in season out-of-doors, so that starlings must perforce eat insects or other noxious things at such seasons. Ed.].

MR. B. S. WILLIAMS' NURSERY, HOLLOWAY.

Notwithstanding the alleged paucity of bloom to be seen in Orchid-houses at the present season, Mr. Williams always contrives to give the visitor some interesting sights in his houses. It would not be consistent with the literal truth to assert there is a "wealth of bloom," but some nice things can be remarked in several genera. Cœlogynes can even now find a representative in C. Massangeana, a plant carrying two long spikes of yellow flowers, that have dark brown markings—these are striking and also pretty. Cypripediums were not abundant, but we noticed that fine species, C. superbiens (Veitchii); it had been long in bloom, and was still bearing six of its handsomely marked flowers. The foliage of this plant is as handsome almost as the flowers, so distinct being the white and green mottlings on these. Flowers could be found on two fine Cypripediums, viz., selligerum, which possessed four or more, and C. Lowii, whose spike of successional blooms was very fine.

Cattleya crispa, in several large examples, as noticeable for the charming variety in the flowers; although agreeing in general, the degree of whiteness in the sepals and petals, and the intensity of colour in the lip, differing a good deal, but they were each handsome. A pretty Vanda limbata was showing several blooms, but it was getting a little *passé*, as was Lælia elegans, which had been finely in flower. A Cattleya, a hybrid betwixt Eldorado and superba, was carrying a bloom or two. The leaves are produced singly, as in C. Eldorado, and in pairs, as is the constant habit of C. superba; the bulbs are also slender, as in Eldorado; the petals are dull vinous-purple, sepals greenish, the throat being white, suffused with purplish-rose, and lip a dark purple—unusual combination of tints, not productive of a showy bloom. It is valuable as an achievement in Orchid hybridisation only. Brassia verrucosa major, is a great rarity, and decidedly showy, and worthy of a place in any collection. The spike was of some length, and drooping as in most of the genus, the flowers being 5 inches across, and of a pleasing creamy-white hue—the plant seen carrying four blooms fully expanded. Calanthe veratrifolia was bearing aloft one strong flower-spike; the plant having been in tolerably constant bloom since September, 1883, proves its usefulness.

Other Orchids in flower more or less abundantly were Mesospinidium vulcanicum, several Miltonias, as Morelliana, Regnelli, and virginalis, Odontoglossums citrosmum, Pescatorei, polyanthum, and triumphans; Pilumna nobilis, with two spikes, pure white, and beautifully scented; Phalænopsis amabilis, blooming as it does at all seasons; and P. grandiflora, that carries its blooms in the manner of amabilis, but is larger, and has a yellow blotch in the middle of them. Phalænopsis Esmeralda and Schilleriana were amongst those with blooms. A pretty Sobralia, as all Sobralias are, was seen in Macrantha rosea, a dwarf growing miniature kind, evanescent as regards bloom, but producing it successively. Vanda Batemanni had been good, but was over; and Thunia alba was also seen. Cattleya Wallisii (Eldorado alba) and C. Gaskelliana were likewise noticeable plants, the purplish sepals and petals of the latter being very striking characteristics.

Several Masdevallias were putting forth a few flowers, which had all the look of incongruity and unseasonableness; their bright colours meet with small recognition whilst summer bedding and other out-of-doors flowers are so gorgeous. There were M. Backhousiana, M. Harryana, M. ignea, and M. Veitchii. Dendrobium superbiens, Disa grandiflora, Dendrochilum filiforme, and Anguloa Clowesii were amongst the rest of the Orchids carrying a few blooms.

Mr. Williams is cultivating the beautiful Dipladenias in large quantities, he evidently believing in an increased cultivation of the plants now that their culture is better understood by gardeners. D. elegans, the white one with the lemon throat, resembling closely some of the Thunbergias, was doing capitally in a low span stove-pit, as were D. amabilis and D. Brearleyana. The span-house lately erected has one half filled with Ericas, bushy, healthy plants, that show at this season of the year but small signs of being grown in London; the other half is filled with the Amaryllis, now ripening off their bulbs. This last named division has hotbeds in the middle of the space and at the sides, and is altogether a useful structure. Physianthus albens, a white-flowered twiner, was flowering nicely in the Heath-house.

THE CAPER BUSH.

Every one knows the Capers of commerce, a condiment which enters into various culinary preparations, and has a reputation as an anti-scorbutic. They are the flower-buds of Capparis spinosa, a shrub of warm climates. The flower-buds of Zygophyllum fabago are, however, occasionally substituted for real Capers. Common as this product of commerce is, few have any true knowledge of the culture and extent of the trade in this trifling article. The culture of the shrub is chiefly confined to Provence and the locality halfway between Marseilles and Toulon. In Asia Minor, Greece, and Turkey, where the Caper grows wild in the fields, it is regarded as a nuisance, exhausting the soil, and being difficult to eradicate. The quantity of Capers annually collected in Provence is estimated at 1,760,000 lb., worth on an average 7*d.* per pound.

The plain of Cuges between Marseilles and Toulon is where the best Capers are grown, and where the mode of culture can best be seen. This is an oval basin of about 900 acres, surrounded by high mountains, which afford shelter. The soil is a rich calcareous clay; the plants are grown on the hillocks or slopes, where the soil is retained by walls of stone, in terraces, which look like the steps of a great amphitheatre. The plants are raised from suckers or cuttings, which are saved at the time of pruning or trimming for the second time in spring. These cuttings, about 3 feet long, may be kept several days before planting if wrapped in a wet cloth. It is not necessary to follow the instructions in detail for planting, &c., as the culture is not likely to receive attention here.

It is not till the fifth or sixth year that the shrubs are in full bearing. The after-production is indefinite, for there are plantations which have yielded abundant crops for fifty years and which are still in good condition. The fruit-buds are gathered from the trees by women, who receive 2½*d.* per kilogramme of a little over 2 lb. They are collected every two or three days, before they become too large and hard. They are spread on cloths for a day, and picked over and thrown into a cask of wine vinegar, and on the good quality of this vinegar depends the excellence of the Capers. If the vinegar is bad, they will not be firm, but soft and washy. Those which are collected before they are mature are sold under the name of "*cornichons de Capriers*," because they resemble in form small Gherkins. Before being sold to the dealers they are passed over various sieves to sort them into different sizes. A good Caper plantation will yield 80 kilog. to the hectare (2⅞ acres), but the expense is considerable. The growers are, however, well satisfied with their returns. *P. L. S.*

WATER SUPPLY.

Rain Gauges.—All water supply comes from the clouds, and it is with the products of the clouds as rain including therein snow and hail) that I have to deal.

Perhaps, before describing the general features of rainfall distribution, it may be permissible to explain (for the use of those who have never done it) how the fall of rain is measured. If we imagine a flat dish—a tea-tray, for instance—placed upon a lawn during rain, it is obvious that (subject to loss by splashing) that tray would at the end of the shower be covered by a layer of water of a depth approximately equal to that which fell upon all portions of the lawn, and the depth of the water on it (say half an inch) would be the depth of the rain fallen. Obviously, besides the loss by splashing, the water on this tray would soon evaporate and be lost, besides which the depth could not easily be accurately measured. For these reasons some form of funnel is always used, so that the rain may be, as it were, trapped, prevented from splashing out, and from evaporation. In the gauge before you (a very inexpensive one) all known sources of error are guarded against, and, as the water collected by a 5 inch funnel is measured in a jar only 1½ inch in diameter, it will at once be seen that its vertical depth is multiplied nearly tenfold, and therefore even $\frac{1}{100}$th of an inch is easily measured.

There are other patterns specially adapted for observation on mountain tops, where they can only be visited once a month; others for observations during heavy thunderstorms, so as to obtain data needful for drainage questions; others in which every shower that falls writes down its history—the instant of its commencement, its intensity during every minute, and the time of its termination; but I must not stand between you and other papers with a discourse on the many interesting points which these gauges bring out.

Rain Records.—During the last twenty-five years I have done what I could towards establishing a complete system of recording the rainfall in this country. In early days the British Association for the Advancement of Science gave considerable help, but some ten years since they dropped it. Government has never given any help at all, and now the whole cost, or 99 per cent. of it, is borne by the observers themselves, a body which has now grown to the very large number of nearly 3000. I do not know the precise number, but there are every year new stations beginning, old ones stopping, and others interrupted; yet for 1883 I have just had the pleasure of printing perfect records from 2433 stations, every record having been previously carefully examined and verified.

Hitherto I have been so overworked, and my staff has been so small, that the discussion of the data falls behind the collection; for this reason I cannot lay before you such data as I wish. However, the map on the wall is the one I drew many years ago, and which was inserted in the sixth report of the Rivers Pollution Commission. It is not perfect, but as it is tinted with increasing darkness for places with heavy annual falls of rain, it will at least show you the broad features of the distribution over the country.

I refrain from going into the subject in detail, desiring chiefly that you should realise the fact that large tracts of country have twice, and even three times, as much rain as others. If we descend to single stations the differences are, of course, greater—*e.g.*, in 1883 the rainfall at The Stye, in Cumberland, was 190.28 inches, and at Clacton-on-Sea, in Essex, it was only 18.71 inches; that is to say, the one was more than ten times the other.

Here I should like to interpose a question as to public policy. There is often a great outcry if the water of one district is taken to another. Surely, while there is no relation whatever between the density of population and the quantity of rainfall, one early duty of a Government is to see that all parts are amply supplied with the chief necessary of life. Englishmen have a dread of centralisation, but in many ways they pay a long price for their dread. At present it is not often that any town can even state before Parliament its views as to the effect upon it of what its next neighbour may be obtaining powers to do. Having suggested one semi-legal question, I may as well mention at once another. Up to the present time, there being no Hydraulic Office (as I hold that there should be) in this country, all the larger water questions come before Parliament as private Bills, and, provided that they get through committee, they, as a matter of course, become law—law for all time to come. No one can foresee what will be the total population of this country a century hence. No one can tell where the bulk of the people will reside, nor what will be the need for water in various parts of the country. Water-rights are already very valuable, and they will probably become still more so. Would it be possible to safeguard our successors by insisting that special water-rights, if now asked to be created, shall be subject to revision, without compensation, after the lapse of 100 years?

However, to return to rainfall, and explain why I stated it to be the origin of water supply. All rain and melted snow must be disposed of either by evaporation, percolation, or flow into streams and rivers. The first class, evaporation, is, of course, not a supply, and therefore we must not pursue it. Percolation is the source of all springs, and of all well-water. Sometimes, as at Lancaster, the springs are so large that even a considerable town can be supplied by merely laying pipes to the sources whence they burst forth; sometimes they run into the reservoirs of gravitation waterworks; sometimes they pass, as in the chalk districts, for miles beneath impervious strata, finally being either pumped up from wells, or even, in rare cases, rising as true artesian wells above the surface of the ground; and sometimes they pass even deeper, as in the Red Sandstone supplies pumped from extreme depths for Liverpool and other towns.

The water which runs off the surface is sometimes utilised by throwing a bank across a stream, and thereby forming a reservoir behind it, as, for instance, in the new supply for Liverpool from the Vyrnwy, where the reservoir will form a lake larger than many of those in Cumberland. Sometimes the lakes themselves are utilised as reservoirs, as, for instance, Loch Katrine and the surrounding lakes, and sometimes, as at York and London, the rivers are drawn from by powerful pumping machinery.

It is often said that there are few things so uncertain as the rain. That is both true and false. True as regards our ignorance of the future, false as regards our knowledge of the limits within which the quantity of rain will be found to vary.

There are now hundreds of records of rainfalls in this country of thirty or more years each, and in a very large majority of them it will be found that the following proportions will be within 7 per cent. of the truth:—

Wettest year, 45 per cent. more than the average.
Driest year, 33 per cent. less than the average.
Driest two consecutive years, 26 per cent. less than the average.
Driest three consecutive years, 21 per cent. less than the average.

There are many other facts respecting the laws of rainfall distribution, concerning which time prevents my saying anything, but I trust that enough has been said to establish the necessity of a perfect system of rainfall registration as the basis of any efficient hydraulic organisation. *G. J. Symons, F.R.S., in the "Journal of the Society of Arts."*

The Rosery.

Rose A. K. Williams.—A feeble rosarian, with plenty of enthusiasm, my experience of A. K. Williams is that blooms for exhibition must be cut from maiden plants, *i.e.*, stocks budded the previous autumn; but my experience also is that stocks transplanted with dormant buds of A. K. Williams or any Rose seldom give good blooms the first season after transplanting. Therefore my advice, humbly given, to rosarians who would show A. K. Williams well, is, Patience. Forego a season, and every year bud twenty-five or thirty out of every hundred stocks you bud with A. K. Williams, and give last year's plants away in November to your neighbours—cottagers first; but if they do not like so to do, I may say I believe with careful culture old plants of A. K. Williams may give an occasional good bloom once in three years. I have some old plants which bloomed as well as maidens last year, and this year I have cut only very pretty little blooms about the size of a crown piece. I like them as big as the crown of a hat, but they have made good wood, and promise well for next year. *Gallus.*

Rose, Red Dragon.—A seedling from Charles Lefebvre, raised in the establishment of Messrs. W. Paul & Son at Waltham, and having beautiful crimson flowers and a climbing habit. It is figured in the last number of the *Journal des Roses.*

FORMATION OF STARCH.

Professor Sachs has been engaged in the study of the rate of formation and disappearance of starch in the leaves of growing plants, and as the process for conducting these researches, unlike those for determining the amount of absorption of water by the living plant, is easy to carry out, and requires little or no apparatus, I think I may venture to describe it more in detail, as perhaps some present, especially those who reside in country districts, might be inclined to assist in this research by their own observations.

The leaf to be examined is first plunged into boiling water for about ten minutes, then taken out and digested in alcohol for about the same time (I find methylated spirit answers perfectly well). This treatment extracts the whole of the colouring matter (chlorophyll) and leaves the leaf perfectly white. The leaf is now placed in an alcoholic solution of iodine, and the presence or absence of starch is demonstrated in a few minutes. The absorption of iodine commences at the edges, and soon colours the leaf blue-black if much starch be present, or brown if the quantity of starch be but small. The venation of the leaf appears as a pale network upon a dark ground, rendering it a very beautiful object; but all my efforts to preserve the specimen beyond a few hours have hitherto failed.

The curious and interesting information obtained from these researches is, that the amount of starch present in the leaf of any given plant varies considerably under different circumstances. In direct sunshine, and under otherwise favourable circumstances, starch is formed very rapidly; but it generally disappears entirely during the night, so that a leaf collected in the evening will prove full of starch, while another leaf of the same plant collected before sunrise will not show a trace.

It is also an interesting fact, but one we should quite anticipate, that if the air surrounding the plant is deprived of its carbonic acid by means of caustic soda, no production of starch takes place, even in direct sunshine, and with warmth and moisture that would under other conditions be sufficient.

Again, the gradual increase in the quantity of starch produced during the day, and under specified conditions, is a matter of great interest, as it would point to certain times and conditions when the plant would probably be more vigorous, and the activity of its medicinal principles greater than at some other time. We already recognise the importance of plants intended for medicinal use being collected at certain periods of growth, but it is possible that we have still something to learn upon this subject. *From the "Pharmaceutical Journal."*

WEEVILS.

Your correspondent, Mr. M. P. Andersen, alluding to these pests, asks for a little information relative to their history, so I send a few remarks, and also state what means I have known taken to destroy the larvæ of some of the tribe in their winter quarters. There are, it is said, about 20,000 species of weevils, and they are all vegetable eaters, consequently they may well be called "one of the plagues of agriculture," and every vegetable, as likewise all our cereals, has its own particular foe.

The Pea weevil (Bruchus Pisi), "lays," says Louis Figuier, "her eggs on Peas which are ripe, in which the larva scoop out a habitation, and then make their exit by a circular hole. They remain all the winter, and are not hatched till the following spring." Some English writers say that this weevil undergoes all its transformations in the seed, and that the perfect insect remains there until the spring, but I am certain that the perfect insects are sometimes seen in the autumn, and that a very good way of killing the pest is to burn the Pea haulm, fork the soil over, and scatter air-slacked lime over the ground. The Plum weevil is a real plague in America; it is a true Curculio, and looks for all the world like a dried bud when shaken from the tree. It feigns death splendidly if you happen to disturb it in its operations.

The beetle is of a dark colour, with white, yellow, and black spots. It appears, like our cuckoo, between April and June, when the little Plums are as big as Peas. It stings the side of the fruit with its long curved snout, making a crescent-shaped cut in the skin, and there it deposits one egg, going on from Plum to Plum. The grubs are hatched by the heat of the sun, and immediately begin to burrow obliquely towards the stone. The fruit gets weakened and falls before it is ripe, when the maggot quits it and enters the earth. It there becomes a pupa, and comes forth a perfect insect in three weeks. Several broods are hatched the same season, some of the late broods remaining (as pupa) in the soil all the winter. These weevils attack Apricots, Nectarines, Peaches, Apples, Pears and Quinces, and our American cousins use sulphur largely in destroying them, for all weevils particularly dislike it.

Fruit gardeners will in small orchards go about every morning and evening during June when the insects are placing their eggs in the fruit, and by giving a sudden shake or jar to the limbs cause the creatures to fall off on to a sheet placed under the tree, from which they are easily collected and destroyed. Both pigs and poultry will eat the larva, so these animals are admitted when the fruit begins to fall; in other places the fallen fruit is gathered up and burned before the grubs escape into the soil, and thus the advent of a new generation is prevented.

I should imagine that it was the red-legged garden weevil that attacked your correspondent's Strawberries. They eat the roots. My son's garden, a small one, was infested last year; they ruined his vegetables, even the larvæ were as bad, if not worse, than the weevil. Salt will kill them, but it killed the crops as well, and ammoniacal liquour from gasworks will likewise prove beneficial. The right time to apply it is in autumn when the ground is free from crops, and when it can be forked over to allow of the liquid soaking in. *Helen Watney.*

Orchid Notes and Gleanings.

Vanda tricolor and V. suavis. — This section of Vanda, of the introduction of which the late James Veitch was always so proud — as well he might be, seeing that in it we obtained almost all that the heart could desire in a plant—handsome evergreen foliage, ornamentally arranged, and a profusion of very ornate flowers, very lasting, and of the most delightful fragrance—was sent to the great Chelsea firm from Java by their persevering collector, Mr. Thos. Lobb, in 1846-47.

V. tricolor, the typical species, was mentioned in vague terms in the *Botanical Register*, 1847, p. 59; and later on, in the *Botanical Magazine*, 1849, vol. 75, tab. 4432, we find it well figured, and from it and from contemporary information on the subject, we learn that these Vandas were, even in those early days of their introduction, both well grown and much admired. But even in the small number which reached Messrs. Jas. Veitch & Son alive, it soon became apparent that there was more than one variety, and that while the plants varied somewhat in their markings, a great and definite distinction could be obtained by selecting the pure white grounds as one, and the yellow as another group. Professor Reichenbach, however, always maintained that they belonged to one and the same species, and our now better knowledge of the plants tells us that there is no reliable botanical distinction between them. Nevertheless, the distinction was so well marked that Dr. Lindley described the plant exhibited by Messrs. Veitch at the Royal Horticultural Society April 4, 1848, which was named Vanda suavis in the *Gardeners' Chronicle* of that year, and very justly speaks highly of the variety, the only misdirection being his description of it as having the habit of V. Roxburghii, which was a very far-fetched comparison. Paxton's *Magazine of Botany*, 1849, mentions V. suavis as being well shown by the late Sigismund Rucker, and also by Messrs. Veitch, and in the *Botanical Magazine* for 1860, vol. lxxxvi., tab. 5174, we have a very good figure of it. Never since they were introduced has this section of Vandas lacked admirers, and in many collections they have been made a speciality—the collections of Dr. Paterson, of Bridge of Allan, from whom we received the specimens we illustrate (fig. 46), and that of William Lee, Esq., of Downside, Leatherhead, being specially fine and well grown. In the latter gentleman's collection a very superb lot are now in bloom, among which may be mentioned V. tricolor Leopoldi, a very rich variety; V. t. Warneri, V. t. Dodgsoni, V. t. Patersoni, and V. t. Russelliana, as well as V. t. suavis (Veitch's) and V. t. suaveolens, a very sparsely spotted variety of great purity; but among the whole of the varieties perhaps those we illustrate, V. tricolor Patersoni, with bright yellow ground, brownish-crimson spots and magenta-crimson labellum, and the pure white, small spotted V. suavis, Wingate's variety (fig. 47), are the most distinct.

But after all the good culture of the plants should be the object aimed at: this secured they will be sure to be liberal with their flowers. On the point of culture we have of late years had some conflicting testimony, but on summing it all up we are sure that the V. tricolors are not hothouse plants and that they thirve in a temperature of from 55° to 65° Fahr. better than in any other. It is also now well known that they dislike bright sunlight, and are equally impatient of a dry, parching atmosphere. One of the surest signs whether these plants are doing well or not is the manner in which they carry their leaves —if they lose the bottom ones and the top ones become soft and wrinkled they are too hot and too dry. When these Vandas get "leggy" they are very difficult to bring round again, and the common method of making them more presentable, by cutting them down, is the very worst. It is much better to find healthier and shadier quarters for the plants, where they will regain their vigour, and when this takes place the bottoms will soon get furnished with young growths. Vanda tricolor and its varieties may be said to be cool intermediate house plants, requiring shade and a reasonable allowance of rain-water, and when so treated they are safe; but many instances have been known of them passing through the winter in the most vigorous health in a temperature of 45°, indeed Dr. Paterson's plants are stated to be frequently as low as that. Mr. C. Wissenbach, of the Royal Gardens, Wilhelmshöhe, tells of a plant of V. tricolor which refused either to grow or to die in the East India-house temperature, 70° to 80°, but which immediately went into vigorous growth in a minimum temperature of 50°. Mr. David Kemp, of Dunlop, Ayrshire, often gets spikes of eighteen flowers on plants which have been wintered as low as 45° Fahr. But while extremes of either heat or cold should be avoided, the grower had better err in placing his plants in a cold than in a hot house, for they greatly resent heat, and that more particularly in the winter, when they should be kept cool and moderately dry. The small brown scale attacks Vandas when they are badly cultivated, and their appearance should be a warning that cooler, more airy and shady quarters are required. *J. O. B.*



Fig. 46.—Vanda tricolor Patersoni.

Odontoglossum Pescatorei Veitchianum.—A coloured figure of this extraordinary variety, now in the possession of Baron Schröder, is given in the *Garden*, August 9, 1884. The numerous large violet blotches on the snow-white sepals and petals give this variety a very striking appearance.

Odontoglossum Edwardi, Rchb. f.—This was originally described in our columns in 1878, vol. x., p. 74, and has been lately figured in the *Botanical Magazine*, t. 6771. The pseudobulbs are elongate ovate, giving off a pair of strap-shaped leaves and a stalked paniculate inflorescence, with numerous purple flowers, each about 1 inch across. The species is a native of Ecuador.

Cattleya Trianæ splendidissima.—The sepals and petals of this fine variety are pure white, and the lip rich magenta with an orange throat. It flowers in spring. Mr. Williams in the *Orchid Album*, t. 150, recommends the plant to be grown in good fibrous peat with good drainage.

Epidendrum atropurpureum.—This is one of the finest of the Epidendrums, and is well figured in a recent number of the *Orchid Album*, t. 149. Its pseudobulbs are ovate, wrinkled, with two narrow lanceolate acute leathery evergreen leaves, and a terminal spiked raceme, produced in winter, and bearing many flowers, each oblong in outline, flattish, 3 inches long by 2 inches in breadth. Sepals and petals obovate, oblong, greenish externally, chestnut-brown within; lip lobed; lateral lobes small, erect, pointed; terminal lobe obcordate, white with a crimson blotch. Epidendrums, as a rule, do not like much shade, and grow well on blocks suspended near the glass. It is a native of Central America.

Dendrobium crassinode.—This is a Burmese species, with deciduous leaves falling from the swollen joints of the stem. The flowers are produced in March and April, and are transversely oblong, flattish, with lanceolate segments, white, tipped with magenta, and with a circular lip, with a large basal yellow blotch and a lilac lip. Mr. Williams recommends that it be grown in the East Indian-house, and in the light as much as possible, but slightly shaded from the burning sun, in sphagnum and fibrous peat, with good drainage. After the plants have completed their growth they may be placed in a cooler house. *Orchid Album*, t. 152.

Vanda Sanderiana.—"Flowers from 4–4¾ in. across. The sepals pale straw-coloured, richly and beautifully netted with reddish-crimson, edged with white. Petals soft blush, freely spotted in the lower half with purplish-crimson, the lip claret-coloured, and the flower stout and compact in shape, like the finest forms of Odontoglossum vexillarium. The

spikes numbered thirteen, and were from 9 to 12 inches high, bearing about eighty flowers. The number of leads was eight. The whole plant is dwarf and compact, and will probably be fine for a fortnight or three weeks." [The above is a description of this superb Orchid, forwarded to us by Messrs. Backhouse & Sons, York. A large page illustration will be found at p. 441 of our volume for 1883 Ed.]

Odontoglossum cirrosum.—A coloured figure of this is given in the *Orchid Album*, t. 151. In its culture Mr. Williams emphasises the necessity for keeping the plant moist at the roots all the year round. The plants make their growth after flowering, and as there will always be some growing, they will bloom at different times of the year.

COLONIAL NOTES.

South Australia.—The report of the Director of the Botanic Garden, Adelaide, for the year 1883 is very satisfactory, showing steady progress in the state of the garden and in the advancement of economic botany and horticulture. The difficulties of cultivation are increased by the heat and drought of the climate. The year 1883 was remarkable for a rainfall of 25 inches—10 inches more than in the preceding year. The temperature of the hottest day was 111° in the shade! and 162° in the sun. Orchid cultivation must be carried on under difficulties.



Fig. 47.—Vanda suavis, Wingate's var. (see p. 236.)

Indiarubber and other Products in Guatemala. — The preservation and extension of the cultivation of economic plants is a subject of so much importance at the present time, when so much is being done to promote new industries, to bring to light new sources of produce, and to develope those already known, that it is satisfactory to learn, from Mr. Consul Bennett's report on the trade and commerce of Guatemala during 1883, that the vexed question of tapping the trees, or cutting them down, was under discussion. What happened with the Gutta-percha trees (Dichopsis gutta) in Singapore and Penang forty years ago, by which the plants became well-nigh exterminated in those islands, has since been enacted in other countries with other useful plants. The Guatemala Rubber tree (Castilloa elastica) is a valuable source of this important substance, and should be carefully preserved. Consul Bennett says those in favour of cutting down allege that the quantity of rubber extracted by so doing is only equal to what would be collected in five or six tappings, after which the tree would die, and consequently that the yield, being immediate and of equal quantity with what would be given by a series of yearly tappings, and the tree in both cases dying, it is more to the interest of all to cut the tree down at once. This course, however, is forbidden by a Government decree. It is possible the law may be rescinded, and the practice allowed, on condition of two new rubber trees being planted for every one cut down. Guatemala is described as being rich in textile plants, Cotton, Ramie or China grass, Hemp, and numerous others. The native Indians are fairly skilled workers in cloth and woollen goods, somewhat oriental in character, and yet with both the material, the skill, and the labour on the ground, empty coffee sacks to the value of 40,000 dols. are annually sent to the Republic alone, mostly from Dundee. Ramie especially grows well, with an exceedingly long silky fibre, quite 24 inches in length, and in certain districts will produce four crops a year. It is not, however, cultivated or gathered, and remains only a unit in the long list of Guatemalan agricultural products, which are waiting for the master hand to turn their riches to account.

YAMS.

Under the title of "Le Potager d'un Curieux," a series of interesting papers have been contributed by M. A. Prillieux and M. D. Bois to the monthly *Bulletin of the Acclimatisation Society of France*. In the contribution to the journal for April last the Yams—species of Dioscorea—come under consideration, and are treated of very fully, first with regard to their geographical distribution, next with regard to the character of the plants and the nature and size of their roots. The following are stated to be the principal species cultivated :—

Dioscorea globosa, Roxb.—An excellent species, highly valued by Europeans in British India. It has large white roots, is extensively cultivated, as well as the varieties D. rubella, Roxb., and D. purpurea, Roxb.

D. triloba, Law, is an American species, of excellent quality, the roots of which are tender and very farinaceous.

D. alata.—A good species, with qualities similar to the preceding. It is an object of considerable cultivation in Oceania, where, with the Taro (Caladium esculentum), it is the principal alimentary plant. It is cultivated in Java and Mauritius, and numerous varieties are known.

D. Bertesoana, D. cayennensis.—West African species, introduced and cultivated in America ; very productive and robust in habit.

D. atropurpurea, Roxb.—An Asiatic species, much cultivated in Malacca, Pegu, and the Eastern Isles. It forms a very large root, of a violet colour, near the bark ; in this respect it resembles D. alata, which has a violet-coloured variety. It is a very productive species.

D. eburnea, Lour.—Wild and cultivated in Cochin China. It has large, long, incurved roots, somewhat in the form of an elephant's tusk.

D. aculeata, L.—Wild and cultivated in India, the Malay Archipelago, and Oceania.

D. pentaphylla.—The roots are very tender and farinaceous.

D. sativa.—This is mentioned both as a native and cultivated plant in India, the Moluccas, and Mauritius. It forms large tuberous roots, and is the most commonly cultivated species of Yam.

D. Schimperiana.—Reported by Schimper to be indigenous to Abyssinia, where the root is edible and resembles that of D. sativa.

D. bulbifera, described as a native of both the Old and New Worlds. The American plant (Guiana and Antilles) has been described under the name of D. lutea, Mey. It is a strong growing plant, producing bulbils in the axils of the leaves. On this point Mr. Bentham says (*Flora Australiensis*, p. 462) : —"I have already (*Fl. Hongk.*, 368) expressed my belief that modern authors have transposed the Linnean names of the two species, *D. sativa* and *D. bulbifera*, both of which are apt to bear bulbs in the axils of the leaves."

D. japonica, Thb., and *D. Batatas*, species found in temperate and cool climates, and cultivated also in warm counties as in Central China and Java. They produce numerous axillary bulbils and long fusiform roots.

D. triphylla, L. = *D. dæmonum*, Roxb., *D. dumetorum.*—Indigenous to Asia in the Malay archipelago and in Eastern Africa. It is a large rooted strong growing plant. Roxburgh describes the root of this plant as being "dreadfully nauseous, even after it has been boiled."

D. oppositifolia = *D. nummularia.*—Found abundantly over Central Asia. Roxburgh describes it as a native of the forests about Calcutta, flowering at the close of the rains. The root is described as tuberous, but small and hidden by numerous strong fibres and apparently unfit for food.

The paper concludes with a list and description of East Indian species of Yams.

Florists' Flowers.

Auriculas.—These should now be in active growth. I finished potting over a month since, and the new roots have now good hold of the fresh compost, but with the prospect of grand weather before us there is still time for repotting. In my opinion good soil is essential, *i.e.*, a rich sweet compost, and if this is given there is no reason for such a sumptuous top-dressing in spring, which I regard as something akin to "cramming" poultry. An undue amount of stimulation is given to the plants, the effect of which is easily seen, but not so readily counteracted. Last year I did not top-dress a single specimen of over 1500 blooming plants, all of which produced good trusses and the quality of many of the flowers did not offend the eye of *connoisseurs* in these matters. The same plants bred well and now look in a very vigorous condition ; several small trusses of bloom are being sent up, all of which, with one exception, are lateral—good buds showing themselves, for the development of which there is ample time. I would rather see such trusses produced now than later on, as there is not so much chance for the plants to prepare for vigorous blooming next spring. All the flowers are pinched out of such as soon as they can be seen. Strict attention must be paid to watering, ventilation, and cleaning ; in the former item a good maxim for a month or six weeks to come is "never allow them to get dry." Plenty of air is absolutely necessary ; when there is good evidence of fine nights I have the lights removed entirely, and during shady weather this is also practised : the plants seem to enjoy the cool evening and early morning dews immensely. Green-fly and decaying leaves should be promptly removed, the former with a camel-hair pencil ; they are a great pest as also is the root aphis. From this time forward will be a good time to watch and destroy the latter, for if any were left after the washing they received during repotting they will most likely betake themselves to the young roots upon the outside of the ball. It is best to turn the plants out of the pots and examine the latter, especially any that are suspicious, and where the pest is detected apply a strong solution of soft soap and Fir tree oil with a small brush ; great good

will result by destroying the autumnal and winter brood, as they then assume the sexual character, and usually hybernate during the winter.

CARNATIONS AND PICOTEES.—It is now quite time all these were layered; most growers, especially in the South, will most likely have all but finished; in private gardens their propagation is greatly neglected, although layering is so simple and easy a method of increasing them, and sure withal; yet simple as the operation is I come across numbers of gardeners who really do not perform the operation well. Will you believe me, Mr. Editor, when I say a young gardener was presumably layering Carnations by simply pegging them down to the soil without making the necessary incision in the shoot! Such I actually saw less than a month since. To do the work successfully the chief point, when the incision is made, is to keep the incision open, both of the cut surfaces being in contact with the soil. It is best to layer in rich gritty soil, and give occasional waterings afterwards, especially if the weather is dry. The best results in border Carnation culture are obtained when, instead of lifting the layers every year, they are allowed to remain where they stand, and the following blooming season a grand display may be expected, a greater number of, if not finer, blooms, will be enjoyed. Pinks may also be layered now, where pipings were not put in in June. Last season I propagated a large number of Pinks in this way, and really good plants were produced, which bloomed right well, and were much stronger than those obtained from pipings. If pipings were rooted in June, the sooner they are planted out the better; accommodate them with a well-drained position, and plenty of rotten manure well incorporated with the soil.

PENTSTEMONS.—These have been, and still are, unusually fine this season, especially the old stools of last year, which through the mildness of last winter remained unhurt, and came up vigorously this season, and have produced grand masses of flower; if the seed is not required the old spikes should be cut away as soon as they are past their best; numerous laterals will soon make their appearance, and a second display will soon be enjoyed. Cuttings of the varieties desirable to perpetuate by that means should also be taken now, and dibbled in 6-inch pots of rich gritty soil, placed in a cold frame. Select the strong young shoots from the base of the plants, and insert them pretty thickly in the pots, where they may be kept until February, when they should be potted off singly and encouraged; such will make strong early plants for next season, much preferable to those struck in spring. They may be wintered in a cold frame or very cool house, thus keeping them sturdy. In raising them from seed the latter should be sown in February in a little heat, and the young plants encouraged to the fullest extent.

PYRETHRUMS. — These are now very popular flowers—both the single and double varieties; the former are especially in demand, proving most reliable as decorative border plants, so useful for cutting, and showy *en masse* upon the plants. No time is better than the present to make fresh plantations; gardeners frequently complain of the results of many perennials the first season, that result generally depending upon the time of planting and the subsequent treatment received. With these plants the former is of paramount importance. Presuming well established plants are purchased from a dealer now in 4-inch pots and placed in well dug, liberally manured ground, they will, before the winter sets in, have grown into good strong specimens; whereas if such plants were not put into the ground till October or next spring, which is only too frequently the treatment they receive, they would be all the while absolutely starving in the small pots, and, consequently, poor results must be expected. If you want good Pyrethrums next season, plant strong young plants in rich soil at once, and pinch off any flower-heads which show themselves—the issue of such effort is certain. If stools have been standing more than two seasons in the same position they should now be split up, raise them, and carefully divide into as many pieces as required and replant, remembering when manuring that they are gross feeders and enjoy a large amount of rich food. The difference between Pyrethrums grown under starved and sumptuous conditions is remarkable. Gardeners express astonishment at the magnificent blooms of these shown by Messrs. Kelway, of Langport, but they must know they are the result of the most liberal treatment. *T.*

PSEUDO-LARIX KÆMPFERI.

AT pp. 581 and 584 of our last volume we had the satisfaction, thanks to the courtesy of Messrs. Rovelli, of Pallanza, of describing and figuring the male flowers of this exceedingly interesting species, which up to that time were unknown to botanists. The specimen then figured enabled us to clear up the history of the golden Larch, so that we need now only refer to the account given at p. 584, as containing a summary of what is known concerning the tree. We allude to it again, as Messrs. Rovelli have, since our former account, kindly furnished us with a branch bearing nearly ripe cones, of which we now give an illustration (fig. 48, p. 241). It is hardly possible to overstate the beauty of these cones, which were of a light apple-green colour, thinly beset with a glaucous or blueish bloom. It will be seen from our sketch that the cones are erect, not pendulous, as they were at first supposed to be.

In this country up to this time neither male flowers nor cones have, to our knowledge, been produced; but possibly, after so hot a summer, we may hear of their production next summer. At present we have to be contented with the rich golden colour which the leaves assume prior to their fall. The tree is interesting also as being probably one of those which has escaped destruction around the temples or monasteries of China from the sacred associations connected with these spots, but Fortune also mentions having met with a group of them on a sloping hill-side in the province of Chekiang, where they were apparently planted. It will be remembered from a letter recently printed in our columns that although Dr. Hance looks on this and certain other interesting trees as survivals of the original indigenous flora of China, yet that he by no means denies the possibility of these trees having been introduced by the Buddhists in their migrations; indeed, he gives illustrations in support of this view. Let us hope that as our knowledge of the remote provinces of China and Thibet increases we may gain further knowledge upon these points. Fortune mentions that the largest tree he met with was no less than 130 feet in height. *M. T. M.*

The Herbaceous Border.

ERYNGIUM OLIVIERIANUM.—Two large plants of this in a sunny border of light soil, have caused a general sensation amongst visitors to my garden during July. They have grown where they stand for more than two years, having been sent from some nursery—I wish I knew which, that I might get more—as E. amethystinum. They are about 3 feet high, and 4 feet across, with branching umbels of heads as large—some of them—as those of the wild Teasel, and with bracts 4 inches across. The stalks are deep shining porcelain-blue. When at Kew last week I could not find my plant amongst the Eryngiums in the bed, but observed a small and far less showy plant labelled E. amethystinum. This caused me to send a specimen of my plant to Mr. Baker, who kindly sent me the following reply:—"Your Eryngium agrees perfectly with Delaroche's beautiful figure (tab. 12 of his quarto *Monograph*) of E. Olivierianum, a very rare one. E. amethystinum is totally different, with heads not larger than marbles." I am sorry to say that the plant seems rather difficult to increase. The seed seems all bad, and I cut up a plant last autumn and lost all the divisions: it does not seem to spread its root-stock. *C. Wolley Dod, Edge Hall, Malpas, Aug. 13.*

SUNFLOWERS.—Border flowers of most kinds seem distressed by the great heat, but the Helianthus are evidently enjoying it, as their big blossoms turn round and stare at the sun, with which they show satisfaction in their smiling round faces. It appeared the correct thing a short time back to be in raptures with H. annuus, and one was almost prepared to see it displayed in ladies' dresses or hair, or worn in the coat buttonhole of professed æsthetes, but happily the craze for such outrageous displays is dying out as quickly as it came in, and a more settled and refined taste is taking its place. For all that, there are places where the common Sunflower and other large varieties of it may be planted and grown with good effect, which is in the foreground of tall shrubs at the back of wide borders, where, with Hollyhocks, tall single Dahlias, Everlasting Peas, and such-like, they look quite of home, and do much to light up a garden, as they are conspicuous and telling when seen from a distance. My favourite among the Helianthuses is the perennial H. multiflorus, which grows from 3 feet to 5 feet high, and from now till far on into the autumn becomes smothered with blossoms, as the multitudinous stems branch out and flower with the greatest of freedom. The blooms of this kind are about 3 inches across, and the petals are of a beautiful bright yellow, quite equal in clearness to those of a Dahlia. There is also a double variety, H. m. flore-pleno, which is grown in quantity about the London parks, and in gardens near towns, where it always does well. These, like all the perennial kinds, may be easily propagated by division, as after being cut down in the autumn they form numerous crown buds and may be chopped or split through and divided as much as desired. To grow them well, the soil must be deeply dug, to allow them to send their roots down; and as they are plants of great strength and gross feeding habit, it is necessary likewise to give them a good dressing of rotten manure. *J. S.*

ESCHSCHOLTZIA CROCEA.—The rich deep orange variety of this showy annual, sometimes called aurantiaca, is one of the finest yellow-flowered annuals for the decoration of the garden. Unfortunately seeds of this are too often sown much too thickly, the result being starved plants and poor flowers; whereas isolated plants in good soil and of a generous growth produce large, well-formed, richly coloured flowers, and when sown in autumn on dry spots to stand the winter the Eschscholtzias are even more showy in spring than in summer.

FRUIT CROPS IN ILLINOIS.

THE space devoted to Apple orchards is less than that of last season, and the reduction is so large as to be worthy of special attention. The area of orchards is from 5 to 30 per cent. less than that of the previous year in over half the counties in the State. The area of Peach orchards is the same as last season in thirty-two counties, 5 per cent. more in two counties, and 10 per cent. more in two counties. The area of Peach orchards is not reported in twenty-five counties, and in the remaining forty-one counties the area is less than last season. There is a considerable reduction in the area of Pear orchards when compared with that of the previous year. In forty-six counties the area of Pear orchards is as large as that of last season, and in two counties the area is less than that of 1883. In forty-two counties the area is less than last season, and the area of Pear orchards is not reported in twelve counties. The crop of the several varieties of small fruits that have ripened this season compares favourably with that of former years. There was an average or better crop of Cherries in thirty-six counties, from 75 to 95 per cent. of an average crop in twenty-two counties, and less than three-fourths of an average yield per acre in the remaining counties. There was an average crop of Strawberries in twenty-five counties, 5 per cent. more than an average crop in sixteen counties, 10 per cent. more than an average crop in seven counties, and 20 per cent. more than an average crop in one county. In fourteen counties there was 5 per cent. less than an average crop, in fourteen counties 10 per cent. less, in five counties 15 per cent. less, in three counties 20 per cent. less, and in five counties 25 per cent. less. In the remaining nine counties there was less than three-fourths of an average yield per acre. In nearly two-thirds of the counties in the State there was an average or better crop of Raspberries, 5 per cent. less than an average in eight counties, 10 per cent. less in fourteen counties, 15 per cent. less in five counties, 20 per cent. less in three counties, 25 per cent. less in four counties, and less than three-fourths of an average crop in three counties. In all except one-third of the counties in the State there was an average or better crop of Gooseberries. In thirty-seven counties there was an average crop, in twelve counties 5 per cent. more than an average crop, in four counties 4 per cent. more, and in one county 15 per cent. more. There was an average or better crop of Currants in over half the counties in the State, and nearly an average crop in one-fourth of the counties in the State.

The Flower Garden.

The propagation of the summer bedding plants should now be proceeded with as rapidly as possible, so as to secure well-rooted cuttings before the approach of autumn frosts. In propagating Pelargoniums and similar easy rooting plants it is not necessary, nor desirable, at this season to give them the usual protection of the propagating pit, as they will succeed far better if placed in the most sunny position in the open garden, in which position they will, if only moderately watered, strike with the greatest freedom and certainty. With some it is a customary practice to dibble them into an outdoor border, and this is doubtless, in favourable seasons, a quick and economical method, as it obviates the necessity of using pots in the first operation; but I think, although it may prove in such seasons advantageous, yet in the long run an equally economical and a far better result will be obtained by placing the cuttings into moderate sized pots in the first instance.

By this method they not only strike root much quicker and with greater certainty than when planted in an open border, chiefly because of the action of the sun on the sides of the pots, subjecting them to a higher temperature, but in wet weather they are not nearly so liable to damp off because they are in a drier and healthier condition; they can also be protected by lights with greater facility should wet weather prevail. One important point should, however, on no account be overlooked, the pots should be so arranged as to effectually prevent worms from entering them, otherwise the drainage quickly becomes clogged, and the advantage of using pots is lost. The best method is to elevate the pots slightly above the ground on a platform of boards, or else on a bed of fresh sifted coal-ashes. The pots should not be placed too close together, otherwise the sun and air cannot have free access to them. Although the use of pots is saved in the first instance when planted in the open border, still the plants must eventually be potted when struck, after which they must occupy considerably more space through the autumn and winter, because, while they are potted separately, or at most in pairs, those potted in the first instance can remain without injury in their cutting pots till the spring, when more space under glass is generally available.

Some persons use square shallow boxes in preference to pots, but although they are perhaps equally convenient, and occupy as little space, they are not so conducive as pots are to the health of the plants, nor can they be so easily stored on the smaller stages and shelves. For all those plants which do not strike root so freely, and which require the aid of a slight bottom-heat, there is no structure so useful, economical, and successful as the old well constructed dung-bed and frame, as it not only affords a slight and genial bottom-heat, but the atmosphere in such a frame under good management is, at least at this season of the year, more conducive to root as well as top-growth than is the best constructed propagating pit heated by pipes. The fermenting material should, however, be thoroughly well prepared, by frequent turning for three or four weeks beforehand, so as to cause the rank steam to evaporate, and in forming the bed great care should be taken to make it as firm as possible, so as not only to prevent its sinking rapidly, but also to prevent strong heat arising by quick fermentation. When made the frame may be put on, also a sufficiency of sawdust may be put inside for the purpose of plunging the pots in. Two such beds will afford ample provision for propagating for the largest establishment, as the plants strike so rapidly that successional batches may very quickly follow each other by the timely removal of such as are struck to other quarters. Every effort should now be made to keep the garden gay and effective. This can best be accomplished by attending strictly to the various operations already recommended at regular and frequent intervals, and as the weather of late has been especially conducive to the shrivelling and ripening processes the greatest care should be taken to immediately remove everything that has a seedy or overblown appearance, and in order to strengthen the plants and to enable them to sustain the heavy demand made upon them during the present hot weather, occasional deluges of liquid manure should be administered. In taking off cuttings for propagation let this be done either from the reserve garden, or else take off only such shoots as can be spared without destroying the effect of the beds.

Frequently and regularly mow grass, also roll walks and shear edges of verges, as at this period especially much of the beauty and pleasure to be derived from a garden depends on the neatness and order in which it is kept. *T. S. C.*

The Orchard House.

We have finished gathering the fruit in both the early and late houses, and as soon as time can be spared the trees requiring it will be repotted. This operation may be described in a few words. Suppose the trees are in large pots, and it is undesirable to repot them in larger ones, the only way to place some fresh potting soil in contact with the roots is to turn the trees out of the pots. Take a chopper and cut 3 inches from the base of the ball of roots, and 1½ inch all round. This will admit of a layer of fresh soil at the bottom of the pot, and an ample space to pack some firmly round the sides. The trees will not suffer in the least by this radical treatment if the house is kept close for three or four days, and the leaves are syringed two or three times in a day. In a week the points of the young roots will begin to push into the fresh soil. I have in previous numbers recommended the Nectarines raised at Sawbridgeworth as much superior to any of the old sorts. Lord Napier, Stanwick Elruge, Pine-apple, and Victoria stand in the front rank. Goldoni, a distinct and good flavoured yellow-fleshed Nectarine, exhibited by Messrs. Rivers this season, promises to be a good addition. A selection of Peaches comprise Alexander, Hale's Early, Early York, Early Grosse Mignonne, Grosse Mignonne, Bellegarde; and to succeed this, Goshawk and Sea Eagle—the last-named being the best late Peach, ripening at the time of Barrington, which it far surpasses.

The trees that have not been, and do not require repotting, should be surface-dressed in October, or, rather, top-dressed, as distinguished from the usual light surface-dressing in summer. Before top-dressing in October a large portion of the worn-out surface-soil, with the small fibrous roots, must be removed with a pointed piece of iron, and a mixture of equal parts loam and decayed stable-manure should be rammed firmly in, in its place. *J. Douglas, Great Gearies.*

The Hardy Fruit Garden.

The almost tropical heat of the past few days causes fruit to ripen earlier than usual, so that early kinds like Williams' Bon Chrétien Pears, &c., will require gathering. The sort named is a well known kind, that is very useful, and is highly esteemed by many. In gathering this and other early varieties, it is well to go over the tree and take the finest fruit to the amount of one half the crop, and in a week's time the remainder. This insures for these a longer season, and those fruits that are left swell up considerably, but it should be borne in mind that the fruit must not hang on the tree till dead ripe, as the flavour will not then be so good, and the fruit becomes mealy. Plums will also be sooner ripe than usual, the Washington and Victoria on walls will be ready for gathering; the latter is considered a kitchen fruit, but oftentimes when thoroughly ripened it is quite admissible into the dessert, and is moreover almost a certain bearer. Morello Cherries are now in perfection, so that while the dry weather lasts no time should be lost in getting a quantity bottled for winter use. Go over the orchard at least twice a week, and pick up fallen fruit, which can always be put to a good use, and may be very acceptable now that bush fruits have come to an end, and Plums being also scarce this season.

The Hawthornden, Keswick Codlin, and Lord Suffield Apples are now ready for use, if required, and will continue good for about six weeks to come. Those who prefer a sharp flavoured Apple for eating now and onwards, will find Duchess of Oldenburgh to their liking, and it is moreover an almost sure bearer. In some localities the Apricot is a plentiful crop; this is the best month for preserving them. If there is a difficulty in having a sufficient quantity ready at one time, this can be managed by saving the first gathered and putting them away in a cool place—they will keep a week, till a sufficient quantity is got together for that purpose.

It is well to go over the Raspberry plantation, and cut out all last year's wood which has borne the crop this year, and let it be done carefully, and not break off the leaves of the shoots of the present year's growth, remembering that it is on the proper maturing and preservation of this year's wood that next year's crop in a great measure depends.

Newly planted Strawberries will require abundant watering, those layered in pots needing daily attention in this respect. *J. Rust, Eridge Castle.*

The Kitchen Garden.

Onions.—The Onion crop is a beautiful one this season, the bulbs, owing to the long spell of bright sunshine, are firm and well ripened, and therefore if taken up at once and exposed to the sun for a few days, by spreading them out in widths of about 4 or 5 feet with their roots facing southward, and afterwards be stored away while dry in a loft from which damp and frost can be excluded, they will keep well. They should be spread out thinly on the floor of the loft, or strung together by the withered tops, and be suspended from the roof. When storing the bulbs put all the small ones by themselves for pickling or culinary purposes, for which they are frequently asked in preference to larger ones. The ground cleared of the Onion crop should be got ready for the reception of Cabbages next month. For this crop we generally manure liberally and trench deeply.

Ordinary Work.—As crops of Peas and Beans become exhausted clear them off, and prepare the ground for other crops, such, for instance, as Lettuce and Endive, which will come off in time this autumn to allow of the ground being trenched for early crops of Cauliflowers, Peas, &c., and for this purpose it will be necessary, now that the exhausted crops are being removed from the ground, to determine upon the space or spaces to be reserved, and in such positions as are best calculated to bring forward the respective kinds of early vegetables. This will be a good time to cut a few bunches of the respective kinds of herbs when dry, and hang them up in a dry airy shed or loft for future use. If Cauliflower and Lettuce seeds have not yet been sown—as advised to be done in our last Calendar—no time should now be lost in doing so. Another sowing of Radishes, Mustard and Cress can be made out-of-doors, after which it will be necessary to have recourse to a cold pit, where the sashes can be placed over the seed and seedlings when necessary. If not already done, lose no time in getting the planting of Broccolis, Savoys, and Winter Greens completed. Late plantings, when the plants have previously had plenty of room in the nursery bed to develope themselves, and are let down to the bottom leaves when being planted, I find withstand the effects of severe winters better than those planted much earlier. Draw some soil to the stems of Broccolis, Cauliflowers, Savoys, Borecoles, and Leeks as they require it, and see to the earthing-up of Celery when the plants are thoroughly dry, and take care that no soil is allowed to get into the heart of them while the work is being done. See that gravel walks in this department are kept free of weeds by hand-weeding them; this is best done during showery weather, when the weeds will come up easier, and the roller, which should always be brought into use immediately after the weeds have been pulled up, will make a better impression on the walks. In order to preserve these in a clean and good condition there should be a sufficient number of garden scrapers, which are easily made and should be got in readiness during bad weather, distributed over the gardens, especially in the alleys leading from fruit walls and borders on to the walks, as also at short distances from each other at the sides and ends of the various plots, &c. Successional rows of Peas, as also freshly planted Cauliflowers, Broccolis, and suchlike, must have copious supplies of water at the roots during the present intensely hot weather; and it is during such weather as this that the manifold benefits resulting from the laying on of heavy surface-dressings of rotten dung on either side ranks of Peas, Beans, &c., are manifest. Make good plantings of Lettuce and Endive from sowings made the end of last month, and water the same every afternoon during the prevalence of hot weather, and also after the roots have taken well to the soil, otherwise the labour of planting will be as good as wasted; and Cabbage plants resulting from seed sown the same time should be pricked out 5 or 6 inches apart in nursery beds, so as to make a sturdy growth before being finally transplanted in drills 3 inches deep and 2 inches apart the middle of next month. *H. W. Ward, Longford Castle Gardens.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Aug	25	Sale of Bulbs, at Stevens' Rooms Trade Sale of Bulbs, at Protheroe & Morris' Rooms
TUESDAY,	Aug.	26	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; General Meeting, 3 P.M. Banbury Flower Show
WEDNESDAY,	Aug.	27	Sale of Bulbs, at Stevens' Rooms
THURSDAY,	Aug	28	Harpenden Horticultural Society's Show. Sale of Imported Orchids, from Mr. F. Sander, and Greenhouse Plants, &c, at Stevens' Rooms Trade Sale of Bulbs, at Protheroe & Morris' Rooms
FRIDAY,	Aug	29	Sale of Imported Flowering Orchids at Protheroe & Morris' Rooms.
SATURDAY,	Aug	30	Sale of Bulbs, at Stevens' Rooms

ALREADY, before we have had time to grasp all the multitudinous details of the Health Exhibition and extract from it what is of direct importance from our special point of view, we have before us the programme for the Exhibition of the forthcoming year. This is intended to comprise two divisions—1, Inventions; and, 2, Musical Instruments.

"The first division will be devoted to apparatus, appliances, processes, and products, invented or brought into use since 1862.

"The collection of inventions will, it is hoped, serve to bring vividly before the public the progress which has been made, during the last quarter of a century, in applying the discoveries of science to the purposes of daily life.

"For the practical realisation of this idea it will be desirable not only to exhibit the apparatus by which a process is carried out (or a model or diagram of it), side by side with the resulting product, but also to show the working of, at all events, a limited number of industrial processes in their consecutive stages.

"Having in view the wide range of this International Exhibition, and the limited nature of the total available area, it will be necessary to restrict as much as possible the amount of space which can be allotted even to the most important classes; and only under exceptional circumstances can applications be entertained for space for objects which have been shown in the Smoke Abatement Exhibition, 1881; the Fisheries Exhibition, 1883; or the Exhibition of Health and Education of the present year. As regards agriculture also it is considered that the annual shows of the Royal Agricultural and kindred societies will render it unnecessary to admit more than a few typical examples of each class of the improvements effected during recent years; and these should be, as far as possible, represented by models or diagrams.

"It will, indeed, be preferable that inventions generally should (as far as practicable) be illustrated by models, which in the case of an entire machine may be accompanied by actual examples of the parts improved.

"Where the invention relates to parts only of a machine, the whole machine will not be admitted unless the improvement (in respect of which the machine is offered for exhibition) cannot be sufficiently well shown without the exhibition of the entire apparatus, or unless in the opinion of the Executive Council the exhibit is of such special interest as to render its admission desirable.

"Exhibitors will be required, by reference to a specification and Letters Patent or otherwise, to show that their proposed exhibits come within the terms set forth in the conditions of Division I.

"As the Exhibition will be limited to the illustration of industrial processes, examples of either the raw material employed, or the finished product, will only be admitted when they are required for the full demonstration of a particular process. It is not proposed to allot space for the exhibition of manufactured goods alone, unaccompanied by any illustrations of the process of manufacture.

"Intending exhibitors should fill in the application form, which must be sent to the Secretary not later than September 15. Applications from foreign countries and the colonies will be received up to November 1."

The first division, including apparatus, appliances, processes, and products, invented or brought into use since 1862, comprises the following groups, in which our readers may be expected to be specially interested:—

"GROUP I.—AGRICULTURE, HORTICULTURE, AND ARBORICULTURE.

"*Class* 1. *Field Implements.*—Ploughs, drain-ploughs, cultivators, steam-diggers, harrows, drills, haymakers, horse-hoes, rakes, reapers, mowers, binders, anchors and rope porters, waggons, waggon-harness.

"*Class* 2. *Barn and Farmyard Implements.*—Thrashing machines, screens, winnowers, corn-cleaning machines, hay and straw elevators, hay and straw and fresh fodder compressors, turnip-cutters, chaff-cutters, grist-mills, horse-gear, crop dryers.

"*Class* 3. *Dairy and Poultry Farm Appliances.*—Milking appliances, cream separators, churns, cheese-making apparatus, apparatus for manufacturing butterine, incubators.

"*Class* 4. *Agricultural Construction.*—Models, plans and designs for farm buildings, oast-houses, silos, rick-stands, &c.

"*Class* 5. *Cattle Food.*—Materials, processes, apparatus; seed mills, cake crushers; boilers, steamers and cooking apparatus; feeding appliances.

"*Class* 6. *Horticultural Apparatus.*—Hothouses, frames, greenhouses, orchard-houses, graperies, boiler and heating apparatus, lawn mowers, watering apparatus, tools and implements, pots and plant boxes, garden wirework, chairs, &c., plant labels.

"*Class* 7. *Arboriculture.*—Apparatus, &c., used in forestry; methods and materials for the preservation from decay of trees and timber.

"GROUP XVII.—FOOD, COOKERY, AND STIMULANTS.

"*Class* 91. *Machinery for Treating Grain and Flour.*—Machines for preparing and grinding corn and dressing flour, and other mill machinery; millstone dressers, roll turners, and similar machines; machines for milling and polishing Rice; grain elevators; apparatus for drying grain; granary fittings.

"*Class* 92. *Manufacturing Articles of Food.*—Apparatus for manufacturing and refining sugar; confectioners' machinery; machines and appliances for preparing mustard, spice, pepper, &c.; manufacture of salt.

"*Class* 93. *Preserving Food.*—Methods, materials and processes for preserving animal and vegetable food; machines for producing cold.

"*Class* 94. *Bread and Biscuit Making.*—Kneading machines, biscuit and bread making machines, ovens; processes for making bread.

"*Class* 95. *Cooking Apparatus.*—Culinary utensils, chopping and mincing machines; apparatus for paring and slicing fruit and vegetables, cleaning fruit, washing and cleaning vegetables.

"*Class* 96. *Brewing, Distilling, and Wine-making.*—Machines and appliances connected with the manufacture and use of alcoholic drinks.

"*Class* 97. *Manufacture of Aërated Waters.*—Machinery, materials, &c., used for the purpose; stoppers and other appliances.

"*Class* 98. *Infusions.*—Apparatus, &c., used in the preparation and use of tea, coffee, chocolate, &c.

"*Class* 99. *Tobacco.*—Machinery, appliances, and processes for treating and using Tobacco."

Detailed information as to the thirty-four groups and 180 classes into which the entire exhibition is divided, embracing almost all departments of engineering, manufactures of all kinds, from railway carriages to field sports, mining apparatus to bookbinding, are given in the prospectus, which may be had of the Secretary, E. CUNLIFFE OWEN, Esq., Exhibition Road, South Kensington; or of J. SOMERS VINE, Esq., 27, Great Winchester Street, E.C.

IT may seem inappropriate to be talking of frost when the thermometer in the shade has been so recently in the 90's, nevertheless it is precisely at this period when many of the effects of the previous frosts become most apparent, and some injuries indeed do not reveal themselves till now. In this country the last winter was particularly mild, but our fruit crop reports recently published sufficiently indicate the havoc that April frosts occasioned. Again, although we did not in this country suffer so severely as our neighbours in the winters of 1879-80 and 1881-82, yet the havoc was very considerable, and we still await with interest the publication of the information obtained by circular from gardeners all over the country under the auspices of the Scientific Committee. It may, perhaps, serve to quicken the sense of the Royal Horticultural Society in the matter if we call attention to a series of similar inquiries instituted by Professor SORAUER, of Proskau, and of which we append a translation, in the hope that some information on the subject may be forthcoming. The Prussian Government has taken the matter in hand, and contributed not only its moral but its material support to Professor SORAUER, and the Russian Ministry of Agriculture is also moving in the matter. In view of the disheartening delay experienced in the publication of the report of the Royal Horticultural Society before alluded to, we are not very sanguine that Professor SORAUER will obtain much help from this country, and certainly in this country we cannot look for Government help; nevertheless we will at least bring the matter under the notice of our readers. Professor SORAUER puts the following questions:—

1. What was the greatest degree of cold registered during the last winter—of what duration was it, and when did it occur?
2. At what date did spring fairly commence?
3. When spring frosts were registered, in what condition were Sloes, black Currants, Hazel, Cherries, Pears, Apples, Beech, and Oak?
4. What was the height of Rye, Wheat, and other cereals at the time of the onset of spring frost?
5. What varieties of fruit trees suffered most, and in what way?
6. Which varieties proved hardiest?
7. What agricultural plants suffered most, and in what way? Which varieties proved hardiest, and how were they grown?
8. Was the spring frost general or partial, the sky cloudy or clear?
9. What reason do you assign for the appearances produced by the frost? Are you of opinion that injury from spring frost is a consequence of abnormal weather conditions during the previous year, and in what way has the vegetation been influenced by those conditions?
10. To what point of the compass does the land slope in which the plants have been most injured by frost?
11. What is the nature of the fertile upper soil, and what that of the subsoil?
12. Are there streams or other water in the locality, and has the water any influence on the injury by frost?
13. Was hoeing the ground undertaken, and with what results?
14. Were preventive or remedial measures of any use?
15. To what do you ascribe the sickly (diseased) appearances that became visible later in the year?
16. Which of the more commonly occurring diseased appearances, exclusive of frost damages, have you observed in cultivated plants?

The time has probably gone by for satisfactory answers to be given to any of these questions; nevertheless, as we have said, it is still not too late to reply to some of them, and in any case a discussion as to the effects of frost, and the means of preventing ill effects, is not out of season, even in the hottest month of the year.

—— THE DAHLIA SEASON is fast approaching, the plants are growing freely, and nothing but a softer atmosphere and cooler nights are needed to bring out good blooms. We are asked to remind those who are interested in the Grand National Show at the Crystal Palace, which takes place on September 5 and 6, that the entries should be sent in during the ensuing week, along with the amount of subscription, where not already paid. Further subscriptions, moreover, are needed, and admirers of the Dahlia should take care to make it their privilege and pleasure to aid the culture of the flower in every way. Both entries and contributions should be sent to the Hon. Secretary and Treasurer, Mr. T. MOORE, Botanic Garden, Chelsea, S.W.

—— "BOLETIN ANNUAL."—The second part of the *Bulletin of the Brotero Society*, established for the promotion of Portuguese botany, has recently been published by Professor HENRIQUEZ, of Coimbra. It contains lists of the plants distributed among the members of the Society, contributions to the flora of Portugal, including an account of the vegetation of the Berlenga and Farilhões islands, off the coast of Estremadura.

—— ORNAMENTAL PLANTS.—M. DE VOS has reproduced from the *Belgique Horticole* his complete list of ornamental plants described in the various horticultural publications for the year 1882. Two hundred and fifty novelties are mentioned and briefly described, with references to the original sources. The *Gardeners' Chronicle*, as usual, heads the list with no fewer than 127 novelties, most of them Orchids, described by Professor REICHENBACH. None of the other journals, either of this or any other country, contribute more than seven to the list.



Fig. 48.—cones of pseudo-larix kæmpferi: real size. (see p. 238.)

—— Planting Hardy Lilies.—Numerous as have been the fine kinds of Lilies that have been introduced within the recollection of those who cultivate these justly favourite plants, it is a question if there are any more beautiful, or more deserving of general cultivation than the old L. candidum, the white Lily to be met with in most gardens, yet not by any means always in the condition it might or should be, so far as flowering is concerned. One of the chief causes of its sometimes failing to bloom is that in the rearrangement of beds and borders that from time to time takes place it gets moved at the wrong season. Such work amongst herbaceous plants is usually carried out late in the autumn, or early in spring, disturbance at either of which periods is generally fatal to the production

by this Lily of any flowers the summer following, as both top and root growth are then in progress. This, like all other Lilies, should never be moved except when quite at rest, a condition which it does not long remain in, as the roots soon begin to move after the stems have died down after flowering, which state they have now just arrived at. Where new plantations have to be made, or where the clumps have got too large, so that the soil within reach of their roots is insufficient to keep them in full vigour, or where the intruding roots of trees or shrubs are injuring them so as to necessitate the bulbs being taken up, the work should be seen to at once; by which means they may be expected to flower next summer in a way that will show little of the effects of having been disturbed. The same holds good with other kinds of Lilies grown in the open ground; as soon as the tops die down, wherever any disturbance of the bulbs is necessary, it should be carried out immediately, as delay often ends in an absence of flowers the season following.

—— FREESIA "GIARDINO CORSI-SALVIATI."—Dr. RAGIONERI, in a recent number of the *Bulletin* of the Royal Tuscan Horticultural Society, describes a new hybrid Freesia between F. refracta alba and F. Leichtlini. The inflorescence is horizontally bent, the flowers large, funnel-shaped, pale primrose-yellow, with an orange blotch in the throat. Fertilisation was effected reciprocally between the two species, and with the same result.

—— SALVIA DISCOLOR, KUNTH. — Under this name Sir JOSEPH HOOKER describes the plant figured and described by Mr. HEMSLEY in our columns as S. mexicana var. minor (1883, p. 341, fig. 49), and which was originally exhibited by Messrs. CANNELL as S. nigricans. It is a native of the Peruvian Andes, and is remarkable for the almost black colour of the flowers.

—— RHODODENDRON CURTISII.—The *Florist* for the present month gives a coloured figure of this beautiful Sumatran species, introduced by CURTIS to Messrs. VEITCH'S establishment. It grows on the mountains of Sumatra, at a height of 2000 feet, is of dwarf habit, and has whorls of narrow lanceolate leaves, with terminal trusses of 4—7 brilliant scarlet-crimson funnel-shaped flowers each about 1 inch long. It will prove a most valuable introduction, not only as it is, but as the probable progenitor of a new race of hybrid Rhododendrons. It is figured in the *Botanical Magazine*, t. 6769, as R. multicolor. As the two names are published simultaneously there will be some doubt as to which should be retained.

—— "CORRESPONDANCE BOTANIQUE."—Prof. E. MORREN has published the tenth edition of his Directory of botanists, scientific and horticultural establishments throughout the world. This list, which is indispensable to all who have relations with foreign botanic gardens and museums, is published by the compiler at 1, La Boverie, Liège, Belgium.

—— EQUINOCTIAL GALES.—According to Mr. R. H. SCOTT, the occurrence as a regular thing of violent storms about the time of the equinoxes is as much a myth as the alleged influence of the moon on the weather. Statistical records show that gales are of no greater frequency at the equinoxes than at any other time, but are all but exclusively confined to the winter half year.

—— PYRAMIDAL CELOSIAS.—The beautiful strain of the crimson-flowered pyramidal Celosia which is now seen in such fine form at Syon, is one that has flourished there for some years, and has been kept perfectly true. As an annual for pot culture it is unrivalled, for its feathered points are so elegant and so regular, and so richly coloured. The side shoots are invaluable for cutting, indeed, a few of the rich crimson plumes standing up from out of a base of white flowers would give a singularly charming effect. We have seen the Celosia in fine form at Blenheim, Maiden Erleigh, and other places; but it is such a shy seeder that it can never become abundant.

—— ACTION ON PLANTS OF RAIN, DEW, AND ARTIFICIAL WATERING.—From numerous experiments by Professor J. WIESSNER (*Bied. Centr.* 1883, p. 471) it has been found that the moistened leaves of plants transpire much more freely than when they are in a dry condition; therefore a larger quantity of water is then withdrawn from the soil by the roots of the growing plants. Consequently if there is plenty of moisture in the ground the plants flourish, but if otherwise they droop and languish. From this fact the Professor argues that plants should not be watered on the leaf unless the soil is likewise moist. The small amount of extra transpiration induced by dew he thinks can do no harm, as it is almost certain that the ground will at the same time be sufficiently moist to supply to the growing plants the requisite amount of water. The action of rain is proved to be by far the most beneficial to the plant, as by its aid the supply of plant food becomes the most rapid.

—— CLERODENDRON MACROSIPHON.—The subject of this note is altogether different in general appearance to those older and more popular sorts usually seen in cultivation. It was first flowered at Kew in 1882, and does not seem to exceed 18 inches in height. The leaves are obversely lanceolate, and slightly but coarsely toothed, covering the twiggy erect shoots, that terminate in clusters of white flowers. The tube is remarkably long, as the specific name implies, and slender, bearing a nearly horizontal limb, beyond which the long purple style and filaments protrude. As the plant gets older it will doubtless flower freely if a little attention be paid to its natural habits and requirements. Being a native of the east coast of Africa, near Zanzibar, it requires stove temperature. A figure of it appeared lately in the *Botanical Magazine*, t. 6695, and a flowering specimen may be seen in the Begonia stove at Kew.

—— BESCHORNERA DECOSTERIANA (BAKER, in *Bot. Mag.*, t. 6738, August, 1884).—A Mexican Amaryllid, with leaves in tufts, each about 2—2½ feet, glabrous, fleshy, oblanceolate, narrow, acute, dilated at the base; flowers numerous, in erect panicles; branches pendulous; perianth 1½ inch long, tubular, campanulate, greenish flushed with red.

—— ARDISIA OLIVERI.—Despite the number of Ardisias known to science, a goodly number of which have been introduced to British gardens at one time or other, they at present are poorly represented in private collections, and what few are cultivated are grown for their coloured berries. This one is an exception, and if granted room to develope itself in a stove or warm conservatory would assuredly reward the grower. The flowers are comparatively large, of a rosy-purple and white colour, and produced at the end of the branches in huge panicles. The knife should be sparingly used, except to check any long straggling shoot. A flowering plant in the Palm-house at Kew is a conspicuous object amongst other flowering plants. A figure and description of the species is given in the *Gardeners' Chronicle*, vol. viii., n. s., fig. 132, and a coloured plate appeared later on in the *Botanical Magazine*, t. 6357.

—— HOTEL WINTER GARDEN.—A novel and desirable feature is about to be introduced by the South-Eastern Railway Company, in connection with the Pavilion Hotel, Folkestone. We understand they are about to erect a large Winter Garden and Promenade adjoining and having a direct entrance from the hotel, so that the very numerous visitors who make use of the establishment may have an agreeable promenade and lounge in wet or inclement weather. In winter the building will be warmed by means of hot-water pipes to a genial temperature only, the idea being, not to make a hot-house for tropical vegetation, but merely a sheltered promenade and rendezvous for the residents of the hotel. The building will be about 160 feet long by 50 feet wide, and will be laid out in an ornamental and artistic manner, with paths and seats, and with pleasing plants and vegetation such as require a moderate temperature only. The idea seems to us to be a good one, and it cannot fail to prove a great boon and attraction to the general public, while to invalids or delicate persons it will be invaluable. The South-Eastern Company are to be congratulated upon their enterprize in taking the initiative, and we heartily wish them the success they deserve. The designs of Messrs. J. WEEKS & Co., the well known horticultural engineers, of Chelsea, have been selected and they have received orders to carry out the work. If those gentlemen were also consulted as to some means of neutralising the effect of the banging of doors in the long corridors, it would also be beneficial to the occupants of rooms in that well conducted establishment.

—— GLEICHENIAS AND TODEAS.—Those who had an opportunity of seeing the Manchester Whitweek shows cannot fail to have noticed the extraordinary specimens of Gleichenias exhibited by Mr. PAUL, gardener to S. SCHLOSS, Esq., Bowdon. They are grown along with some tree and other species in a good-sized span-roofed house, each plant standing well up to the glass; an intermediate temperature is kept up, and no more shade used than is requisite to keep the sun from injuring them. They are potted in a mixture of peat and loam, and the atmosphere is drier than most Ferns are generally subjected to. The following are amongst the most remarkable in the collection:—G. speluncæ, 8½ feet through; G. rupestris, 8 feet; G. r. glaucescens, 8½ feet; G. Mendeli, 8 feet; G. flabellata, 8 feet. They run about 5 feet in height from the rims of the pots, which are half covered by their fronds; they are as dense and green as a bush of tree Box. At the north side of one of the houses here, between two young deciduous trees, the branches of which overhang them, are a couple of specimens of Todea superba and one of T. pellucida, thriving beautifully under exceptional conditions. A square hole was dug in the ground, in size such as to admit of being covered with two ordinary frame lights; in this the plants are stood, with their tops below the level of the ground. In the winter the lights are kept close over them, but as soon as there is no danger from frost they are taken off altogether. Thus exposed to the air, but well sheltered, so that little wind can reach them, they grow splendidly, the fronds being only very little shorter than if the plants were confined. Plenty of water is given to the roots, and the earth around them will naturally keep the air a little more moist and cool than in an ordinary pit or frame.

—— EARLY CROPS OF PEAS.—Dr. STURTEVANT, of the New York Experiment Station, has, we learn from VICK'S *Monthly*, been testing methods to obtain early crops of Peas. The methods adopted relate to the treatment and the selection of the seed:—

"On March 21 a few American Wonder Peas were placed to sprout in a box of moist sand in the greenhouse. Germination soon occurred, and it was soon evident that we had commenced operations too early for transferring the seed to the soil, hence when the radicle was about an inch long the box containing the seed was removed to the cellar in order to check further development. On April 14 a row was planted in the garden of these Peas, selecting the most advanced, and at the same time a second row was planted with unsprouted seed for comparison, the seed of each row taken from the same seed package. The sprouted seed vegetated April 25, the unsprouted April 28. The first bloom appeared on the first row on May 26, and on the second row May 31. On June 10 twenty-five pods were of edible size on the plants from the sprouted Peas, and it was not until June 18 that an equal number were of edible size on the plants from the unsprouted seed. This process of planting hence appears to have given us a gain of eight days in the maturing of the crop, and when it is considered how little trouble this sprouting necessitates, it seems proper to recommend this system to the amateur, and to call the attention of the market grower to the possibility that the extra labour required may be offset by the resulting earliness."

In the tests for the earliest variety no conclusion has been reached after three years' trial with nine kinds of early Peas. Earliest of All, Kentish Invicta, Perry's Extra Early, Carter's First Crop, Daniel O'Rourke, Early Alpha, American Wonder, Blue Peter, Carter's Premium Gem, are so nearly alike in time of production that it is impossible to decide one or more of them to be superior to the others in this respect. Earliness is affected by the date of planting, or, in other words, the temperature or climate. A variety that in 1882 "was fit for the table in fifty-four days from the early planting, in 1883 required sixty-one days for the early planted and forty-nine days for the later planted." The same variety, this year, required fifty-four days for the early planted.

—— TACHIADENUS CARINATUS.—In this we have the type of a small group of the Gentian family peculiar to the tropical parts of the Old World. Beautiful as are the European species of Gentianworts, they are even surpassed in fineness by their tropical relations, as may be evidenced by the species of Exacum and the plant under notice. The genus itself is confined to Madagascar, and only numbers

five species. T. carinatus is figured in the *Botanical Magazine*, t. 5094, and although introduced as long ago as 1858, has not been disseminated as its merits deserve. Nice flowering specimens may be seen in the Begonia-house at Kew. The flowers have a long white tube, with an intensely violet limb verging on purple. It flowers freely in a small state from the ends of the branches, and is so neat habited a plant that any one possessed of a stove should grow it.

—— Berberis congestifolia (Gay) var. hakeoides (Hook. fil., in *Bot. Mag.*, August, t. 6770).—A very singular and striking hardy Chilian shrub, with alternate coriaceous, orbicular, deeply laciniate leaves, and dense tufts of yellow flowers. It was introduced by Pearce from Chili to Messrs. Veitch's nurseries.

—— Syndicate of Belgian Horticulturists.—The monthly meeting was held on the 11th ult. in the rooms of the Royal Society of Agriculture and Botany of Ghent, when a number of beautiful plants, both new and rare, and well grown, were brought forward for the opinions of the judges. These were MM. Ambroise Verschaffelt, A. Peeters, L. de Smet, A. Rosseel, C. Spae, and François Desbois, under the presidency of Mons. A. Verschaffelt. The following Certificates of Merit were awarded:—MM. Auguste Van Geert, for Sarracenia Jollyana; A. d'Haene, for Croton Inimitable; Ed. Pynaert, for Begonia manicata aurea; F. Desbois & Co., for Begonia rubella. Cultural Commendations were given for the following beautiful flowers:—MM. Vandriessche-Leys, of Ghent, for Dendrobium thyrsiflorum grandiflorum; F. J. Spae, for Croton Queen Victoria; Em. de Cock, of Ghent, for Ceroxylon ferrugineum. The judges in this section were MM. A. Van Geert, A. d'Haene, C. Spae, Vervaet & Co., Desmet, Duvivier, and MM. Desbois & Co. The institution of a horticultural exchange is likely to prove of great advantage to Belgian commercial horticulture.

—— Phyllocalyx edulis.—The *Revue Horticole* publishes a figure of this plant which has the form and colour of a small Apricot, but deeply ribbed and with the flavour of Pine-apple. It is a Brazilian Myrtaceous shrub, with hairy branches, sub-sessile oblong-lanceolate leaves, and white tetramerous flowers. It is an ornamental warm greenhouse plant, which bears fruit in a young state, and is adapted for culture along the Mediterranean coast, or in some of our colonies. M. André gives a detailed description of the plant in the periodical above-named.

—— Brighton and Sussex Horticultural Society.—The grand autumn show of the above Society, now in its thirty-second season, is appointed for September 3 and 4. A most liberal schedule is provided both for plants and cut flowers as well as fruit, no less than four silver cups being offered, besides substantial money prizes. A cup, value £10, is to be awarded for the best collection of Grapes, six varieties, three bunches of each, with 2d and 3d prizes as well. Another cup, also of the same value, is offered for twelve dishes of fruit. The inducements held forth by the acting committee should be amply rewarded by a splendid show, backed up as they are by the liberality of the London and Brighton Railway Company, who for many years past have granted free transit for all exhibits to and from the show from all parts of their line. Schedules can be obtained from Mr. Carpenter, the Secretary, 96, St. James's Street, Brighton, who, in conjunction with Mr. Chilmaid, the Hon. Superintendent, has been indefatigable in his efforts to render this exhibition worthy of any of its predecessors.

—— English grown Medicinal Rhubarb.—At the recent meeting of the British Pharmaceutical Conference, as reported in the *Pharmaceutical Journal*, Mr. W. Elborne read a paper on the cultivation of medicinal Rhubarb. It would appear that English-grown "Rhubarb," from Rheum officinale, the plant which was first brought to Europe about sixteen years ago (*Pharm. Journ.* [3], iii., 301), has now taken its place side by side in commerce with that from R. rhaponticum, from which it may be distinguished upon fracture by the comparatively black colour of the veins imbedded in a white parenchymatous tissue. The excessive development of this tissue, observed in the earlier experimental samples of this variety by Mr. Holmes (*Pharm. Journ.* [3], vii., 301), was no doubt due to "high cultivation," and it has been found that with a slower growth the roots become more dense, and when prepared are of a richer and darker colour. One of the reports was devoted to some historical, botanical, and microscopical notes on English-grown Rhubarb, and the methods of its preparation, and the other gave the results of a series of analyses showing to a certain extent the constituents of samples of English "officinale" and "rhaponticum," East Indian and the old-fashioned Russian Rhubarbs. It was mentioned that the production of English Rhubarb now amounts to twelve thousand pounds weight yearly.

—— Bishop Auckland Horticultural Society.—After an interval of five years the annual exhibition of this Society was held in the old place—the grounds of Auckland Palace, the residence of the Bishop of Durham—on the 8th inst. A very fine exhibition resulted, the show of Roses having been very extensive and remarkably fine; the weather was all that could be desired, and the attendance was very large. About 12,000 persons paid for admission, and as the sum of £200 had been previously raised as subscriptions, there is, after paying all expenses, a handsome available surplus towards the expenses of an exhibition in 1885. The principal prize-takers were Mr. Letts, gardener to the Earl of Zetland; Mr. W. Knight, of Middlesborough; Mr. G. Farndale, of Loftus; and others. One portion of the exhibition consisted of works of art, needlework, and other industrial products. There is now a probability that the old Bishop Auckland show will resume its place among the annual fixtures of the year, though not a few local shows have sprung up in the immediate district consequent upon the temporary abandonment of the Auckland exhibition, that do to some extent rival it; but there is no doubt room for all.

—— Horticultural Education. — There is some hope that the Health Exhibition will be productive of more direct practical results than some of its predecessors. The educational department, for instance, affords proof of what we have so often stated as to the superiority of many nations over ourselves in the matter of technical education. We have only recently alluded to the schools of horticulture, in connection with which we may here give from the *Revue Horticole* the programme of the French School of Horticulture at Versailles:—

1. Culture of fruit trees, fruit forcing, pomology.
2. Culture of forest and ornamental trees; nursery work.
3. Kitchen garden culture in all departments.
4. Flower culture, open air and under glass.
5. Elementary and descriptive botany.
6. Principles of landscape gardening and garden architecture.
7. Elements of physics, meteorology, chemistry, geology, and mineralogy in relation to horticulture.
8. Elements of zoology and entomology in relation to horticulture and arboriculture.
9. Arithmetic, geometry, mensuration, plan drawing.
10. Drawing.
11. French language and accounts.
12. English language.
13. Drill.

The practical instruction includes all garden operations, so that the pupils have to execute all the work of the garden.

—— Tritoma grandis. — We are indebted to Mr. P. Barr, of Covent Garden, for some fine spikes of these splendid autumn flowers. The inflorescence was of unusual massiveness, the upper half bright scarlet, changing to yellow as the individual blossoms attain age, so that there are always two quite distinct colours present. We are informed the height of the flower-stalks reaches 5 feet.

—— Miconia magnifica. — No plant more deserves its specific name than this one, for the great bronzy-looking leaves are truly magnificent. They are a deep, somewhat glaucous green above, and deep violet-purple underneath, with three strong nerves dividing them longitudinally, and two smaller submarginal ones. These are connected again by a series of transverse parallel veins on the underside, which add very materially to the handsome appearance of the foliage. The plant is generally grown in gardens under the name of Cyanophyllum, but the lines of demarcation or limiting characters of genera are so finely drawn by some botanists that it comes to be a matter of hair-splitting. According to the *Genera Plantarum*, our standard authority, Cyanophyllum, together with a number of other genera, are all included under Miconia, which now contains the marvellous number of 300 species, all natives of tropical America. The present one may be seen in the stove at Kew.

—— Newcastle Public Parks.—Now that public interest is felt in the northern city by reason of the visit of the Prince of Wales to open the park presented to the town by Sir William Armstrong, it may be well to remind the reader that a full account of the public parks of Newcastle was given in our columns, vol. xx., 1883, p. 590. A description and illustration of Sir William Armstrong's gardens at Craigside, Rothbury, was given at p. 437 of our volume for 1882. We cannot but feel satisfaction a the interest now excited in the question of providing open spaces in our overcrowded towns. We attach special importance from a sanitary point of view to the establishment of numerous small recreation grounds in the midst of the population. Most of our great towns are now, as we have had occasion to show, fairly well provided with parks on the outskirts. What is wanted is more open space in the heart of the towns.

—— Publications Received.—*Practical Taxidermy; a Manual of Instruction to the Amateur in Collecting, Preserving, and Setting-up Natural History Specimens of All Kinds.* By Montagu Browne, F.Z.S., &c., Curator, Town Museum, Leicester. London: L. Upcott Gill, 170, Strand, W.C.—*Forestry of Northern Russia.* By J. C. Brown, LL.D. Oliver & Boyd, Edinburgh.—*Modern Window Gardening.* By Samuel Wood. London: Houlston & Sons, Paternoster Square.—*London Water; a Review of the Present Condition and Suggested Improvements of the Metropolitan Water Supply.* By A. de C. Scott. London: Chapman & Hall.—*Prairie Experiences in Handling Cattle and Sheep.* By Major W. Shepherd, R.E. London: Chapman & Hall.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 16, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been unsettled and showery in the extreme W. and N., but generally fine and bright over England. Severe thunderstorms, however, were experienced in many parts of the kingdom during the earlier part of the week—notably in the N. on the 12th, as well as in the E. and S.E. of England. The temperature, though generally lower than during last week, has again been above the mean, the exces varying from 1° in "England, S.W.," to 4° in "Scotland, E." and the "Midland Counties," and 5° in "England, N.E." and "England, E." The highest of the daily maxima (which were recorded on the 17th in England, and on various dates in Ireland and Scotland) ranged from 70° in "Scotland, N.," to between 83° and 85° over the greater part of England. The lowest of the minima were registered on the 14th and 15th, and varied between 43° and 50° over England, to 48° in the east and north of Scotland and the south of Ireland, and to 56° in the "Channel Islands." The rainfall has been more than the mean in the north and east of Scotland and in "Ireland, N.," but less elsewhere. Bright sunshine has been less prevalent than during last week, the percentages of possible duration varying from 19 in "Scotland, N.," and 20 in Ireland, to 58 in "England, S.," and to 70 in the "Channel Islands." Depressions observed.—Barometric pressure has been highest over the Continent, and lowest over the Atlantic; depressions have travelled northwards and north-eastwards outside our western coasts, and a few shallow local disturbances have appeared in the east. S. to S.W. winds have consequently been general in the southern and south-western parts of the kingdom, and south-easterly to south-westerly breezes in the north; in force they have been light in the east and south, but have occasionally increased to a fresh or strong breeze in the west and north.

—— Gardening Appointments. — Mr. W. Polley, for the last nine years at Fairholme, Oatlands Park, Weybridge, Surrey, has been appointed Gardener to A. Wallace Rooke, Esq., Ryde's Hill House, Guildford, Surrey.

RYDE, ISLE OF WIGHT.

Go where one may in these days of rapid railway travelling a continuous stream of visitors and pleasure-seekers all through the summer months crowds the main thoroughfares of every place of any importance whatever. It is needless to say all are bent on their particular form of amusement, but the mass apparently have no special aim. Arrived at Portsmouth the plant collector will soon find that the bare commons and gravelly sea-beach in the immediate neighbourhood of the town offer no attractions except he desire to linger amidst the relics that speak of British victories by sea or land, or gaze on Nelson's flagship, the *Victory*, along with others now safely riding at anchor, and guarded by low-decked ironclads of modern times.

The wooded slopes on the northern side of the Isle of Wight, as they appear in the distance across the waters of Spithead, are extremely inviting, and a landing may be effected there by one of the steamers that ply between the more fashionable seaports and the mainland. Choosing Ryde as a landing-place for a ramble the eye is delighted with the buildings as they appear one above another like so many terraces thicky interspersed with trees, amongst which Laurus nobilis and Juniperus virginiana have attained noble dimensions. From this point the naked eye can discern on a clear day the Portsdown Hills on the mainland, with their line of fortifications like grim monitors guarding the town of Portsmouth itself, although 5 miles behind it.

Time glides away rapidly and a descent must be made on the flora of the island before the steamer departs on the return journey. It is distinctly maritime in character, although many things occur that are not essentially seaside plants. To the westward of Ryde, where the slopes are covered with trees and copsewood almost to the water's edge, numerous interesting members of the British flora find a suitable home. Hypericum calycinum, although doubtfully indigenous, is considered to be truly naturalised, and here competes with other plants of similar habit for existence. Hypericum androsæmum, now in fruit, is more abundant, and remarkable on account of the strong odour it exhales even in a dried state. Chlora perfoliata and Erythræa centaurium, two allied plants, are pretty frequent, but scattered about as if unsocial in habit. In the more shady parts Epipactis latifolia grows more or less luxuriantly. It is a very variable Orchid, a fact testified by the numerous synonyms applied to it by different authors, and the several forms that now rank as sub-species and again as species. Strictly speaking, Eupatorium cannabinum is not a maritime plant, but seems greatly to prefer growing near the sea from its frequency in that neighbourhood, and here it is both abundant and luxuriant. The flowerheads are of various shades of purple, some so dark as to merit a place in any herbaceous border. Helminthia echioides is a curious looking Composite, and by no means common. On the moist sand near high-water mark, Glaux maritima and Arenaria peploides, two very curious plants in their way, spread over the pebbles with great freedom. The former, a member of the Primrose order, is remarkable by the absence of a corolla; and both, by their creeping stems and fleshy leaves, show by their departure from the type, how plants become modified to adapt themselves to their surroundings. Amongst the Chenopods, Atriplex littoralis and Beta maritima take their proper position on the shore; and the latter, although a weedy-looking procumbent plant, is interesting because considered the origin of the Beet and Mangel Wurzel. The wild Celery, Apium graveolens, differs but little from the cultivated forms, except in the size and properties perhaps. Tamarix gallica forms a beautiful spreading bush, bearing superficially a great resemblance to some of the finer Cypresses and Junipers. It is doubtfully indigenous however, and confined to the southern coasts of England. Saponaria officinalis is another doubtful native, but showy as a garden plant, and interesting economically, as the herbage contains a quantity of saponaceous matter. The great Horsetail, Equisetum maximum, affects moist places amongst the low bushes, and its fluted stems, attaining a height of 3 to 5 feet, are gracefully clothed with myriads of whorled slender branches.

True to their old habitats, Solidago virgaurea and Serratula tinctoria decorate the dry, bushy places, or fringe the margin of a projecting rocky bank. The former affords an instance of how the old herbalists' name of "Virga aurea" (the Golden Rod) may be adapted to suit the modern and more scientific classification. Inula Conyza, although inferior in point of beauty to its more ubiquitous congener, I. dysenterica is noticeable as a different habited, rarer plant, frequenting dry banks, not moist situations. Iris fœtidissima seems rather plentifully scattered about in bushy and shady places, under the hedges, or wherever the nature of the ground is suitable for it to obtain a footing. The herbage when bruised smells remarkably like that of Cyphomandra betacea, known in some gardens as the Tree Tomato. How any one could ever have named it the "Roast Beef Plant" it would be difficult to say. Daphne laureola is an uncommon plant, and interesting not only botanically, but recommendable as a subject for the planter. The low, bushy habit and evergreen leaves are sufficient to attract notice, independently of its black-berried fruit.

Were sufficient time at disposal for an extensive and prolonged ramble in this neighbourhood there is little doubt that many more interesting plants would be found; but the foregoing are sufficient to show the nature of the vegetation, and the suitability of the climate and position for the requirements of a large portion of the British flora. *X.*

USEFUL HEAT.

MANY years ago Prof. Alphonse de Candolle showed that a certain total amount of temperature was needed for plant growth, so much for leaf growth, so much more for seed-ripening, and so on; and this amount or sum of temperature is known to vary for each crop, and provided the plant obtains it, it matters relatively little whether the time be long or short. Plants do not, as a general rule, show signs of active vegetation till the temperature rises above 6° C. = 42° F. The method of calculating the sums of temperature required for plant-growth has been formulated by General Strachey. A certain unit of temperature is adopted to supply a standard for calculation, the unit being one degree continued for the unit of time, one hour or one day as the case may be. The unit of time adopted by Mr. Scott, of the Meteorological Office, is one day, and the unit of useful temperature is called a "day-degree." A "day-degree" then signifies 1° F. in excess or defect, above or below 42 F. continued for twenty-four hours, or for any other number of degrees for an inversely proportional number of hours. Thus, if we were dealing with daily means, an average daily temperature of 62° F. would mean twenty "day-degrees" of temperature for that day, starting from the assumed base line of 42° F., below which the temperature would be ineffective. The mean temperature is taken to be the mean between the maximum and minimum temperature of twenty-four hours, and this mean is nearly the average for the whole day. The maximum and minimum are both above 42° in summer, or below 42° F. in winter, and sometimes one is above 42°, the other below; when above 42° all the accumulated temperature is to the good or positive, when below it is negative, or when partly above partly below one part of the effective temperature for the day is positive, the other negative. From hourly observations made at Kew Observatory, General Strachey has ascertained the magnitude of the coefficient by which the difference between either of these extreme temperatures and the base temperature of 42° F. should be multiplied, in order to obtain the value of the temperatures in excess or defect of 42° F., expressed in day-degrees, and he found this for a weekly period was 0°.4. Hence, if the mean of the day is above 42° F., we multiply the difference between the minimum and 42° F. by 0°.4 (four-tenths), and call this the negative effective temperature. To find the positive effective temperature we subtract from the difference between the mean for the day and 42° F. the negative effective temperature just determined. If the mean of the day is below 42° F. the proceeding is similar, but we first ascertain the positive effective temperature, and subtract that from the difference between 42° F. and the mean, thus obtaining the negative effective temperature. The total accumulated temperature up to July 1 may be made up in very different ways; thus in 1881 the winter was severe, and its accumulated temperature was made up in spring and early summer. In the present year we had practically no frost, but unusually cold weather at Easter and at the end of May. It will be interesting to learn how far a correspondence between the character of the several crops and the accumulated temperature of the year can be established.

LOUGHCREW.

PLEASANTLY situate in the midst of beautiful and undulating country, about 3 miles from Oldcastle, in County Meath, stands Loughcrew, the fine residence of J. L. Naper, Esq. The mansion, which is oblong in form and built of massive cut stone, is an imposing structure of substantial appearance.

The flower garden is on the east side of the mansion, and now presents a very gay appearance with the usual varieties of bedding-out plants, Alternantheras of sorts being remarkably well coloured and very effective, as also were two good-sized beds of Œnothera Youngii, pegged down, and literally covered with yellow flowers. Two large beds of tuberous-rooted Begonias (mostly scarlet) are also very fine; the plants are dwarf and blooming freely. Throughout the entire arrangement of bedding the colours have been judiciously studied so as to harmonise with each other. Leaving this flower garden we proceed westward to the kitchen garden, which is half a mile from the mansion, but before entering we pass through a pleasure ground, in which is a very large herbaceous border, and here are many fine things in bloom. Noticeable as being in flower were Phygelius capensis, Œnothera macrocarpa, Œ. Frazeri, Œ. Youngii, Œ. missouriensis, Œ. taraxacifolia, Spiræa filipendula plena, S. venusta, Phlox in variety, Veronicas, Coreopsis lanceolata, C. præcox, Harpalium rigidum, Achillea millefolia rosea, Patrina scabiosifolia, Erigerons, Geums, and Geraniums in var., Armerias, Sedums, Statices (many varieties), Salvias, Chelone barbata, Physostegia speciosa, Bocconia cordata, and many others, effectively arranged, and presenting a very gay appearance. Here is also to be seen (on some rockwork and by the sides of a pond) a collection of hardy Ferns in much variety, which includes some immense specimens of the native Osmunda regalis, some 5 or 6 feet across, and about the same in height.

The kitchen garden is about 4 acres in extent. The soil is heavy; consequently, owing to the dry season, things have done exceedingly well—Peas in particular—while in light soils they are almost a failure. Of hardy fruits, Pears, Apples, and Plums were a light crop; the Apricots were good, as were also the Cherries; Gooseberries, Currants, &c., were bearing heavily large-sized fruit.

A Cherry tree (Morello) against the north wall is remarkable for its large size, covering a space of 50 feet by 14 feet, and carrying a good crop of fruit.

The houses, about sixteen in number, are all together, and one above the other, terrace-like, commencing with the high lean-to's, and finishing with small spans, pits, &c. No. 1 is a Peach-case, unheated, 100 feet long, the construction of which is somewhat amusing to the modern practitioner. For the admission of top air the garden wall, some 14 feet high, has to be mounted, and a series of trap-doors opened, and for closing or reducing it the same performance is again gone through. The trees in this house generally carry a good crop, but this year many of the varieties are almost a failure; the only kinds carrying anything like a fair load are Bellegarde and Salwey Peaches, and Elruge Nectarine, although a good many more varieties are planted here.

A couple of Fig trees in the same house (Brunswick and Brown Turkey) are now commencing to ripen a fair crop of fruit. In front of this house is a border of seedling Carnations, remarkable for their high quality and freedom of bloom.

Next in order are the vineries, four in number; the early Grapes were ripe in May, and are mostly Black Hamburgh; a few bunches yet remain, of good quality. This house was planted by Mr. Taylor, and has proved highly satisfactory.

Vinery No. 2 is planted with a mixed lot of Black Hamburgh, Lady Downe's, and Muscat Hamburgh; and in No. 3 is also a heterogeneous collection of Alicante, Barbarossa, &c., all carrying fair crops of moderate-sized bunches. No. 4 is a Muscat-house, in which the Grapes are just finishing, and are very fair bunches. A small fernery at the back of this vinery is filled with a very healthy lot of plants. Adiantum Farleyense and A. Veitchii are represented by nice specimens; other varieties are mostly small plants suitable for decorative purposes in the mansion. The greenhouse is divided into three divisions, each being filled with flowering plants in variety, viz., Statices, Petunias, Pelargoniums, Fuchsias, Begonias (in fine vars.), Rochea falcata, Impatiens Sultani, Coleus, &c., all very tastefully arranged; while hang-

ing from the roof are Tacsonias, Habrothamnus, Tea Roses, Cantua dependens, and other things.

A few Begonias in baskets, with foliage in the way of B. Pearcei, but with bronzy-yellow flowers 2 or 3 inches across, were very handsome. The plant stoves and intermediate houses are furnished with such plants as are usually met with, and in one of them are some fine healthy Eucharis amazonica. Melons and Cucumbers are in adjoining structures, and were found to be bearing excellent crops of fruit, High Cross Hybrid Melon being the one that was grown. The frames are at present filled with Poinsettias, Azaleas, Deutzias, &c., for use in the winter, cut flowers being always much asked for.

In conclusion, it must be remarked that in each and every department of this establishment neatness and cleanliness are the prevailing features, and Mr. Taylor (the head gardener), who has had charge here for seven years, deserves much praise for the many improvements and alterations carried out by him during that time. *W. J. Ireland.*

FRUIT NOTES.

Fruit Crops at Great Gearies. — The fruit prospects promised well in March this year. During the time Apricots were in flower the weather was so favourable that the fruit set better than we have had it for many years. Cherries, Plums, and Peaches on walls, also set well, although a few of them were late, and suffered from the exceptionally cold frosty weather which set in after the Apricots were well set. We have therefore an exceptionally good crop of Apricots, which have ripened well. Frogmore Early, of larger size than usual, was gathered the last week in July; we are now (August 14) gathering the Moor Park variety. Cherries were a good crop on the walls, but they failed in some instances as standards, although there was as usual a good crop of the Morellos. Plums on the walls are a good crop; Victoria and Kirke's are two useful kinds that can always be depended upon; they set a full crop on the walls. None of our walls are protected in any way. Pears are a good crop in the open ground, but the Jargonelles ripened and were gathered during the excessive heat, so that a good crop was spoiled by the heat—an unusual occurrence. The fruit decayed at the centre, even when it was hard. Beurré Giffard is a good useful early variety, but it does not set its fruit quite so freely as the Jargonelle. There are full crops of Williams' Bon Chrétien, Beurré d'Amanlis, and Louise Bonne of Jersey. Even Doyenné du Comice and Beurré Superfin, which are not usually free-bearing, have good crops. Apples escaped the frosty winds, the blossoms not being open until the weather changed, and all the kinds that usually bear freely have good crops; but the hot dry weather which has caused the fruit to ripen well has also been favourable to the production and free development of the Apple-boring maggots, and quantities of the best fruit are dropping off; the best plan is to gather all the fruit as it falls, and pick off any that is attacked on the trees, and have it used in the kitchen or destroyed. The name of this troublesome pest is the Codling moth, Carpocapsa pomonella. The grub leaves the fruit and spins a cocoon on the stem of the tree, and changes into a chrysalis, from which the moth emerges in less than a week, and again deposits its eggs in the Apples. All our small fruits this year were abundant, and of good quality, with the exception of Strawberries, which were plentiful enough, but of poor quality. The leaves were early attacked by red-spider, and this pest debilitated the plants so much that the fruit was small and imperfectly ripened. A good crop might have been obtained if the leaves had been cleansed from red-spider, the plants mulched with decayed manure, and copiously watered. *J. Douglas, Great Gearies, Ilford, Essex.*

The Imperial Lemon.—The *Florist and Pomologist* gives a coloured figure of this fine Lemon, which fruits in the open air at Torquay, but elsewhere requires the protection of glass. The foliage is bold, ovate-oblong; the fruits nearly globular, the size of a Calville Blanche Apple of fine flavour and perfume.

The Raby Castle Red Currant. — This fine fruit, valuable for its size, brilliant colour, and also as affording a succession to the early varieties, is frequently met with as a market fruit. It bears abundantly and on long stalks, so that the purchaser has not to pay so much for these as for the short-stalked kinds. It is rather tart, and has larger seeds than the common red. It is a capital kind for keeping till October, protected on a north aspect.

DISEASES OF MUSHROOMS.

In the *Gardeners' Chronicle* for June 14 last, p. 777, I recorded the occurrence of Agaricus gloiocephalus, Fr., as found on shoddy near Huddersfield. Being a rare and noble species, and belonging to a remarkable subgenus (Volvaria), I naturally felt some curiosity as to the nature of the hymenium, or



Fig. 49.—Disease of Agaricus: Fusisporium mucophytum.

spore-bearing surface of the gills. On placing some fragments of this surface under the microscope for examination, we lighted on a handsome brown spored Fusisporium which seems to have remained hitherto unobserved, and which we have named F. mucophytum. It is remarkable for the colour of the unusually large spores, and the extraordinary number of septa, or joints, with which most of them are furnished. Every mycologist knows that the supposed different species of fungi are often so much alike that it requires the keenest insight, and sometimes even imagination, to

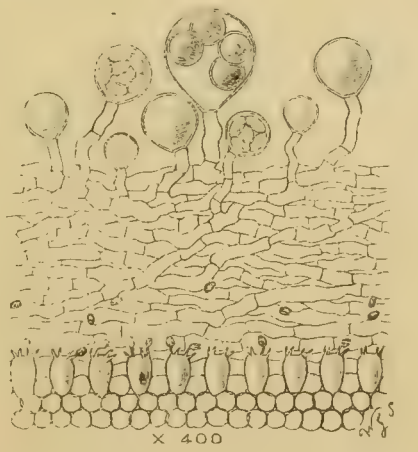


Fig. 50.—Disease of Mushroom: Saprolegnia mucophaga.

discern any difference between one and the other; but in the species illustrated in fig. 49 this is by no means the case. The largest spores are twice as long as the spores belonging to the two species of Fusisporium common on Potatos, F. Solani, Mart., and F. roseolum, Steph., and which cause different forms of disease in Potatos; the spores are also three times as long as spores of the different species of Fusisporium recently described by me on Wheat, Barley, and Rye-grass. The hymenial surface of the gill of Agaricus gloiocephalus, Fr., is shown in section at the base of the illustration at fig. 49, the basidia, or spore-bearers, are seen at B, and a cystidium, probably a male organ, at A. It is remarkable that the Fusisporium is exactly the same in colour with the gills of the Agaric; some young botanists would term this a case of "protective resemblance;" and if the smell reminded one of something else it would doubtless be a case of "mimicry," so much are these two useful terms abused by beginners. The following is a technical description of this fungus :—

Fusisporium mucophytum, *W. Sm.*—Mycelium pallid or colourless, thin, somewhat torulose, forming a thin gelatinous stratum; spores very large, curved, fusiform, 3—8 septate, nucleate, at first colourless, then pale brown or salmon-coloured. On gills of living Agarics.

The fungus was first seen by me on Agaricus gloiocephalus; we have since seen it on the gills of the common bedding Mushroom, Agaricus campestris, L. This fact is remarkable, as the fungus is quite invisible to the unaided eye, it being precisely the same in colour with the gills of the Mushroom. To find the Fusisporium one has to look over the gills with a strong lens and search for small gelatinous spots. The presence of a fungus of this nature may sometimes possibly make the bedding Mushroom unfit for the table, or even poisonous.

The illustration shown in fig. 50 I intended to reserve for a week or two, as my material had been sent to the mounters, and I wished to make further observations before publishing. As the hot weather, in league with some person or persons unknown, has, however, willed otherwise, and the engraving has been published in advance [The two cuts now given were previously published by inadvertence. Ed.], I have only to say that it represents a hitherto undetected parasite on the gills of bedding Mushrooms, and named by me Saprolegnia mucophaga. Every grower of Mushrooms must be acquainted with an obnoxious and destructive thick white mould or mildew which attacks the gills of bedding Mushrooms, and weaves a thick floccose web of mycelium all over them, till at last they become quite obliterated. Instead of the brown or salmon colour being exhibited on the gills the whole under-surface is one woven mass of white felt. I have known this condition of Mushrooms ever since I first noticed fungi, and although I have placed the white substance many hundreds of times under the microscope I have not till lately seen anything like a spore or fruit. Mushrooms in this diseased and probably dangerous state are commonly exposed for sale in Covent Garden Market; such examples may be the cause of many "accidents." Sometimes an obstinate fungus can be coaxed by kindness into exhibiting its true nature. Nutrient solutions or "fluids" are sometimes effectual; a little sugar and water, or (for the lower orders of fungi) expressed juice of horse-dung, or the mysterious compound sold by some publicans under the name of beer, may prove useful; the warm, pleasant air of a drawing-room, a position under a bell-glass, or in the air of a conservatory, will sometimes thaw some obstinate brutes; but kindness has always been thrown away on our white felted mould of Mushrooms; it refused to show itself in its true colours, and both beer and benevolence were thrown away. Amongst my mycological friends not one has been able to draw the Mushroom mould out. The microscope showed a dense mass of stout mycelium full of septa, the septa so strong and well marked that even the youngest and boldest fungologist dared not say he could not see them. After many ineffectual efforts to make the mycelial threads produce fruit, I at last thought the fungus might be a Saprolegnia allied to the fungus of the salmon disease. With this idea in mind I placed some diseased Mushrooms, gills lowermost, in a film of water in a saucer, and placed the examples under a bell-glass. The water started the total-abstaining mycelium into active growth at once, and it speedily produced sporangia with zoospores as illustrated, and after a few days other sporangia, or oogonia, each with four oospores, as shown in the centre of the illustration at the top (fig. 50). This species differs from all other described species in the smallness of its oogonia and oospores. If the readers of this paper will refer to the *Gardeners' Chronicle* for December 22, 1883, p. 781, they will see an illustration and description of a closely allied plant, as found on the side of a silo, and completely investing a fungus named Isaria fuciformis, B. In the *Gardeners' Chronicle* no name was given to the Isaria and silo fungus, but we have named it elsewhere Saprolegnia philomukes. Neither species of Saprolegnia here mentioned, or indeed the Isaria, which was illustrated in the *Gardeners' Chronicle* for March 18, 1882, p. 376, has yet been completely studied. *W. G. Smith.*

STAKE HILL HOUSE, CASTLETON.

Year by year the difficulties which beset the successful cultivation of plants and flowers in the neighbourhood of Manchester actually increase, and with marked rapidity. Stake Hill, so long the congenial home of many subjects, and especially of florists' flowers, is gradually being hedged in by the continuous growth of manufacturing suburbs. Middleton, Heywood, Castleton, Rochdale, Royton, Oldham, and Chadderton, with their hundreds of shafts belching forth smoke in deleterious forms, year after year come nearer to Stake Hill, as if laying siege to it and trusting to time to destroy. Hedgerows, once full of the vigorous life of Hazel, Bramble, and Thorn, are rapidly disappearing; vigorous trees go down before the vomited sulphur compounds, and the grass of the fields appears plague-struck, and yet Nature makes a stubborn fight, and the skill of the florist aids in many ways; but there are periods of parley followed by surrender, and the foe steadily gains the day; and though Mr. Barlow has obtained an estate at Llandudno, away from all such deleterious influences as surround Stake Hill, he yet continues to grow many of his favourite subjects at the place he has dwelt in so long, and which is endeared to him by a long list of floricultural triumphs.

In the pleasure grounds at Stake Hill, the well-kept greensward, trim walks, and nicely filled flower-beds, attest to the careful oversight of the gardener, Mr. H. Pomroy. Rhododendrons are making a fine summer growth, so are most evergreens; the beds of Roses, difficult to keep alive through the trying winter, are very gay, and a bouquet of flowers of rare quality for the locality—for the Rose garden is an open bleak spot—could be gathered. In the flower garden are beds of Stocks, early flowering Chrysanthemums, an excellent double dwarf Nasturtium; of Pentstemons, Horace Vernet, one of the very finest of the red flowered varieties, and other subjects not usually seen in such a place.

Higher up, beyond the spacious bowling green, is a garden of hardy flowers, where many choice subjects find a congenial home despite adverse influences. Here are various choice Campanulas, among them the bold and showy C. Van Houttei; a choice collection of Aquilegias, A. californica hybrida being particularly showy. A bed of truly magnificent Sweet Williams, Pansies and Violas in variety, Antirrhinums, Pinks; the pretty Wood Vetch, Vicia sylvatica, one of the sweetest of British plants, is here; and many other things too numerous to mention. At the north-east end of this garden Mr. Barlow has planted out in a prepared bed his collection of gold-laced Polyanthuses; in addition to George IV., Exile, Louise, Prince Regent, Cheshire Favourite, and other fine old sorts, are his new varieties, Sunrise, Model, John Bright, &c., as well as several species of Primulas, and choice double Primroses. They are all doing well.

On two sides of this garden are to be seen the double vinery, in which are good crops of Grapes, and a low span-roofed house in two divisions, one filled with Tomatos, the other with specimen Pelargoniums, Fuchsias, &c. Here, ranged on one side of the paths, is as fine a lot of Chrysanthemums in pots as we have looked upon this season. Close by is a collection of Hellebores in pots, all fine specimens, in good health, Mr. Barlow having a great liking for Christmas Roses. On a sheltered bank are a fine lot of Davies' and other early flowering Rhododendrons, such as Countess of Sefton, Lady Skelmersdale, Countess of Derby, and others, in large specimens that in a cool-house come into flower in early spring, with Deutzia gracilis, Azalea mollis, and such other things. This house is now occupied by a large collection of Auriculas, show and alpine, also many seedlings of the former, raised from a fine strain; and here are a number of one-year-old plants of Chinese Primroses, some of the best grown plants we have seen for many a day. So backward is Mr. Barlow's collection of Carnations, that in order to have them in bloom by August 12—the date of the National Carnation and Picotee Shows at Manchester—he was obliged to push them on under glass. The collection includes S.F., Dan Godfrey, John Ball, Henry Matthews; R.F., Squire Meynell, James Merryweather, Miss Erskine Wemyss; P.P.B., Mr. Gorton, James Taylor, Sir Garnet Wolseley, Unexpected, H. K. Mayor; C.B., Stanley Hudson; S.B., Admiral Curzon, and many other fine sorts. There is also a collection of seedling Hellebores in a frame, from which Mr. Barlow expects some novelties.

The two large plant-houses are furnished with many subjects of varied character, and all in good condition. There are some fine specimens of Eucharis amazonica, and a standard Habrothamnus in the greenhouse is laden to the utmost with flowers. Further away, in an upper garden, is a collection of Lancashire Gooseberries, and it is with this fruit Mr. Barlow, in days gone by, scored many a victory.

This hurried sketch includes only a few of the many subjects staged at Stake Hill. There is always something in flower, because so many seasonable plants and flowers are cultivated. The collection of Ranunculus has been transferred to Wales, where, in the clearer atmosphere which surrounds the Great Orme's Head, they succeed much better than in smoky Lancashire. But Tulips, Auriculas, and not a few other choice subjects will still be grown here, and long may it be ere Stake Hill ceases to be such a place of absorbing interest to florists, where something of first-class excellence can be looked upon at almost every season of the year, and where there is one of the most genial and kindest of hosts to give a hearty welcome to all who, like himself, loves the flowers he tends with so much tender care. *R. D.*

AGRICULTURAL RETURNS OF GREAT BRITAIN FOR 1884.

The following summary has been issued by the Agricultural Department of the Privy Council Office:—

Acreage of Land in Great Britain under—

	Wheat.	Barley.	Oats.	Potatos.	Hops.
1882..	3,003,960	2,255,269	2,833,865	541,064	65,619
1883..	2,613,162	2,291,991	2,975,381	543,455	68,016
1884..	2,676,477	2,159,485	2,892,576	562,344	69,258
Increase (+) or Decrease (−).					
1884.. over 1883..	+63,315 or 2.4 p. cent	−132,506 or 5.8 p. cent.	−82,805 or 2.8 p. cent.	+18,889 or 3.5 p. cent.	+1242 or 1.8 p. cent.
1884.. over 1882..	−327,483 or 10.9 p. cent	−95 784 or 4.2 p. cent.	+58,711 or 2.1 p. cent.	+21,280 or 3 9 p. cent.	+3639 or 5.5 p. cent.

Total Number of Live Stock in Great Britain.

	Cattle.	Sheep and Lambs.			Pigs.
		Sheep.	Lambs.	Total.	
1882..	5,807,491	15,573,884	8,745,884	24,319,768	2,510,402
1883..	5,962,779	15 948,667	9,119,604	25,068,271	2,617,757
1884..	6,241,127	16,371,280	9,665,937	26,037,217	2,58 ,323
Increase (+) or Decrease (−).					
1884 over 1883	+ 278 348 or 4.7 p. cent	+ 422,613 or 2.6 p. cent.	+ 546,333 or 6 p. cent	+ 9 8,946 or 3.9 p. cent.	− 35,434 or 1.4 p. cent.
1884 over 1882	+ 433,636 or 7 5 p. cent	+ 797,396 or 5.1 p. cent	+ 920,053 or 10.5 p. cent	+1,717,449 or 7.1 p. cent.	+ 71 921 or 2.9 p. cent.

FOREIGN NOTES.

A special committee of the Legislature in the Dominion of Canada has been taking evidence as to the suitability of the north-west districts for the growth of fruit trees. The testimony given shows that there are many varieties of fruit which thrive in Great Britain, Germany, Russia, and other European countries, which would be equally suited to the climate of the North-West, it being stated that excellent fruit is grown in great quantities in Europe at points where the temperature ranges considerably lower than it does in Canada. It is urged that the example of the Russian and German Governments should be followed in the establishment of the plantations of fruit trees and experimental farms in different parts of the Dominion, to test the kind of trees and fruits best suited to the different localities.

Gardening at the Antipodes.—All the fruits of Europe are grown with success in Australia. The Orange is cultivated most extensively in New South Wales, the area so planted being 6716 acres in 1882, while the fruit gathered amounted to nearly 5,000,000 dozens. As many as 10,000 Oranges have been obtained from individual trees. Oranges are largely exported to the neighbouring colonies, and many proprietors of orangeries, who began life in a very small way, have realised a fortune. The Olive, Caper, Fig, Strawberry, Raspberry, Gooseberry, Currant, Custard-apple, Guava, Banana, Ground-nut, Almond, Passion-fruit, Loquat. Quinces, Plums, Nectarines, Pears, Apples, and Peaches, all thrive. Gardens and orchards covered in 1882 an area of 17,060 acres. Fruit is cheap, and is consumed in large quantities by all classes. The Potato grows well and the yield is large. In New South Wales the Camellia grows to large-sized trees covered with beautiful blossoms, which are largely worn by the fair sex, who do not find them such expensive luxuries as do the ladies in England.

Camellias.—The culture of the Camellias in our greenhouses is very simple. C. japonica in the groves and gardens of Japan is a lofty tree, much admired for its fine form, rich clothing of shining deep green foliage, and elegant red or white flowers, single or double. It is equally admired in China as in Japan, and much cultivated in both countries. It is of frequent occurrence in Chinese paintings, with Hibiscus and Chrysanthemums—two of their great favourites. There are several varieties of C. japonica in China, most of which have been imported here, and their number considerably increased and is daily increasing from seedlings raised in this country. The double white, double striped, and double Waratah (from the central petals resembling those of the Waratah plant of Australia—Telopea speciosissima) are considered grand and marked varieties, and are also free growers and flowerers. The Pæony-flowered and fringed white are also standard beauties. C. reticulata from China is conspicuous for its very large flowers, but nearly all the species and varieties are much admired. From the seeds of Camellia oleifera a large quantity of oil is obtained in China; it is of a thinnish yellow. *P. L. S.*

SWANMORE PARK GARDENS.

The high position attained by the exhibits generally, and particularly of Chrysanthemums, has given Swanmore Gardens so enviable notoriety that a few notes made on the occasion of a very hurried visit will, I feel sure, be acceptable to the readers of the *Gardeners' Chronicle*.

Swanmore Park is the residence of W. H. Myers, Esq., and is 3 miles from the Bishop's Waltham Station on the London and South-Western Railway. The park is wooded with Oak, and being situated on high ground, the views extend beyond Winchester on the one hand to the Isle of Wight on the other, and are of a charming character. Being on such an elevated site, it is somewhat difficult to get new plantations or specimen trees to make much progress at first, by reason of the biting "nor'-easters" that in the spring-time are so prevalent in Hampshire, as elsewhere; but when once trees have started to grow, or have got acclimatised, they go away with all the freedom of trees in more sheltered spots. However, my visit was to the gardens, and with these only my notes must deal; and, fortunately for a scribe that is not well up in the descriptive element, there is ample material to work upon.

First, then, I must try to dispel the delusion that oftentimes exists in regard to many other gardens besides Swanmore—viz., that one branch of gardening receives attention over, or rather to the neglect of, every other. At one place it may be fruit, at another vegetables, at another a flower garden; but some will say, "Ah! it is none of these at Swanmore—it is Chrysanthemums." Not a bit of it; these are grown largely, as will certainly be surmised when we find there are 200 varieties this year growing there, whilst as to the plants, they number at least a thousand, all in luxuriant health, and at the time of my visit (July 23) many of them were 8 feet high—so how high they will get before the end of October it would be hazardous to guess perhaps; but for all that, every other branch of gardening that is practised at Swanmore has, as it were, Chrysanthemum attention; there is no hobby, but it is evident that the Chrysanthemum is regarded with much attention, and not to the detriment of other productions,

for Mr. Molyneux makes use of every nook and corner, indoors and out, so that there is an abundance at all seasons.

On the back walls of the houses, which in most places are unutilised, there are Tomatos, flowering climbers—such as Plumbagos, Heliotropes, and Roses—and even more than this; in a span-roof house filled with Pelargoniums of the zonal section Tomatos are made to form a bower over the path, thus virtually taking up no space, except that on which the pots in which they are growing stand. A visit to Swanmore would do more for a novice in their culture than much of the instructions he might find in books. In addition to the span-roofed house just referred to there is a similar structure for Melon and Cucumber growing, and the usual accompaniment of pits and frames, which are filled with sundries, notably amongst them being a good lot of Bouvardias.

At the time of my visit Melons were plentiful, but I noted that the very general error Melon growers are guilty of was there prevalent, namely, that of growing several varieties in one house—a system of culture that is always more or less unsatisfactory, as one can never be certain of the seed so grown reproducing itself; hence the numberless worthless kinds of Melons that are constantly met with, and the ripening takes place at different periods. The principal range of glass stands on the highest part of the kitchen garden, having an aspect due south, and is as noble a range of houses as any one could desire. The total length is 222 feet, 18 feet wide, with a height of back wall of 14 feet, and the "hip" lights rest on the wall, and are 3 feet 6 inches long. The ventilation is of the handiest description, being worked by an adaptation of the screw. The range is divided into seven compartments, viz., greenhouse, Peach-house, stove, a conservatory, early vinery, Muscat-house, and late vinery. The enumeration of these compartments, and a word or two with respect to their inmates, will sufficiently confirm the impression the writer formed, which was that for excellent general gardening there are not many places of moderate size that can approach Swanmore. Cut flowers and plants for furnishing are in much request, hence greenhouse and stove plants are grown largely. Tuberous Begonias are simply perfection. The varieties Emperor and Vesuvius are some 5 feet in diameter, and flowered to the rim of the pots, Bougainvilleas are also very fine, and so are greenhouse Dracænas. The rafters and back walls are furnished with Tea Roses, Plumbagos, Lapagerias, and Tacsonias, every plant being clean and in full vigour.

In the stove there are extremely well grown specimens of Crotons, and certainly one of the finest specimens of Alocasia Veitchii in the country, some few Orchids, stove Ferns, and Eucharis amazonica and Dracænas, the climbers here being Allamandas, Stephanotis, and Dipladenias, free from insects and in luxuriant health generally. Peaches and Nectarines occupy but one compartment, and that only 30 feet long, yet the most is made of the space, the back wall being covered with two trees of Violette Hâtive and Royal George Peaches, and the front trellis with two Nectarines—Pine-apple and Elruge, the state of which may best be described as being all that the most exacting could wish. The three Vineries were planted in March, 1879, so that they are now in full bearing, though as yet the supernumeraries have not all been cut away; but this will soon have to be done, else the permanent Vines will be crippled for want of space. The sorts in the early house are Black Hamburgh, Mill Hill Hamburgh, Buckland Sweetwater, and Madresfield Court—which last, strange to relate, never splits here, and yet Mr. Molyneux takes no special pains with it except to allow the laterals greater freedom than he does the other sorts, and they are fine both in bunch and berry, and have taken the first position on several occasions at metropolitan and other shows. The Hamburghs, Bucklands, and Muscats, were all at the head of the list in a large competition at the Southampton show held on August 2 and 4—a fact which proves the general excellence of Vine culture as here practised.

From the central house in the range (a conservatory) the middle walk through the kitchen garden starts, on either side of which is a border some 8 feet wide, filled with the best varieties of hardy herbaceous perennials, and the proprietor being just as much attached to this class of plants as to Chrysanthemums, the collection is likely very soon to assume large dimensions. At the bottom of this walk, and immediately contiguous to the entrance to the kitchen garden, is what may be described as the flower garden proper, yet as unlike the generality of ordinary flower gardens as it is possible to conceive.

The space is an oblong, perhaps 50 yards by 20, the one side—next the wall of kitchen garden—being bounded by a border of perennials; the beds are on turf, principally round, but there is no attempt at uniformity of design, which, taking into account position, is the great charm of the arrangement. The beds are all planted with miscellaneous plants, one of the most striking being Humea elegans, as standard plants, underneath being Petunias, Pelargoniums, tuberous Begonias, and Heliotropes. Another arrangement, as simple as it was effective, was Acacia lophantha and Perilla laciniata; Castor-oils, Tobaccos, Solanums, and Wigandias, are used as sub-tropicals. The pleasure grounds are small, but are laid out with taste, and the planting has been judiciously done. There is a bit of everything, and that bit in its right place. There are fifty varieties of flowering shrubs—evergreen and deciduous—which would be no mean number for grounds twice as extensive, and where the soil is of a better description than it is there—a stiff loam, and chalk at 6 feet from the surface; consequently the beds for Rhododendrons, Kalmias, Heaths, and Azaleas, had to be specially prepared—and well this work must have been done, for there is not a taint or tinge in any of the plants to betoken the presence of chalk in the soil. With respect to hardy fruit culture and kitchen gardening, it must suffice to say, that both branches are equally as well done as the departments noticed. *W. Wildsmith.*

OBSERVATION.

In the course of a lecture on the "Art of Fiction" Mr. Besant remarks:—

"Fidelity can be only assured by acquiring the art of observation, which further assists in filling the mind with stored experience. I am quite sure that most men never see anything at all. I have known men who have even gone all round the world and seen nothing—no, nothing at all. Emerson says, very truly, that a traveller takes away nothing from a place except what he brought into it. Now, the observation of things around us is no part of the ordinary professional and commercial life; it has nothing at all to do with success and the making of money; so that we do not learn to observe. Yet it is very easy to shake people and make them open their eyes. Some of us remember, for instance, the time when KINGSLEY astonished everybody with his descriptions of the wonders to be seen on the seashore and to be fished out of every pond in the field. Then all the world began to poke about the seaweed and to catch tritons and keep water-grubs in little tanks. It was only a fashion, and it presently died out; but it did people good, because it made them understand, perhaps for the first time, that there really is a good deal more to see than meets the casual eye. At present the lesson which we need is not that the world is full of the most strange and wonderful creatures, all eating each other perpetually, but that the world is full of the most wonderful men and women, not one of whom is mean or common, but to each his own personality is a great and awful thing, worthy of the most serious study. There are, then, abundant materials waiting to be picked up by any one who has the wit to see them lying at his feet and all around him. What is next required is the power of selection. Can this be taught? I think not—at least, I do not know how, unless it is by reading. In every art, selection requires that kind of special fitness for the art which is included in the much-abused word 'genius.' In fiction the power of selection requires a large share of the dramatic sense. Those who already possess this faculty will not go wrong if they bear in mind the simple rule that nothing should be admitted which does not advance the story, illustrate the characters, bring into stronger relief the hidden forces which act upon them, their emotions, their passions, and their intentions. All descriptions which hinder instead of helping the action, all episodes of whatever kind, all conversation which does not either advance the story or illustrate the characters, ought to be rigidly suppressed."

We have cited this passage because, although it was intended to apply primarily to the art of constructing readable novels, yet it applies with due qualification to the business of life in general, inclusive of the inditing of letters to newspapers. Careful observation of facts, and selection of what are relevant, and the omission of what are unimportant, or at least irrelevant, are special requisites for every one who has a story to tell, even if it be only as to the best method of planting Cabbages. On one point we must take exception to Mr. Besant, and that is where he says, the observation of things around us has no part in ordinary professional and commercial life, it has nothing at all to do with success and the making of money. To this we entirely demur, for is it not obvious that one secret of success lies in this very faculty of profiting by observation of common things?

HOME CORRESPONDENCE.

Potato Disease.—One of the most appalling phases of the literature of this subject is the numerous blunders that are made in attributing opinions to individuals. "A. D." now writes once more, on p. 214, that I seem "determined to remain unconvinced of the fact that the disease spores enter Potatos through the skin." No one has written more plainly and persistently than I have to the effect that the spores of the Potato fungus are easily able to pierce both stem and tuber. See my painfully distinct remarks on p. 796, *Gardeners' Chronicle*, Dec. 22, 1883. What I maintain, and what is perfectly well known, and denied by none, is, that the fungus of the Potato disease lives within the tissues of the host plant; the mycelium cannot live outside, it grows luxuriantly only in the softest and loosest interior parts of the leaves and stems. I therefore say from experience that the disease more frequently reaches the tubers by descending the soft moist interior of the stem, than by piercing from the outside the hard haulm and tuber. In replying to "A. D." once before (*Gardeners' Chronicle*, Dec. 29, 1883), I wrote:—"'A. D.' must remember that the fungus can either pierce the tuber from within outwards, or from outside to in." At the conclusion of the paragraph last week "A. D." adopts this teaching as his own, in assumed opposition to imaginary views foisted on to me. *W. G. Smith.*

Rubus chamæmorus.—With reference to this rare and interesting native Bramble, Mr. Nesbitt (p. 214) is wrong in stating that it occurs only on a few of the higher mountains in Scotland, as it is also found, though sparingly, along the Snowdonian range of hills in Wales. I also see from Bentham that it extends into England and Ireland. Another rare and rather pretty member of this family is R. saxatilis—a plant which I have frequently met with in the county of Carnarvon. It seems to prefer stony fragments amongst which to grow, and probably also a maritime situation. *A. D. Webster.*

Runner Beans.—With so very dry a season and one therefore hardly favourable to growth, and with such very unusual heat that the bloom on the Beans falls wholesale, it is indeed a strange comment upon the oft heard urgent entreaties to grow more vegetables to learn that Runner Beans are so abundant that they hardly pay to market. With Peas past, and all other vegetables, Marrows and Potatos almost alone excepted, somewhat scarce, it is indeed surprising to hear that Runner Beans, the most favoured and popular of all late summer vegetables, should be comparatively little in request. It is difficult to say whether this very low price results from the excessive abundance of Beans just now or whether it is due to the indifference of those who should be considerable consumers. We hear of hundreds of bushels of really good fresh Beans selling at 1*s.* per bushel, and some growers who were less fortunate getting only 9*d.* per bushel. It need hardly be said that such prices cannot pay, indeed they fairly startle growers out of their propriety; for at least one-half of this amount is absorbed in paying for the gathering. But this example is but one of constant occurrence, for we learn on all sides that a fairly general good crop of anything always means something akin to a glut in the London market. There is too much reason to fear that with our present limited range of markets, growers of vegetables and fruits are very much in the hands of dealers and shopkeepers, because we so seldom learn that consumers benefit by the reduced prices. The costermonger who retails for the poorer classes, waits patiently till the superior buyer has got his needs supplied and then secures his goods when prices are at the lowest ebb, and as his rule of business is found in the old maxim, Small profits and quick returns, his customers, as a rule, are far more fairly dealt with than are those of the shopkeeper or more pretentious greengrocer. *D. N.*

Lifting and Storing Potatos.—Although late kinds of Potatos are not yet ready for lifting, it is high time early sorts were out of the ground, for if left in longer there will be a double risk, as the tubers stand a chance of becoming diseased, and if they escape that malady, they are almost sure to sprout after the first rain, as the ground will then be like a hotbed, and will force them to grow. In

digging them up, the greatest care should be taken not to injure the skins, or bruise the Potatos in any way, as injuries of these kinds interfere with their keeping. To prevent either of the mishaps mentioned it is a good plan to just shake the tubers out of the earth, and let them lie on the land for a few hours to harden before handling, by doing which, and so exposing them, the skins set, when the Potatos may be picked up, and at once carried away to the place where they are to be stored. An airy shed is the best situation, and there they should be spread out singly on shelves, or strewn thinly on the floors till the autumn, when all of the kidney kinds ought to be stood on end in boxes having lath bottoms, which boxes may then be placed one above the other if they are kept a few inches apart for the air to pass through. This will prevent any drawing of the young shoots when they form in the spring, and instead of a weakly growth then, the tubers will burst strong, and, if planted in good soil, yield a fine crop. With regard to the late sorts, it is fortunate that they are yet free from disease, but should that dread scourge attack them it will be as well to take up the most forward, as they will only become more affected by being left, for when once the murrain seizes them it is surprising with what rapidity it spreads, and how quickly it gets down to the Potatos, which, though they may not show spot immediately, soon develope the rot and become of no value for using. *J. S.*

Rhubarb Cultivation.—Any one accustomed to note the changes of cropping carried on in some of the market gardens adjacent to London, will find that Rhubarb is taking a leading position as a market garden crop, and that the area of its growth is extending in gardens where it has been grown for some time past. Two varieties appear to be cultivated, viz., the Early Scarlet and the Victoria, the last named succeeding the spring variety. New plantations are made in the autumn. The soil is deeply ploughed or dug, and heavily manured; the roots of all old plantations are lifted and cut to pieces in a rough and ready fashion. So long as a piece of root has an eye, it does not in the least matter that it is destitute of fibre, and these are planted in lines at certain distances apart. Rhubarb is generally planted in fairly light soils; if it be too stiff, clayey, and retentive, it does not answer so well, because it makes a difference in the earliness of the crop. This is a very important matter, and therefore plantations are generally made in the open, in full exposure to the sun, and where there is some shelter from the north. The first year after planting but a spare growth is made, and though the lines are wide no other crop is planted, though this was done more frequently years ago. The second year the plants afford a fair picking, and in doing so some leave nothing but the flower-stem to draw up the sap, until the last pulling takes place, and then the flower-stems are removed. Now-a-days growers do not, as a rule, pull off every stalk, on the ground that it materially injures the plants to do so, holding the opinion [a correct one] that leaves and flower-stems are in a great measure formed out of the matter that was stored up in the roots the previous year, and if they be cut off without allowing them to restore to the root that which they have taken from it, a weaker growth will result the following year. The ground in which Rhubarb is grown is thoroughly cleaned and dug during the autumn and early winter; and in spring, as soon as the eyes swell and show signs of activity, a thick coating of long stable manure is placed over the whole of the ground and roots, and as growth is made this is carried up by the ascending leaves and forms an excellent protection from frost and cold winds, besides hastening the growth. Rhubarb appears to find a ready sale; when fresh it is wholesome, and greatly relished, and it appears to matter but little how largely it may be produced, it finds a ready sale. Manure is the principal item in its culture, and as the market waggons load back from London with this, it is not an expensive production to the grower. It is such a strong growing succulent plant that the very strongest manures suit it thoroughly. The duration of a plantation depends upon the soil in which it is growing and the treatment given to it. In our best managed market gardens a plantation will yield fine marketable stalks for ten or twelve years, and even more; as soon, however, as the plants show signs of giving out a new breadth should be prepared. *R. D.*

Bees, Apricots, and Wasps.—Whether hive bees are short of their natural food or not I do not know, but certain it is that they have attacked the Apricots in the most voracious manner, as dozens of them may be seen on a single fruit, and they swarm over the trees, giving off their busy hum as they move about, foraging and collecting the sweet nectar to carry off to fill up their comb. It is trying enough when one has to fight wasps, but it is doubly so with bees. To take harsh measures towards them is painful, but when they keep up their persistent onslaught something has to be done. Can they be coaxed or turned aside in any way, by feeding, for the time being, or will they cease to visit the fruit walls after rain, and how is it they all find out where to come? Perhaps some experienced apiarian will answer these questions and tell us how they communicate with each other, for that they do so seems clear, or they could not find out and come in such shoals as they do when there is anything good to be had. It is the same with wasps, as I have followed them quite half a mile when we have had a quantity of Gooseberries, Morello Cherries, and other outdoor fruit hanging; and after finding ther nests, I have stood and seen them going out from the hole straight off to the garden, to which rich feeding ground the bulk of them always seemed wending their way. It may be that with their keen sight they follow one another, and that their flight is guided by those that go home the most loaded. No doubt their scent is as acute as their vision; anyhow, by some means or other, they are led to rich pastures. There is only one person near here for miles who keeps bees, and as he lives within 300 yards of the Apricot wall I am not surprised at his bees visiting us, for during these hot sunny days the air must be full of odour given off by the fruit, which the bees are able to sniff in when out on the wing, and the same with the tiresome wasps. Fortunately they are few at present, but now that the air is so hot and the ground the same, they will, I fear, hatch out in great numbers, and be a source of much trouble for the rest of the autumn. If the nests can be found they are easily dealt with, as a plug of wadding wetted with turps and pushed tightly into the hole will soon settle matters by stifling the lot. Tar, too, poured in and the hole blocked after answers the same purpose, and so does also the malodorous carbolic acid. Squibs made with sulphur and powder will quiet them for a time if fired into their nests, and while they are in a stupefied state they may be dug out and destroyed. Night must be chosen for the work, as then they are all home, but as they have guards placed at the mouth of the hole to give the alarm it is necessary to approach cautiously, or they will issue forth to the attack, when it is only common prudence to pop the light out and beat a hasty retreat, leaving them till some future time. Besides destroying every nest that can be found traps in the shape of bottles baited with beer and sugar ought to be placed about by hanging them in trees on the walls or fruit bushes where the wasps frequent; by doing which their numbers may be greatly thinned, and many queens caught as these get out to gorge and disport themselves before coiling up for the winter. Not only are we particular to get as many of these as we can during the autumn, but we pay for them in the spring, and by so doing numbers that would have nests near are destroyed. When the winters are of unusual severity wasps do not appear to increase in the same degree as is remarked after those of a mild character, so that the plague of wasps this year may be attributable to the mildness of the last two winters. *J. Sheppard.*

Bladder Ketmia.—Why is the old Hibiscus Trionum, which was shown at the meeting of the Royal Horticultural Society on Tuesday and certificated, called the Bladder Ketmia? Under this name it will be found in some of the wholesale seed lists, and there it is spoken of as bearing ornamental seed-pods. An old name for it is the Venice Mallow, and seeing that it was introduced from Italy many years ago, this designation can be readily understood. This is in all probability the plant which Gerard in his *Herbal* termed "Flowers of an Hour," for they are of short duration, seldom continuing more than half a day. It is a plant that makes fleshy roots, that go down right into the soil, and therefore should not be transplanted if it can be avoided; and it is much better to sow the seeds where the plants are to stand. Probably the character of the calyx led to the bestowal of the name—Bladder Ketmia—and by some it is included under the old and no longer retained genus Ketmia. *R. D*

Everlasting Peas.—There are few perennials of more value than these, as not only are they very showy, but they afford no end of gatherings for the flower basket, and dress well and last long in water. The white one is specially useful, as the lovely clear racemes of bloom come in splendidly for wreaths and bouquets, in either of which they work up beautifully, and look as pure and chaste as anything that can be had. The most suitable place to grow them is at the back of wide borders in the foreground of shrubs, where, if they are properly supported, they have a most striking effect. The way to keep them erect and prevent their being blown about is to use light tree guards, up which the plants climb and twine, and furnish in a light easy manner. Stout Pea-sticks, driven well into the ground, will also afford them a hold, or they may be planted in semi-wild positions, and allowed to ramble about in their own natural manner. So strong and robust are they, that they may be grown in a live hedge, scrambling over and about which they look quite at home, as their numerous branches run here and there, and fasten themselves on anything that comes in their way. To get the most out of them in borders, or when grown for the supply of cut flowers, the ground where they are to be planted should be deeply trenched, as so much depends on their getting their roots well down in enabling them to keep on blooming and to stand the dry weather. A mulching does much in assisting them to do this, and it is also a great help it they get the pods picked off, as nothing is so exhausting to plant life as the carrying and perfecting of seed. If it is desired to raise or propagate plants, the seeds may be sown anywhere outdoors, as soon as ripe, in the positions intended for them to stand; or old clumps divided, and pieces got by the partition planted at once. The best time to divide is in the spring, just as the plants are beginning to start, as then the severed parts take new roots, and quickly become quite established. *J. S.*

Smut in Primula farinosa.—In most parts of my garden Primula farinosa produces in the seed capsule smut instead of seed, but on some plants good seed is ripened. I cannot refer the difference to any obvious cause, but cannot find in any case good seed and smut on the same plant. A head from Munstead, stated to be from "a dry alpine garden," shows nothing in the seed-pods but smut. Is this due to a fungus analogous to that which produces smut in Wheat? *C. Wolley Dod, Edge Hall, Malpas.*

Nigella damascena.—Any one with a partiality for blue flowers should grow this charming hardy annual. It was met with in an old-fashioned Kentish garden a few days ago, where it seeds itself, and is produced annually in large patches, and blooms with great freedom. The flowers are produced in rather long slender stems, and they are very useful for placing in the base of an epergne and in other ways. It should be allowed to grow where the seeds are sown, and then it does better than when transplanted. It is known as the garden Fennel-flower, Love in a Mist, and Devil in a Bush, though the last appears to be quite a misnomer. *R. D.*

Peas at Loughcrew.—A trial of early Peas was made here in spring by Mr. Taylor, with the following result:—Eleven varieties were sown on the same border on April 8; American Wonder and Veitch's Selected Early were ready for use on June 4; Earliest of All, June 9; Ringleader and William I. four or five days later. *W. J. Ireland, Kells.*

Invigorating Influence of Light on Plants.—The necessity of light to cultivated plants is so often urged that the injunction is in danger of being looked on as a hackneyed precept; yet we venture to say that of all essentials in the routine of plant culture under glass there are none so imperfectly realised—under glass we repeat, for as regards the thousand and one things which are grown in the open air the difference that only a very slight want of light makes to almost any plant so situated so soon becomes apparent when it is compared with others of its kind that receive their wonted quota, that the effects are too manifest to require insisting upon. It is only by noting the immense superiority of growth now and then to be seen in individual plants that by the intelligence of the cultivator, or, in not a few cases, by accident, have received a more than ordinary amount of light as compared with others of their kind grown under conditions of light such as usually looked upon as sufficient, that we can realise to the full the amount of light which most things grown under glass enjoy. The immense influx of new plants that has taken place of late years from countries that differ essentially in their temperature has compelled cultivators to so far make a compromise in the treatment of many as to subject them to more or to less heat than they like. Many plants thrive indifferently if the temperature they are kept in during their season of growth is less than they get in their native country, consequently the cultivator often finds himself compelled to choose between keeping a portion of the inmates of his houses warmer than is their wont, or to discard them altogether. It is in the many cases of this kind that occur that light can be made to act as a compensator to neutralise the otherwise injurious effects of the superabundance of heat thus unavoidably given would have. That light, when present in sufficient volume, has this influence can scarcely fail to have been noticed by any one who has had much to do with the cultivation of heat-requiring plants, yet that the lesson which practice thus teaches is far from being so generally acted on as it might be is evident. A specimen of Cephalotus follicularis, grown in a hot stove in Mr. Schloss' garden, is an evidence in point of the extremely vigorous condition which a plant may be kept in by subjecting it to the fullest exposure to light, even when grown in more heat than requisite for its well-being. The plant in question is kept continuously stood on a shelf run across the end of the house, high up, midway between the ridge and the wall-plate, so that the pot touches the glass. Here

the largest pitchers have attained a size of 2½ inches in length, with the dark ebony colour that is an evidence of its vigorous condition, and which could not long be kept up in so much heat if stood at a distance from the light, such as it is usually kept at. Where plants of almost any kind are subjected to more warmth than they require—a condition which the mixed character of our plant-houses often necessitates with some or other of the occupants—the injury that would otherwise follow will usually be corrected by an increased amount of light. *T. B.*

Impatiens Sultani.—I should much like to learn the experience of growers of this pretty Balsam as to its seeding capacities. I have found it easy enough to raise plants from seed even without heat, and have bloomed them capitally even in 48-sized pots, but no seed-pods follow. Perhaps the heat has been too great under glass, but on that head I cannot say more, except that the plants seemed to like it. In any case, and to try diverse treatment, I have stood the plants in a partly shaded place outdoors, but cannot yet tell what results will follow. It is a very charming decorative plant, is easily grown, and has a neat habit, so that if seed were freely obtained it should become presently as widely grown and as popular as the common Balsam. *A. D.*

Aphis and Resting-spore.—On p. 150 Mr. Plowright incorrectly states that a few years ago I illustrated an aphis in the *Gardeners' Chronicle* "with a resting-spore in its leg." Allow me to say that this is wrong, for in the illustration referred to the resting-spore is distinctly shown outside of, and quite free from the leg of the insect. Spores may, however, be commonly seen within the bodies of transparent insects; they are taken up by the insects with the juices of the plants on which they feed. If any persons wish to compare side by side authentic examples of the little transparent fugitive, Pythium vexans, adverted to by Mr. Plowright—a fungus which perfects itself in twenty-four hours, or at most a day two—with the very much larger, brownish, persistent oospores of Peronospora infestans, which take a year or sometimes two years to reach maturity, they can do so at any time at the Department of Botany, British Museum, South Kensington, where a good microscope is available. *W. G. Smith.*

Lisianthus Russellianus. — This really handsome greenhouse plant is not grown nearly so often as it ought to be; indeed, it is very seldom seen in flower anywhere, which is much to be regretted, as it is so useful to aid in furnishing the greenhouse in August with flowers, distinct in colour and character from anything else. It may also be some recommendation in its favour that the flowers last well after they are cut. It belongs to the natural order Gentianaceæ, and was discovered fifty years ago by the botanical traveller Drummond in Texas, who stated that it was "not excelled in beauty by any plant." That is a statement I cannot endorse, but it is a plant that most tasteful people admire, as it is quite unique in its handsome glaucous foliage and erect stems, on which are borne on terminal panicles its large, rich purple flowers, in form like that of the Tulip. I may say that it is not one of the easiest plants to cultivate; it will not thrive so well as a Calceolaria or Pelargonium; in fact, if it received the same treatment, probably all the plants would die. It is a greenhouse plant in summer, but will not live and thrive with greenhouse treatment in winter. The seeds ought to be sown in August, being of very small size. They must not be covered deeply. Sandy peat is a good compost; a pot should be filled up to within half an inch of the rim with this, and on it the seeds may be sown, just covering them with fine sand. The pot should be placed on a shelf near the glass in a cool stove or intermediate house; and the seeds ought to be kept moist by a closely fitting square of glass; a sheet of paper may also be laid over the glass when the sun shines. The soil should be kept moist by dipping the pot two-thirds of its depth for about half a minute in a pail of rain-water. When the plants are large enough, prick them off, three in a small 60-sized pot, still keeping them close to the glass. The plants, especially while they are in heat, do not like exposure to the sun. The seeds may now be sown, in order that the plants may be well established before the winter. They would flower next year in July and August. Has any one succeeded in growing and flowering L. princeps, described in the *Journal of the Royal Horticultural Society* thirty-two years ago? I saw seeds of it sold some years since at Stevens' auction rooms; it must be a splendid plant. I would like to know if good seeds can be obtained; it might be grown with L. Russellianus. *J. Douglas.*

Root-pruning Apples and Pears.—Full-sized standards with their roots unrestricted and their branches little interfered with, beyond needful thinning out, will no doubt continue to be the form of tree to afford the great bulk of the fruit consumed by the population, but, for both use and ornament, bush-shaped trees are tolerably certain to find a place, as hitherto, on the sides of walks and round the quarters of most vegetable gardens; and unless where these are on stocks that have a dwarfing influence they require to be especially dealt with, to enable their being kept within due limits and in a fruitful condition. This can be best effected by root-pruning, and the question that next arises is at what time of the year can the operation be best carried out? Experience proves that it may be done at any time from when the summer's growth is about completing—that is, when the current year's shoots cease to elongate, up to the time when the buds begin to move, which latter is necessarily earlier or later according to the open or severe character of the winter. Any interference with the roots after the bud movement has begun, it is needless to say, is injurious. After experimenting with this kind of work during a series of years on trees that had attained a size of from 8 to 12 feet in height, and in too vigorous a condition to have formed more than a very few fruit-buds, we have reliable evidence that from the middle of August to the middle of September is the best time. When the root-pruning is effected thus early, whilst the leaves are fresh and full of vitality, the quantity of fruit-buds produced the summer following is considerably in excess of that in which the pruning is deferred until after the leaves have fallen, or are about to fall. In strong, heavy soils, when the ground is dry and hard, the work entails more labour, but this is amply compensated for by the greater progress in bud formation. With trees that are carrying some fruit, but are still too vigorous to bear satisfactorily, the pruning should be deferred until the fruit is gathered. *T. B.*

Reports of Societies.

Stroud Horticultural: *August* 6, 7, *and* 8.—The advent of the Gloucestershire Agricultural Society at Stroud, after an absence of fourteen years (during which time this usually quiet little town has been harassed by political squabbles) suggested the happy thought of holding the annual exhibition of the Horticultural Society in conjunction therewith. Nothing could have answered better; the idea was taken up with acclamation, and carried out with the utmost spirit. The union of the two societies was not, as in very many instances, all to the advantage of the greater, poor Horticulture having to go the wall as a minor interest; but here all seemed in unison, all working for a common end—to make this meeting at Stroud a genuine success. No more beautiful or appropriate spot, even in this charming valley of Stroud, could have been selected to hold such an exhibition; the surprise to us being that such a fine park as that of Stratford Park, with its fine stately trees, &c., should have been obtainable for such a purpose, which is certainly not calculated to improve places. Be that as it may, the Horticultural Society of Stroud was more than fortunate by securing the very best position close to the entrance. Here, in one marquee, from 200 to 300 feet in length, a highly creditable display of the horticultural products of the district were arranged, the prizes offered in the schedule, which was fairly comprehensive, being well competed for. To our mind the arrangement of the exhibits would have been improved by abolishing the cumbrous and expensive staging erected in the centre of the tent, and placing the plants on the green grass, after the manner so effectively carried out at most of the suburban horticultural meetings. Staging is only requisite for fruits, vegetables, cut flowers, and small plants.

When it is stated that Mr. J. Cypher of The Nurseries, Cheltenham, put forth his strength, it will be understood that the plants staged were of no common order. His collection of nine stove or greenhouse plants in bloom, and six ornamental foliage plants, for which the premier prizes were awarded, were as splendid examples of good cultivation as have been seen at any autumn exhibition. Ferns were strongly represented, and most of the collections in very fine condition. Mrs. Frith was placed 1st, and her gardener, Mr. Wilkinson, deserves very much credit; Mr. J. Cypher 2d.

The prizes for the collection of plants arranged for ornamental grouping in a space 15 feet by 6 feet were well contested for, Mr. Cypher coming in 1st with a very fine group; 2d, Mr. D. Bloodworth; 3d, Mrs. Frith. How much more effective these would have appeared had they been placed in semicircular groups on the green turf! Begonias were wondrously good, the plants large and well grown, Mrs. Frith being placed 1st for six varieties, Mr. A. Little 2d, and Messrs. Price & Son 3d; the latter representing by far the better quality, although inferior in point of culture. In the class for three varieties Mrs. Frith was again placed 1st. Zonal Pelargoniums, or "Geraniums for bedding," as the schedule styled them, were a very good class, the plants strong, healthy, and well flowered. A few very good Gloxinias were exhibited, the best coming from Major Fisher. Fuchsias were not of any merit; it seems strange that more attention is not paid to the cultivation of specimen Fuchsias: no plants better repay attention given or are more ornamental during autumn. Cut flowers, which were shown in considerable variety and number, call for no special notice, the excessive heat seeming to take all freshness out of them. This will not apply to the truly charming stands of Roses exhibited by Messrs. Jefferies, of Cirencester, Messrs. Cranston, of Hereford, and others.

The display of FRUIT was on the whole very good, Grapes especially so, the 1st prize for four varieties going to the Duke of Beaufort's gardener, Mr. Nash, for fine examples of Gros Colmar, Alicante, Muscat of Alexandria, and Black Hamburgh. Black Hamburghs were well shown in their special class, and the Muscats were extremely well coloured. Peaches were particularly large and fine, also Apricots and Currants. The collections of fruits, six varieties, were displayed in square trays or boxes, and presented anything but an inviting appearance.

VEGETABLES were shown in strong force, and exceedingly good for so dry a season, Tomatos in pots forming quite a feature, over thirty large plants laden with fine fruit being exhibited, the 1st prize for six plants going to Mr. G. Holloway. Potatos were also well represented, and the cottagers' productions all that could be desired. *A Correspondent.*

Eastbourne Horticultural Society: *August* 13.—The annual show of this Society was held, by the kind permission of Mr. and Lady Fanny Howard, in the grounds of Compton Place, on the date above given. A better position could not possibly be chosen, wherein to hold a show, than these charming grounds, the pleasure grounds, too, having been thrown open by the family for the occasion. One band was stationed therein, and played at intervals during the afternoon to a numerous company. The nature of these grounds, as well as their beautifully undulating character and well kept condition, contributed in no small manner to render this gathering a most enjoyable one. It is seldom such fine specimens of ornamental trees are met with so near the sea, as are to be found here. The grounds are certainly screened in no small measure from damage by severe gales, yet one might imagine himself many miles inland, rather than within a few minutes walk of the seaside. Eastbourne stands almost unrivalled as a health resort. No watering-place in the kingdom is to be compared with it in the possession of terraces along the sea front; these extend for nearly 3 miles, and their further extension still is, we believe, contemplated. The drainage and sanitary arrangements are unique, whilst the water supply, which is without limit, is of the best quality. Eastbourne, too, is well known for the discrimination that was exercised in years gone by, and also in the present, by planting trees on either side of the chief thoroughfares. These trees have thriven exceedingly, and are fast becoming an embellishment to the town, besides affording a delightful promenade during the summer months, not to be found in any other watering place around the coast. The town is greatly indebted for these judicious arrangements to his Grace the Duke of Devonshire, under the designs and able superintendence of his agent, G. A. Wallis, Esq., C.E., the present Mayor of the borough.

The show on this occasion occupied four marquees of good dimensions, and the schedule being a liberal one, produced a lively competition in the chief classes. In the open class for stove and greenhouse plants Mr. Gilbert, Hastings, was easily 1st with eight specimens as fresh as could be shown, and with no really weak plant in the lot, the finest being a splendid example of cultivation of Erica æmula, about 4½ feet in diameter, and one mass of flower. This was backed up with a well bloomed globular bush of Bougainvillea glabra having bracts of unusually deep colour, Statice imbricata var. Gilbertii—a fine form of this plant being also highly coloured. Erica Aitoni turgida, Allamanda nobilis, and A. Hendersoni were also noteworthy plants. Mr. Tudgey, of Waltham Cross, was 2d with a good eight, among which was a grand plant of Erica Ewerana superba, some 5 feet through. This fine autumn Heath deserves more recognition than it now receives, and in the hands of our best growers could, no doubt, be turned to as good an account as Erica hyemalis. Clerodendron Balfourianum was also very fresh in this collection. In the 3d prize collection, from Mr. Rann, of Handcross Park, there was also another Heath denoting high-class culture — E. cerinthoides coronata, the example shown wanting another week or two to perfectly develope its showy trusses of bloom. In the following class, from which trade growers were excluded, Mr. Gore, gr. to Captain Taylor, was placed 1st, having profusely flowered plants of Allamanda Hendersoni, very fine; Stephanotis floribunda, and Kalosanthes coccinea, both alike good; the 2d prize falling to a more even lot of plants, though none equalled those just named; these were shown by Mr. Jupp, gr. to Geo. Boulton, Esq., Torfield.

For fine-foliaged plants Mr. Rann was easily 1st, with well known examples of first-class culture, Thrinax elegans, of grand proportions, combined with Latania borbonica of similar extent, and well coloured large specimens of Croton Andreanus, C. interruptus, and C. angustifolius (the latter much finer in colour than it is usually seen), to make a most effective central group. Mr. Tudgey was 2d with a smaller lot, the best plants of which were Cocos Weddelliana, Thrinax elegans, and Kentia Forsteriana among Palms, and a fresh healthy plant of Cordyline indivisa. In the 3d prize collection, from Mr. Jupp, were two extraordinarily well coloured plants, not over large, of Croton Queen Victoria and C. majesticus. For eight Ferns Mr. Rann was again 1st, with well grown plants of Cyathea dealbata, very fresh; Dicksonia antarctica, good; and dense bushes of Gleichenia rupestris gigantea and G. rupestris glaucescens, Davallia Mooreana also being a fine plant. Mr. Gilbert following with a well-grown collection, among which was a fine plant of Balantium culcita, very rarely seen in an exhibition group. In the class for six Ferns was

also another example seldom seem, and in fine health, too, of Goniophlebium subauriculatum, with fronds 9 to 10 feet in length, Mr. Gore being the exhibitor. For Ericas Mr. Tudgey was 1st, and Mr. Gilbert 2d, the latter exhibitor showing small plants, but with remarkably fine heads of bloom.

In another tent were staged some exceedingly well flowered plants of Fuchsias, in every way praiseworthy, the 1st and 2d collections being in very close order of merit—Mr. Tiggs, gr. to the Lady Superior at All Saints' Hospital, taking the former, and Mr. Wise, gr. to Major Holroyd, the latter position—Alba coccinea, marginata, erecta var. Novelty, and Rose of Castille were the best, the first-named variety being of most striking effect and very floriferous. The class for Achimenes brought forth also two collections of very close order of merit, reminding one of what used to be seen some years back in the cultivation of this useful genus. Mr. Wise was 1st, with a good selection, the same exhibitor taking the 1st position with Gloxinias, having fine blooms. Two very neat "groups" were shown in the class devoted to the same, but room was seen for improvement in this class in the matter of lightness and finish. Mr. Gore took the 1st position. In cut flowers some good competition was brought forth. For Roses Messrs. Woollard took 1st in the open class, and Mr. Slaughter, of Steyning, two 1sts in the amateur classes, the latter exhibitor being strong in Tea-scented kinds. Miscellaneous boxes of cut flowers were well shown, and classes, too, were provided for annuals and herbaceous plants, which brought out some good exhibits.

The FRUIT classes were the weakest part of the show some fine Peaches were, however, shown by Mr. Hopkins, gr. to R. Thornton, Esq., High Cross, Framfield; and large examples of Cherries (Morello) by Mr. Wise. From Mr. M'Leod came some fine fruits of Jargonelle Pears; and Mr. Russell, of Lillington Pleasure Gardens, showed seventeen dishes of Apples of good quality.

Messrs. Scott & Co., nurserymen, of Eastbourne, staged a miscellaneous collection of useful decorative plants; and in the same tent were set forth the exhibits by the cottagers. These were most creditable in every way, and the committee will do well to encourage this department of the exhibition as much as possible. They, too, are most fortunate in having the practical experience of Messrs. Larkin, both as manager and hon sec. To this gentlemen and the working committee every praise is due for the way in which the arrangements were carried out. *J. H.*

Taunton Deane Horticultural: *August* 14.—Liberal prizes, with good management and the ability to secure a large attendance of the public, go to make this Society one of the most successful in the kingdom. At this advanced time of the summer it is not possible to have such a display of flowering plants as are forthcoming at the principal shows in the spring, when Azaleas and a large proportion of hard-wooded species are in bloom, but it is no exaggeration to say that at Taunton was seen such a display of skilfully managed hard-wooded plants that it is in vain to look for elsewhere, as several of the leading exhibitors always come out in their greatest force with fresh groups composed of specimens in which there is a total absence of the stale admixture that often mars otherwise fine collections elsewhere.

On the present occasion the flowering division was represented in even finer condition than usual, a comparatively new exhibitor, Mr. Lock, gr. to B. W. Cleave, Esq., Crediton, near Exeter, brought out such a number of grandly flowered examples of hard-wooded plants as would be difficult to match, thus clearing all before him. Nor was the fine-leaved section any way behind the blooming division in point of excellence, if in numbers, whilst cut flowers, as they always are here, were in abundance. Fruit also was well represented, not alone the best sorts, such as Pines, Grapes, Peaches, Nectarines, and Apricots, but also Apples, Plums, and other common kinds, which this season are unfortunately the reverse of plentiful in most localities. The large display of fine vegetables showed that the long drought has at all events not been felt in this part of the kingdom.

In the open Class for twelve stove and greenhouse plants in bloom, for which prizes of £20, £12, and £7 10s. were offered, there were three exhibitors, Mr. Lock, gr. to B.W. Cleave, Esq., was 1st, with a splendidly flowered collection of even sized large specimens, averaging quite 4 feet each in diameter, the meritorious feature in the group being that there was not a plant in it that was not a well grown example. They consisted of Erica obbata purpurea, E. Marnockiana, E. Fairreana, E. æmula, each profusely flowered; Dipladenia amabilis and D. hybrida, in beautiful condition; Ixora Fraseri, I. Williamsi, I. Prince of Orange, Allamanda Hendersoni, Eucharis amazonica, and Stephanotis floribunda. 2d, Mr. J. Cypher, Cheltenham, who had also a very fine group, the best of which were Allamanda grandiflora, Rhododendron Duchess of Edinburgh, Erica Austiniana, E. cornuta, and a plant of Hæmanthus magnificus, bearing fifteen unusually large heads of bloom. 3d, Mr. J. F. Mould. With six stove and greenhouse plants, 1st, Mr. Lock, who staged here again a grand lot, notably Erica tricolor Wilsoni, Lapageria rosea, profusely flowered; and Ixora Duffii, bearing about a score of immense trusses of its deep red bloom and having a dense mass of deep green foliage. Mr. J. Cypher, in whose excellent collection was Erica Macnabiana, unusually well bloomed,

FERNS were well exhibited by Mr. Lock, who was an easy 1st in the class for eight, with large plants in faultless condition of Nephrolepis davallioides furcans, Davallia Mooreana, D. polyantha, each from 8 to 9 feet through; Adiantum trapeziforme, Gleichenia speluncæ, 8 feet through; Marattia Cooperi, Cyathea dealbata, and C. medullaris. 2d, Mr. J. Cypher, having in a nice group. Neottopteris australasica, and the scarce Aglaomorpha Meyeniana; 3d, Mr. J. F. Mould.

FINE-FOLIAGED PLANTS.—These were splendidly shown. 1st, Mr. J. Cypher, with a nicely varied group, well enlivened by the large densely-clothed and highly coloured Crotons which it contained; they consisted of C. Queen Victoria, C. majesticus, C. angustifolius, and were judiciously intermixed with large Palms and others, including Cordyline indivisa on a 2-foot stem, bearing a large spreading head; 2d, Mr. Lock, who had a fine collection, in which were Alocasia intermedia, 5 feet in diameter; Croton Disraeli and C. Weismanni, beautifully coloured; and Encephalartos Vroomii, which had three of its cone-like flower-stems pushing up; 3d, Mr. J. F. Mould.

ORCHIDS.—Of these Mr. J. Cypher was the only exhibitor, taking the 1st prize with Dendrobium formosum, Cattleya crispa superba, Oncidium Lanceanum, and Saccolabium Blumei majus.

Fuchsias were remarkably well shown.—1st, Mr. H. Godding with 7 feet pyramids, dense in foliage, and full of flowers; 2d, Mr. F. Woodland, who also had well-managed plants, smaller, but similar in shape.

Zonal Pelargoniums.—These were much more natural in shape than now often met with at exhibitions; moderate in size and full of flower, they were far more pleasing to look upon than the over-trained flat monstrosities too generally seen. For the best eight, 1st, Mr. Godding, who showed a well flowered set of plants; 2d, Mr. Jacobs. Eight nosegays.—1st, Mr. Godding; 2d, Mr. Jacobs. Eight double zonals.—1st, Mr. Godding; 2d Mr. Jacobs. Eight tricolors, four gold and four silver.—1st, Mr. Godding, staging nicely coloured examples; 2d, Mr. Tidbury.

Eight Begonias.—1st, Mr. Godding, who had well flowered plants; 2d, Mr. Jacobs.

Newly introduced plant in flower.—1st, Mr. J. Marshall, with Anthurium Rothschildianum; 2d, Mr. Cypher, with Cattleya Gaskelliana. Newly introduced foliage plant.—1st, Mr. J. Cypher, with Croton Thomsoni, one of the best and most distinct of all the large-leaved new Crotons. Newly introduced hardy plant.—1st, Mr. J. Marshall, with a nicely bloomed example of Montbretia Pottsii.

In the amateurs' division, with twelve stove and greenhouse plants, 1st, Mr. Lock, with a nicely managed dozen, the best of which were Erica ampullacea Barnesii, Ixora coccinea, Allamanda Hendersoni, A. grandiflora, Clerodendron Balfourianum, and Rondeletia brilliantissima, all well-flowered; 2d, Mr. J. Paine. Six stove and greenhouse plants.—Here again Mr. Lock was 1st, with nice plants, amongst which were Ixora Williamsii, Erica tricolor Wilsoni, E. Jacksoni, and Bougainvillea glabra; 2d, Mr. E. E. Bryant. Four stove and greenhouse plants.—1st, Mr. Thomas, gr. to W. G. Marshall, Esq.; 2d, Mr. E. E. Bryant. For six fine-foliage plants.—1st, Mr. Lock, who had a pretty group of Croton Prince of Wales and Alocasia Thibautiana, both very effective; 2d, Mr. E. E. Bryant. Six Ferns.—1st, Mr. Lock, who here likewise staged well-grown examples, the best of which were Adiantum cardiochlæna, Davallia Mooreana, D. Tyermanni and Gleichenia Mendeli; 2d, Mr. E. E. Bryant. Fuchsias in this division were also well shown: 1st, the Rev. A. Elston, with six; 2d, Mr. Woodland. Four Selaginellas.—1st, Mr. Lock, with fresh, densely furnished plants of S. Wallichii, S. umbrosa, S. Wildenovii, and S. apoda; 2d, Mr. E. E. Bryant.

Achimenes, as here staged by Mr. J. Marshall, proved how beautiful these old favourite common plants are when managed as these were; they were not too crowded in the pots, and were furnished with bright healthy foliage and profusely flowered. The sorts were Dazzle, Perfection, Mauve Queen, and Marguerite. Four Gloxinias.—1st, Mr. Lock, with plants which combined stout healthy foliage and finely developed flowers; 2d, Mr. J. Marshall. Coleus were well shown, Mr. W. B. Hellard being 1st for six, with a nice selection of the best varieties, including Ada Sentance, Mrs. Steddall, Mrs. J. Pawle, and General Roberts; 2d, Mr. Woodland.

Pelargoniums in this division also were well shown. With six zonals, 1st, Mr. E. E. Bryant; 2d, Mr. Woodland. Six Nosegays.—1st, Mr. Woodland; 2d, Mr. E. E. Bryant. Four bronze sorts.—1st, Mr. Woodland; 2d, the Rev. A. Elton. Four golden tricolors.—1st, the Rev. A. Elton. Four silver tricolors.—1st, the Rev. A. Elton. Four double zonals.—1st, Mr. F. Woodland; 2d, Mr. E. E. Bryant.

CUT FLOWERS made a fine display, but the Roses showed the effects of the hot dry weather we have had. For forty-eight single flowers, 1st, Messrs. Cooling, Bath, who staged a nice collection; 2d, Mr. T. Hobbs. Twenty-four Roses, three blooms of each.—1st, Messrs. Cooling; 2d, Mr. W. Smith. Twenty-four Dahlias.—1st, Mr. Nation, who staged a lot of large flowers; 2d, Mr. T. Hobbs. Twelve Dahlias.—1st, Mr. Nation. Twelve fancy Dahlias.—1st, Mr. Nation. Twelve single Dahlias.—1st, Mr. Walters; 2d, Mr. Nation. Gladiolus, twenty-four spikes.—Of these Mr. Dobree was the only exhibitor, taking 1st with a good stand, and also showing a nice collection not for competition. Messrs. Kelway had also a fine and extensive display of these beautiful autumn flowers, not for competition, amongst which were several new varieties, two of which received First-class Certificates—Mr. Samson, a grand large red flower, with dark crimson-violet blotch on the lower segments, a good spike; Maori King, colour difficult to describe, but may be set down as deep salmon clouded with a brown shade, and very large feathered violet-purple markings on the lower segments; forms a fine spike of the right shape. A First-class Certificate was also awarded to Mr Dobree for Gladiolus Queen of Canaries, canary-yellow, slightly tinted with pink, good individual flowers and spike. Mr. Lock took 1st with a collection of cut flowers, consisting of twelve enormous bunches, including Heaths, Dipladenias, Allamandas, Franciscea calycina, Eucharis amazonica, and Lapagerias. For a dinner-table arranged with fruit and flowers, Miss Cypher was 1st, with a tasteful arrangement laid out in the usual way; Mrs. J. E. K. Whitby, who was 2d, had likewise a nicely arranged table. With a single stand of cut flowers Miss Cypher took the lead easily, amongst her flowers the drooping Russelia juncea was used with the best effect; 2d, Mrs. N. J. G. Harriman; 3d, Mrs. W. G. Marshall. With a hand bouquet Miss Cypher was a long way in front, staging a beautiful example; 2d, Mrs. E. Drake; 3d, Mrs. N. J. G. Harriman. Bouquet of wild flowers.—1st, Mrs E. Kimber, 2d, Mrs Gibbons. Arrangement of hardy Ferns.—These were very well done. 1st, Mr. Knight; 2d, Miss E. Pearse.

FRUIT, as we have already stated, was well and plentifully shown. With ten dishes Mr. Iggulden, gr. to the Earl of Cork, took the lead, staging a nice collection, including Black Hamburgh and Muscat of Alexandria, Peaches, a Smooth Cayenne Pine, Pine-apple Nectarines, Barrington Peaches, Brown Turkey Figs, Moor Park Apricots, Plums, and Cherries; 2d, Mr. J. Brutton, whose best dishes were Alicante and Muscat of Alexandria Grapes, the latter well coloured; Princess Alexandra Peaches, and Pitmaston Orange Nectarines; 3d, Mr. W. H. Long. Eight dishes.—With these Mr. Brutton was 1st, whose most noticeable were Muscat of Alexandria and Black Hamburgh Grapes, Royal George Peaches, Pitmaston Orange Nectarines, and Moor Park Apricots; 2d, Mr. W. J. Crossman; 3d, Mr. F. J. C. Parsons. Four dishes.—1st, Mr. Walker, who had nice bunches of Madresfield Court Grapes, Grosse Mignonne Peaches, Elruge Nectarines, and Reid's Melon; 2d, Mr. Iggulden; 3d, Mr. Brutton. Two Pines.—With these Mr. Brooks was placed 1st, staging two Smooth Cayennes; 2d, Mr. Nicholas, gr. to Earl Fortescue, with larger examples of the same sort, weighing 7 lb. and 8 lb. respectively in fine condition. Mr. Nicholas staged, not for competition, half a dozen grand fruits of this useful variety. Three bunches of Black Hamburgh Grapes.—1st, Mr. C. Collard, with well finished examples; 2d, Mr. Lock. Three bunches black Grapes, not Black Hamburgh.—For these Mr. Brutton took 1st for moderate bunches of Alicante, not fully up in colour, some well finished Madresfield Court being passed over; 2d, Mr. Lock, with immense bunches of Madresfield Court, that required more time to finish. Three bunches of Muscats.—1st, Mr. Brutton, with nice examples, well coloured; 2d, Mr. Lock. Three bunches of white Grapes, not Muscats.—Here Mr. Westacott took the lead, showing Duke of Buccleuch, very large in berry and well coloured; 2d, Mr. C. Collard with very good Foster's Seedling. Dish of Peaches.—1st, Mrs. Walker, who had Grosse Mignonne, large and in fine order; 2d, Mr. Nicholas, with good Goshawk. Dish of Nectarines.—1st, Mr. Nicholas, with beautiful fruit of Humboldt; 2d, Mrs. Walker, with Pitmaston Orange. Dish of Apricots.—1st, Mr. Huxtable, with Moor Park, very large and in fine order; 2d, Mr. Lock. One Melon.—1st, Mr. Iggulden, with a good fruit of Eastnor Castle; 2d, Mr. W. Paul. Dish of light coloured Plums.—1st, Mr. T. Hickory; 2d, Mrs. E. Blake—both showing very good Green Gage. Dish of dark-coloured Plums.—1st, Mr. J. P. Blackmore; 2d, Mr. W. H. Long.

Mr. R. Veitch, Exeter, exhibited, not for competition, a very pretty group of plants and cut flowers; the former included Orchids, Palms, Ferns, and variegated plants, with single and double Dahlias, Roses, &c. *T. B.*

Worcester City and County Horticultural: *August* 13 *and* 14.—The fifth summer show of this Society was held in enjoyable weather amidst the fine scenery of Perdiswell Park, the seat of H. Walker, Esq., who also kindly threw open his beautiful gardens, thus lending an additional attraction to the visitors. The exhibits were divided into three classes—those for professional gardeners, amateurs, and cottagers.

Each section was very well represented, the fruit, flowers, and vegetables in their various classes being of superior merit, one of the principal features of the show being the groups of plants arranged for effect. Here, as is usually the case, they were far too crowded, but still made a fine display collectively—stove, greenhouse, foliage, and flowering plants being in considerable profusion.

Soft-wooded plants, such as Coleus, Fuchsias, and Pelargoniums, were well grown. Ferns were clean and neat, and table plants were likewise exhibited in some quantity, as were cut flowers, Roses, Gladiolus, Dahlias, Asters, and Stocks, all of them being very meritorious.

Bouquets and buttonhole flowers, vases, &c., were alike fairly done.

Of FRUIT there was an excellent display, the collections being well competed for; Grapes, Melons, Peaches, and Apricots excellent. Melons were shown in great numbers, but Pines were poorly represented. Apples were marvellously fine; Pears, Currants, and Gooseberries were a prominent feature.

VEGETABLES appeared in great quantities, the competition for the leading prizes being very keen, the quality of most of the exhibits being excellent.

Amateurs' and cottagers' classes brought numerous examples, that reflected great credit on those who con-

tributed them, especially good being the cut flowers, fruits, and vegetables.

Miscellaneous.—Messrs. Cranston & Sons, Hereford, contributed six boxes of cut Roses, including one of the best twenty-four Maréchal Niel that has been seen this season, the stand finding many admirers. Mr. T. Hewitt, nurseryman, Solihull, showed some well-grown specimens of tuberous Begonias, profusely flowered and large in size. Messrs. Rowe & Co. and Messrs. Smith & Co., nurserymen, of Worcester, each contributed groups of miscellaneous plants, not for competition, comprising just those plants for which each establishment is famed, the former contributing a few boxes of choice Rose blooms, and the latter fine examples of cut herbaceous flowers and others. The weather was delightfully fine till about 6 P.M., when it commenced to rain in torrents.

Massachusetts Horticultural: *Boston, Aug.* 2.—To-day being prize day for native Ferns they were well represented by two fine collections shown by Mrs. A. J. Dolbear and Mrs. P. D. Richards. Mr. R. T. Jackson exhibited a large collection, but as they were not all natives it could not compete for a prize, but received the award of a Silver Medal. They were arranged in three divisions according as they inhabit New England, England, or both. The following is a list of varieties as recorded by the secretary, the choicest and rarest being marked with an asterisk:—Those native of New England were Adiantum pedatum, Aspidium acrostichoides and the var. incanum, A. Boottii, A. Goldianum,* A. marginale, A. noveboracense, Asplenium angustifolium,* A. ebeneum, A. thelypteroides,* Botrychium virginianum, Camptosores rhizophyllus,* Cystopteris bulbifera,* Dicksonia pilosiuscula, Lygodium palmatum,* Onoclea sensibilis, O. Claytoniana, Phegopteris hexagonoptera,* Woodsia obtusa, Woodwardia virginica, Pellæa atropurpurea,* and P. gracilis.* Natives of England:—Allosorus crispus,* Aspidium angulare and two vars., A. lonchitis, A. rigidum, Asplenium Adiantum nigrum* (dried specimen), A. fontanum,* A. septentrionale,* Ceterach officinarum,* Cystopteris montana,* Hymenophyllum tunbridgense (dried specimen), Lomaria spicant, and Trichomanes radicans (dried specimen). Natives of both New England and England:—Aspidium aculeatum, A. cristatum, A. Filix-mas, A. spinulosum and the var. dilatatum; A. thelypteris, Asplenium Filix-fœmina, and four vars., A. rutamuraria var.,* A. trichomanes, A. viride, Cystopteris fragilis, Osmunda regalis, Phegopteris dryopteris, P. polypodioides, Polypodium vulgare, Pteris aquilina, Scolopendrium vulgare and two vars., and Woodsia Ilvensis. Mr. Jackson also exhibited Campanula cæspitosa, from the high Alps of Switzerland, a plant of great beauty and a remarkably free bloomer. Mrs. A. J. Dolbear exhibited the following Ferns:—Aspidium acrostichoides, A. novaboracense, A. thelypteris, A. spinulosum, A. cristatum, A. marginale, A. spinulosum var. Boottii, Botrychium ternatum var. dissectum, B. ternatum var. obliquum, B. virginicum, Osmunda cinnamomea, O. Claytoniana, Phegopteris polypodioides, P. dryopteris, Polypodium vulgare, Adiantum pedatum, Asplenium Filix-fœmina, A. ebenoides, A. trichomanes, Onoclea sensibilis, Camptosorus rhizophyllus, Woodsia ilvensis, W. obtusa, Woodwardia angustifolia, W. virginica, Dicksonia punctilobula, Pteris aquilina, Struthiopteris germanica, Cystopteris fragilis, and took the 1st prize. Mrs. P. D. Richards showed twenty seven species and five varieties, and was awarded the 2d prize. E. H. Hitchings exhibited a collection of native flowers, including Ranunculus alismæfolius, which have not been found in this vicinity before. Mr. John Parker made a large display of Balsams, amongst which the following were noticeable:—Miss Piggett, Rubra centifolia, Sensation, Susan Morrison, Prince Arthur, and Triomphe de Saunoy. Mr. E. Shepherd exhibited a large quantity of cut flowers, consisting of Pinks, Gloxinias, and Dipladenias; Mr. E. Fawkes Dahlias, and Miss Story Hollyhocks. Mr. J. W. Manning exhibited the following herbaceous plants:—Papaver alpinum, Achillea millefolium, A. ptarmica, A. tomentosa, Anchusa italica, Bocconia japonica, Rudbeckia maxima, Boykinia aconitifolia, Cassia marilandica, Lobelia syphilitica, Centaurea calocephala, Commelyna virginica, Dicentra eximia, Eryngium alpinum, Coreopsis lanceolata, C. palmata, Veronica spicata, Heliopsis lævis, Anthemis tinctoria, Silphium integrifolium, Delphinium grandiflorum, Asclepias verticillata, Lilium elegans, and L. superbum. Mr. Benjamin G. Smith showed very large English Gooseberries in splendid condition. Mrs. Horace Eaton contributed Doyenné (summer) Pears, and Mr. Cephas H. Brackett some fine large Mushrooms.

Potatos and Tomatos at Chiswick.—At a meeting of the Fruit and Vegetable Committee, held at Chiswick, August 19—present: Mr. John E. Lane in the chair; Messrs. Paul, Crowley, Lee, Silverlock, Howcroft, Burnett, Denning, Ellam, and Barron (Secretary)—the committee examined the collections of Potatos and Tomatos growing in the gardens, when the following First-class Certificates were awarded, viz.:—

Potatos—Ellingtonia, from Mr. Ellington, West Road Garden, Wildenhall, Suffolk; Nott's Victor, from Mr. R. Nott, Vermont, U.S. America; The Doctor, from Mr. G. Pritchard, Green Street, Sittingbourne; Charter Oak, from Messrs. Bliss & Sons, New York. *Tomatos*—Sutton's Reading Perfection, Hackwood Park Prolific, Yellow, from Mr. B. S. Williams; Lord Wolseley, from Mr. B. S. Williams.

The Arboretum.

Underwood and Game Coverts.—In the matter of game coverts, and even in places where game is not preserved, but where it is thought to be desirable to clothe the ground under the large timber trees with some species of shrubs, planters almost invariably select evergreen materials for the purpose. Putting aside the uniformity of this arrangement—for owing to the few materials at command for this purpose that is unavoidable—I wish more particularly to point out some advantages that arise from the employment not only of a greater variety of species, but also from these being deciduous and food bearing. We know that but few of the evergreen shrubs carry fruits that are palatable to birds. Berberis Aquifolia and B. Darwinii, Cotoneaster Simonsii bear fruits, but they succeed thoroughly only in fairly open woods, by the margins of drives, and such like open parts. The Yew bears seeds that are eaten by small birds, but pheasants do not like them. The Virginian red Cedar also bears seeds, but it is only in the hardest winters, when all other feed is buried under the snow, that any creature will touch these, then roe-deer will do so, their flesh acquiring then the flavour and odour of Juniper. The ground under the perpetual shade of evergreens is and must necessarily be always in a damp state, by reason of the sun not being able to penetrate through the foliage sufficiently to evaporate the moisture arising from snow and rain. Where deciduous vegetation covers the ground the shade is much less dense, being quite absent in the winter and late autumn; so that the undergrowth, if kept of moderate height by cutting once in six or eight years, must be much less unhealthy for the animals existing in them. The more rapid growth of deciduous plants, and the greater absorbent and exhaling property of their foliage, must also assist in drawing moisture from the earth on which they are growing. The Hazel in variety is a good undergrowth plant, that is also adapted for many useful ends when of a few years' growth. It will grow in woods that are not too dense, and makes a fine covert alone. Whitethorn and Blackthorn, each make an almost impenetrable thicket if kept moderately low, and one very difficult for poachers to attack. Cornus mascula, C. alba, and C. sanguinea make good covert, especially in damp soils, the wood being also useful for sheep hurdles and similar purposes. The Viburnums, such as of Opulus sterilis, V. lentago, are berry-bearing plants like the above-mentioned, and to which shade is not inimical. The common Elder is another berry-bearing plant, adapted for growing almost anywhere, and easily kept at a moderate height, either by cutting down to the ground or to 3 or 4 feet high. Symphoricarpus racemosus, the Snowberry shrub, and Ribes aureum make good undergrowth, and flower well when the shade is not too great. A strong-growing herbaceous perennial, named Phytolacca decandra, bearing long racemes of fleshy purple berries, that birds are very fond of, should be planted or sown in all fairly open spaces, and which, when it is once established in a few spots, will continue to propagate itself by seed and root. It is as well to plant common Crabs in moderate numbers in all woods where game is kept, as birds are partial to the seeds, that are found in abundance in the fruits. The selection should not be confined to the indigenous species, but should include the handsome Chinese and Siberian sorts. Beech, common Oak, wild Cherries, and Celtis occidentalis should all be planted as feeding trees in small numbers in woods made up of trees that afford no food to animals. It will thus be seen, from this selection of common shrubs, that the choice of the planter is not confined to the evergreen species mentioned by Mr. Webster, nor is it at all desirable to plant only those over large spaces, which are, with the exception of Box, useless commercially.

Rubus cratægifolius (p. 215).—This plant is perfectly hardy and is ornamental, but I would advise no one to plant it who cannot give it abundance of room. I had it once, but am glad to say I have got rid of it. It is one of the greatest ramblers I know. *H. N. Ellacombe.*

The Weather.

State of the Weather at Blackheath, London,
For the Week Ending Wednesday, August 20, 1884

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 10 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity: Sat. = 100	Wind: Average Direction.	Rainfall
Aug	In.	In.	°	°	°	°	°	°			In
14	29.86	+0.09	72.0	59.0	13.0	63.8	+1.8	52.1	66	N.W.	0.10
15	29.96	+0.18	76.5	54.0	22.4	65.3	+1.4	52.0	68	S.E.; W.NW.	0.10
16	29.93	+0.15	81.6	53.5	27.5	66.2	+4.8	49.8	56	E.S.E.; W.SW	0.00
17	29.80	+0.01	84.5	56.0	28.5	69.5	+8.3	54.5	58	S.W	0.00
18	29.77	−0.02	81.5	57.0	24.5	69.2	+6.2	55.8	67	S.E.; S.W.	0.10
19	29.75	−0.04	71.0	54.5	16.5	61.7	+0.8	52.9	73	S.W.	0.07
20	29.90	+0.10	73.5	51.5	22.0	62.0	+1.2	50.8	67	N.W.; N.E.	0.00
Mean	29.85	+0.0.77	1	55.1	22.1	64.8	+3.4	52.6	65	S.W	0.07

Aug 14.—Fine day and night, bright at times.
— 15.—Dull morning, fine bright afternoon and night.
— 16.—Very fine day and night.
— 17.—Very fine day and night till 10 P.M., dull afterward.
— 18.—Fine day and night, cloudless at times.
— 19.—Fine bright morning, dull from 2 P.M., rain at 5.30 P.M., clear at 10 P.M.
— 20.—Dull morning, fine afternoon and night.

London: *Atmospheric Pressure.*—During the week ending August 16, the reading of the barometer decreased from 30.04 inches at the beginning of the week to 29.96 inches by 3 P.M. on the 10th; increased to 29.27 inches by 9 A.M. on the 11th, decreased to 29.93 inches by 3 P.M. same day; increased to 30.30 inches by 9 A.M., decreased to 29.98 inches by 3 P.M. on the 13th; increased to 30.17 inches by 9 A.M. on the 16th, and was 30.09 inches by the end of the week.

The mean reading of the barometer for the week was 30.02 inches, being 0.09 inch lower than last week, and 0.08 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 91°, on August 11; the highest on the 14th was 72°. The mean of the seven high day temperatures was 80°.4.

The lowest temperature was 53°.5, on the 16th; on the 12th the lowest temperature was 64°. The mean of the seven low night temperatures was 58°.7.

The greatest range of temperature in one day was 30°, on the 11th; the smallest was 13°, on the 14th. The mean of the seven daily ranges was 21°.7.

The mean temperatures were—on the 10th, 69°.5; on the 11th, 75°.7; on the 12th, 71°.1; on the 13th, 67°.6; on the 14th, 63°.8; on the 15th, 63°.1; on the 16th, 66°.2; and these were all above their average by 7°.4, 13°.5, 8°.9, 5°.4, 1°.8, 1°.4, and 4°.8 respectively.

The mean temperature of the week was 68°.1, being 2°.2 higher than last week, and 6°.2 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 151°, on the 11th. The mean of the seven daily readings was 135°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass was 42°, on the 16th. The mean of the seven readings was 47°.4.

Rain.—0.03 inch fell on the 13th.

England: *Temperature.*—During the week ending August 16 the highest temperatures were 91°.8, at Cambridge, 91°.1 at Nottingham, 91° at Blackheath; the highest at Sunderland was 76°, at Brighton 79°, at Plymouth 79°.5. The general mean was 83°.8.

The lowest temperatures were 44°.4 at Wolverhampton, 45° at Truro, 45°.2 at Nottingham; the lowest at Blackheath was 53°.5, at Brighton 53°, and at Sunderland and Preston 52°. The general mean was 49°.1.

The greatest ranges were 45°.9 at Nottingham, 42°.3 at Wolverhampton, 41°.8 at Cambridge; the smallest ranges were 24° at Sunderland, 26° at Brighton, 28° at Preston. The general mean was 34°.7.

The mean of the seven high day temperatures was highest at Cambridge, 82°.3, at Blackheath 80°.4, at Nottingham 79°; and was lowest at Sunderland, 72°.1, at Bolton 73°, at Liverpool 73°.2. The general mean was 76°.1.

The mean of the seven low night temperatures was highest at Brighton, 59°.7, at Preston 59°.5, at Blackheath 58°.7; and was lowest at Wolverhampton

53°.5, at Nottingham 53°.8, at Truro 54°.3. The general mean was 56°.6.

The mean daily range was greatest at Cambridge, 25°.6, at Nottingham 25°.2, at Wolverhampton 23°.1; and was least at Brighton, 14°, at Preston 14°.8, at Liverpool 15°.5. The general mean was 19°.5.

The mean temperature was highest at Blackheath, 68°.1, at Cambridge 67°.8, at Leeds 66°.5; and was lowest at Sunderland, 62°.3, at Bolton 62°.4, at Truro 62°.8. The general mean was 64°.7.

Rain.—The largest falls were 0.25 inch at Bristol, 0.20 inch at Cambridge, 0.13 inch at Hull; the smallest falls were 0.03 inch at Plymouth, Blackheath, and Sheffield, 0.04 inch at Truro, Brighton, Liverpool, Bolton, and Preston. No rain fell at Wolverhampton, Bradford, or Leeds. The general mean fall was 0.07 inch.

SCOTLAND: *Temperature.*—During the week ending August 16 the highest temperature was 81°, at Paisley; at Dundee the highest was 72°.9. The general mean was 75°.7.

The lowest temperature in the week was 47°.4, at Aberdeen; at Greenock the lowest temperature was 53°. The general mean was 50°.4.

The mean temperature was highest at Greenock, 64°.6, and lowest at Edinburgh, 60°. The general mean was 62°.3.

Rain.—The largest fall was 1.98 inch, at Greenock, and the smallest fall was 0.37 inch, at Aberdeen, The general mean fall was 1.50 inch.

JAMES GLAISHER, F.R.S.

Obituary.

THE greatest sympathy will be felt with the much respected Curator of the Royal Gardens, Kew, on the death of his wife, Mrs. MARY SMITH. Mrs. Smith died, after a short illness, on the 20th inst., in the fifty-ninth year of her age. It is not long since we had to record the death of their only daughter, and now this fresh blow has fallen on one himself sorely tried recently by ill-health.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

HERB BEER.—*P. T.* wishes a recipe for the concoction of this beverage. Can any reader oblige him?

Answers to Correspondents.

ABIES-PICEA: *Corr.* We have so frequently discussed this question that it is unnecessary to advert to it again, inasmuch as the reasons are to be found in any good text-book. Meanwhile we may say it is quite indifferent for your purpose which nomenclature is employed. We think it our duty to adhere to the nomenclature of Bentham and Hooker in their *Genera Plantarum* in all cases where we cannot show good reason for a contrary course.

ARAUCARIA IMBRICATA: *W. Wheeler.* The cones being all on the south side of the tree would seem to prove the more matured condition of the wood, and consequently of the flower-buds on that side; an effect to be attributed to the greater amount of light and warmth obtained Trees bear seed only on attaining a certain age. Your specimen was too young till now.

AZALEA AT DROPMORE: *N.* The Azalea in question was raised by Mr. Frost some years since. The flowers are nearly white, and deliciously perfumed.

CIRCULATION IN CHARA: *Microscopist.* Corti, in 1774, was the first to point this out in Chara.

COTTAGERS' SHOW AT KENSINGTON: *W. J.* sends a long explanation and apology for the way in which his exhibits were staged, which, however, it is not necessary to print.

CUCUMBER DISEASE: *E. T.* Please send a portion of the root also. The diseased condition may be the result of worms in the roots, as often figured in these columns.

FLOWER SHOW RULES: *J. C.* Unquestionably the gentleman you name cannot properly compete in Class 2, seeing that he does employ a gardener.

GRAPES: *H. Clark.* Royal Vineyard.

INSECTS: *Lostwithiel.* The Rhubarb leaf sent contained no mining larvæ, nor any trace either of their mines or of their excrement. The cause of the blistering, or rather scorching of the leaves over so large an extent of ground must be due to some other cause, perhaps from the sun shining on the leaves when wet, or from excessive radiation on a moonlight night.

NAMES OF FRUIT: *Sutton & Sons.* Green Chisel.

NAMES OF PLANTS: *X. Y.* 1, Poa trivialis; 2, Melica uniflora; 3, Festuca pratensis; 4, Holcus lanatus; 5, Avena flavescens. — *H. M. E.* Chelidonium majus, nat. ord. Papaveraceæ, not uncommon in this country in like situations. — *Clark Bros.* Pteris serrulata tremula of Moore, described in the *Journal of the Royal Horticultural Society*, n. s., iv., 38, is an accidental hybrid that originated about 1871 at Chiswick. —*D. M.* 1, a Betonica; 2, Campanula persicifolia, double-flowered white variety; 3, withered beyond recognition; 4, Sedum reflexum, fasciated variety. — *R. B.* The red plant is Orach, Atriplex hortensis; the other is Chenopodium polyspermum.—*W. G.* 1, Salvia Horminum; 2, Hibiscus Trionum; 3, Polygonum complexum. — *C. G. H.* Medicago arborea, Spiræa cantoniensis, and Raphiolepis japonica. — *C. W.* Malva rotundifolia. — *Johnstone.* Francoa sonchifolia. — *Camjee.* Ipomœa rubro-cœrulea. — *Southampton.* Crespina vulgaris. — *W. Pearson.* Adiantum cuneatum, Zephyranthes candida, and Malvaviscus mollis.—*C. W.* Hypericum elodes.—*C. M. O.* Platanthera fimbriata (United States). — *P. J.* 1, Chenopodium hybridum; 2, doubtful; 3 and 6, Chenopodium rubrum; 4, Chenopodium polyspermum; 5, Atriplex patula, var. angustifolia.

POT VINES: *Geo. Williams.* Six to eight pounds ought to swell up and colour satisfactorily at that time. Sorts that would force together with Black Hamburgh—Foster's Seedling, Buckland Sweetwater, for very early work.

PROLIFEROUS ROSES: *D. W. C.* We fear you have not read your *Gardeners' Chronicle* very carefully, as such flowers have repeatedly been figured and commented on. Nevertheless, they are always interesting. —*A. Booty.* Thanks for specimen; it is by no means a rarity.

PROTOPLASM: *Microscopist.* Von Mohl, about 1846, was the first to employ the term.

TEMPERATURE IN THE SHADE: *H. F. E.* The position of the instrument facing the north is right, but a board attains a certain warmth from the direct rays of the sun, which is imparted to the thermometers on each side. Far better hang the one required to indicate shade temperature on a wall or building facing north; and wherever placed, it should hang at least a foot distant from the shade object.

THISTLE DOWN: *B.* You need be under no apprehension; the Thistle-down which alights in your garden, from a distance, has no seed attached to it. You have only to look to be convinced of it; but probably you have, as most people do, taken it for granted that the Thistle is widely disseminated in this manner, without examining for yourself.

TODEA SUPERBA: *A. D. W.* The most likely cause for the arrested growth of your Todea which we can suggest is lack of moisture, but as we do not know the conditions of growth we cannot point out the cause more exactly. Perhaps it has got dry at the root; possibly it has been in too dry an atmosphere. It grows freely in a close damp frame, sprinkled overhead daily. It may have been caused by fumigation, which often does great damage if not very carefully performed, especially as regards the desiccation of the atmosphere.

WORMS IN GRASS: *One in Difficulties.* Try Chinese Worm Soap, to be had at a seedman's, mixed up as a sud, and applied through a water-can, or lime-water.

CATALOGUES RECEIVED.

W. PAUL & SONS, Waltham Cross—Bulbs.
ROBERT VEITCH & SON, Exeter—Dutch Bulbs.
BEN. REED & CO., Aberdeen—Flower Roots.
JAS. DICKSON & SONS, Eastgate Street, Chester—Bulbs.
DRUMMOND & SONS, Stirling—Bulbs.
S. MAHOOD & SON, Putney, S.W.—Bulbs.
B. S. WILLIAMS, Upper Holloway, N.—Roses, Fruit Plants, &c.
LOUIS DE SMET, Ledeberg les Gand, Belgium—Special Offer of Plants.
J. VAN DER SWAELMEN, Ghent—Greenhouse, Stove, and Hardy Plants.
ROVELLI FRATELLI, Pallanza, Italy—Shrub and Tree Seeds.

COMMUNICATIONS RECEIVED: T. B., Chillingham.—J. D.—H. V. & Sons.—H. R.—W. H.—H. W. W. (best thanks).—D. T. F.—Robertson Munro.—H. F. R.—J. Veitch & Sons.—J. Epps.—T. C.

Markets.

COVENT GARDEN, August 21.

BUSINESS is now getting quiet, and with extraordinary importations from the Continent prices are low all round. English Pines are in demand; no arrivals from the Azores. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0
Arum Lilies, 12 blms.	3 0	6 0
Asters, 12 bunches	3 0	6 0
Bouvardias, per bun.	0 9	1 0
Calceolaria, 12 sprays	0 4	1 0
Carnations, 12 bun.	2 0	6 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 0	6 0
Eucharis, per doz.	2 0	5 0
Forget me-not, 12 bunches	2 0	6 0
Gardenias, 12 blms.	3 0	6 0
Gladiolus, various, 12 bunches	6 0	12 0
Heliotropes, 12 sp.	0 6	1 0
Lapageria, white, 12 blooms	2 0	3 0
— red, 12 blooms	1 0	2 0
Lavender, 12 bun.	6 0	8 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 0	4 0
Pelargoniums, per 12 sprays	0 6	1 0
Pinks, various, 12 bunches	2 0	6 0
Primula, double, bun.	1 0	1 6
Pyrethrum, 12 bun.	2 0	6 0
Rhodanthes, 12 bun.	4 0	6 0
Roses (indoor), doz.	1 0	4 0
— (outdoor), 12 bun.	3 0	9 0
— coloured, doz.	2 0	6 0
Stephanotis, 12 spr.	2 0	4 0
Stocks, 12 bunches	3 0	6 0
Sweet Peas, 12 bun.	1 6	4 0
Sweet Sultan, 12 bun.	2 0	4 0
Tuberoses, per doz.	0 6	1 0
White Jasmine, bun.	0 6	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Asters, per dozen	3 0	6 0
Begonias, per doz.	4 0	12 0
Bouvardia, dozen	9 0	18 0
Calceolarias, per doz.	4 0	9 0
Chrysanth., dozen	4 0	6 0
Cockscombs, doz.	2 6	4 0
Coleus, various, doz.	2 0	4 0
Cyperus, per dozen	4 0	12 0
Dracæna term. doz.	30 0	60 0
— viridis, per doz.	12 0	24 0
Erica, various, doz.	9 0	18 0
Euonymus, various, per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	2 0	10 0
Fuchsias, per doz.	3 0	6 0
Heliotrope, doz.	3 0	6 0
Hydrangea, per doz.	9 0	18 0
— paniculata, doz.	12 0	24 0
Lilium longiflorum, per dozen	6 0	18 0
— lancifolium, doz.	6 0	18 0
Marguerite Daisy, per dozen	8 0	12 0
Mignonette, per doz.	3 0	6 0
Myrtles, per doz.	6 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums (show), per dozen	4 0	9 0
— scarlet, per doz.	2 0	0 0
Petunias, per dozen	3 0	6 0
Rhodanthes, p. dozen	4 0	6 0
Solanums, dozen	9 0	15 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	2 0	4 0
Figs, per dozen	1 0	1 6
Grapes, per lb.	1 0	3 0
Kent Filberts, lb.	0 7	0 8
Lemons, per case	10 0	14 0
Melons, each	2 0	3 0
Pine-apples, Eng., lb.	4 0	5 0
Peaches, per doz.	2 0	13 0
Plums, ½-sieve	4 0	9 0

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0
Asparagus, English, per 100	3 0	5 0
Aubergines, each	0 4	..
Beans, French, lb.	0 4	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 0	1 6
Carrots, per bun.	0 6	..
Cauliflowers, English, dozen	3 0	4 0
Celery, per bundle	1 6	2 6
Cucumbers, each	0 6	1 0
Endive, French, per dozen	2 6	3 6
Garlic, per lb.	0 6	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	3 0	4 0
Lettuces, Cabbage, per dozen	1 6	..
— Cos, each	0 2	..
Marrows, each	0 2	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 0	2 0
Onions, per bunch	0 6	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 9	..
Peas, English, quart	1 6	..
Radishes, per doz.	1 6	..
Small salading, per punnet	0 4	..
Spinach, per strike	2 0	..
Tomatos, per lb.	1 0	..
Turnips, new, bun.	0 8	..

POTATOS.—Old Potatos finished. New—Jersey kidneys much diseased—stopped coming; Kent kidneys, £5 10s. to £7 per ton.

SEEDS.

LONDON: *Aug.* 20.—The seed market to-day was thinly attended, and presented no new feature either of interest or importance. Some samples of this season's Clover seed have been shown, but no prices are yet fixed. Trifolium incarnatum continues cheap and abundant. Seed Rye is scarce and firm. In winter Tares the tendency is downwards, the supply for the moment exceeds the demand. For Essex Rape seed 2s. or 3s. per quarter more money is asked. Sowing Mustard is unchanged. The new blue Peas show good quality. Feeding Linseed is steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday there was a decline of 2s. per quarter on new Wheat. Foreign supplies were virtually neglected; buyers could hardly be found at a reduction of 1s. to 1s. 6d. per quarter. Flour was fully as difficult to sell as Wheat, and was quoted 6d. to 1s. under Monday se'nnight, with next to nothing doing. Maize was unchanged in value as regards round corn, but some holders required stiffer rates for flat. Beans and Peas moved off slowly, at unaltered currencies. Oats, with a very dull sale, were 3d. per quarter lower than last reported, and Lentils showed a decline of 1s. on the week.—On Wednesday the market was very flat for both Wheat and flour. Barley was steady, with a moderate enquiry. Beans and Peas were firm, but quiet. Flat Maize tended against buyers, and round corn was steady. Oats were in good supply, but prices were not further depressed. — Average prices of corn for the week ending August 16:—Wheat, 38s. 2d.; Barley, 29s. 2d.; Oats 22s. For the corresponding period last year:—Wheat, 43s. 10d.; Barley, 28s. 9d.; Oats, 23s. 2d.

CATTLE.

At the Metropolitan Market on Monday there was a slow trade for all fatted stock, but prices nevertheless were fairly sustained, especially for choice neat weights of cattle and sheep. The calf trade ruled dull. Quotations:—Beasts, 4s. to 5s. 4d., and 5s. 6d. to 5s. 10d.; calves, 4s. 4d. to 5s. 8d.; sheep, 5s. to 5s. 8d., and 5s. 10d. to 6s. 2d.; lambs, 6s. 4d. to 7s. 2d.; pigs, 3s. 10d. to 4s. 6d.—On Thursday beasts and sheep sold at Monday's prices, but trade was slow. Lambs were in poor demand, as the season is closing. The pig trade revived, all grades advancing 2d. to 4d. per 8 lb.

HAY.

Tuesday's Whitechapel Market report states that supplies were moderate, and trade good for best qualities of hay and Clover. Straw very dull. Quotations:—Prime old Clover, 95s. to 117s.; inferior, 60s. to 75s.; prime second cut, 90s. to 110s.; best meadow hay, 80s. to 100s.; inferior, 40s. to 65s.; and straw, 28s. to 37s. per load.—On Thursday there were moderate supplies at market, and trade was steady.

POTATOS.

The following are the average prices at market this week:—Magnum Bonums, 90s. to 110s.; kidneys, 80s. to 120s.; Roses, 80s. to 90s.; Regents, 90s.; Beauty of Hebron, 80s. to 100s.; and Schoolmasters, 90s. to 100s. per ton.

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CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

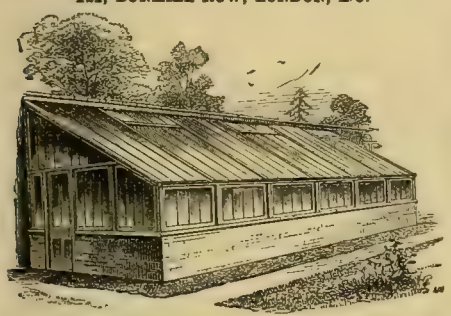
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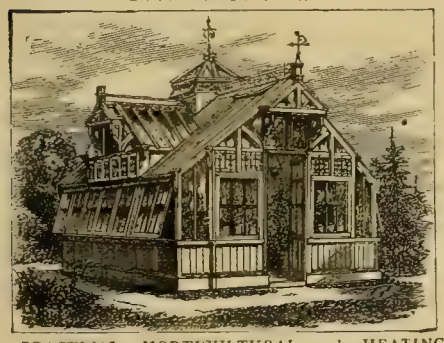
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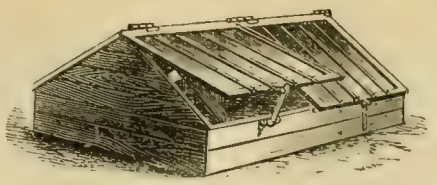
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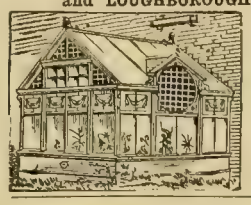
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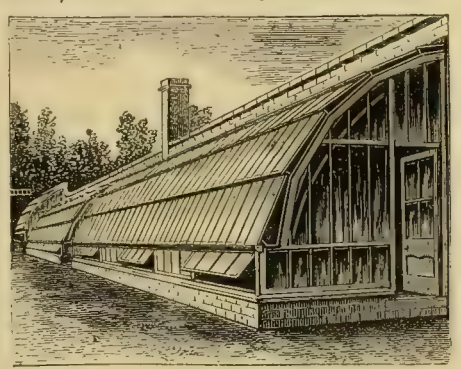


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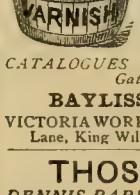
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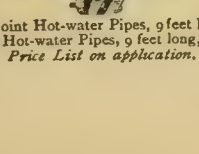
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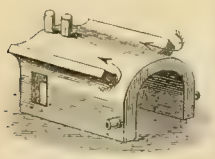
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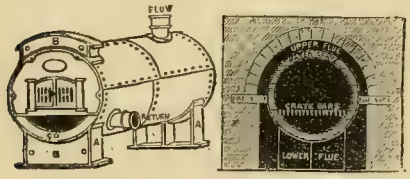
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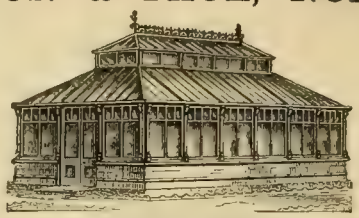
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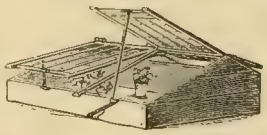


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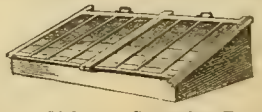


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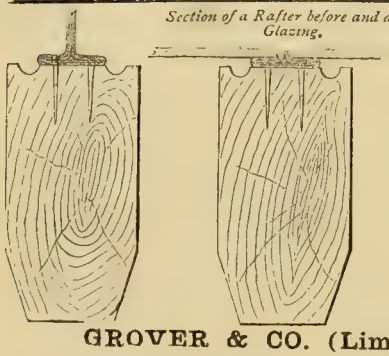
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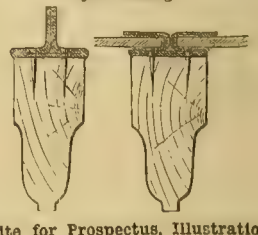
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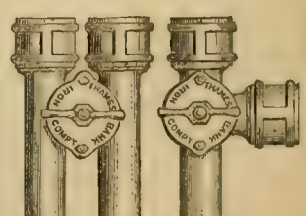
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 23, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 557.—Vol. XXII. { New Series. } SATURDAY, AUGUST 30, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. Post-free, 5½d.

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STRAWBERRY RUNNERS.—All the leading varieties, well-rooted, 3s. per 100, free. SCOTT'S WASP DESTROYER, the most effectual mixture for destroying wasps.—JOHN SCOTT and CO., Royal Nurseries, Merriott.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy, and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL and SON, Strawberry Growers, Driffield.

FOR SALE CHEAP, 30 fine Fruiting PEACH TREES in Pots.—For names, price, and description, apply to
W. JACKSON, Blakedown, near Kidderminster.

SALES BY AUCTION.

Mondays, Wednesdays, and Saturdays.
BULBS—BULBS—BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6617.)
CATTLEYA AUREA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 4, at half-past 12 o'Cclock precisely, an exra fine importation of CATTLEYA AUREA. This Cattleya is now extremely rare. Also a fine lot of ODONTOGLOSSUM SCEPTRUM, some fine LÆLIAS, ODONTOGLOSSUMS, and CATTLEYAS, &c.
On view morning of Sale, and Catalogues had.

Distinct Looking Lælia, with Leaves 20 Inches Long and 4 Inches Wide.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, a fine importation of an extraordinary large leaved LÆLIA in fine condition.
On view morning of Sale, and Catalogues had.

15 Cases of Orchids from Brazil, Burmah, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, at half-past 12 o'Clock precisely, a grand Importation of LÆLIA PURPURATA, SOPHRONITES GRANDIFLORA, CATTLEYA INTERMEDIA, C. LEOPOLDI, C. GRANDIS, ONCIDIUM CRISPUM, DENDROBES of sorts, CŒLOGYNES, CYMBIDIUMS, &c.
On view morning of Sale, and Catalogues had.

Established Orchids.—Without Reserve.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, without reserve, the COLLECTION of ORCHIDS formed by the late Alexander Gillespie, Esq., of Weybridge; also a small Collection of STOVE and GREENHOUSE PLANTS.
Further particulars in future Advertisements.

Eccleston Nursery, Prescot.

IMPORTANT SALE of excellent NURSERY STOCK, HOLLIES, RHODODENDRONS, AUCUBAS, ANDROMEDAS, YEWS, LIME TREES, CAMELLIAS, CONIFERÆ, and other valuable productions, which have been transplanted within three years.

MESSRS. ARTINGSTALL AND HIND are instructed by Mr. John Stead, to SELL by AUCTION, on WEDNESDAY, September 24, at 12 o'Clock prompt, at Eccleston Nursery, Prescot, Lancashire, about 3000 valuable EVERGREENS and SHRUBS.
The whole may be inspected one week prior to Sale, and Catalogues obtained from Mr. STEAD, or now on application to the Auctioneers, 45, Princess Street, Manchester.

Sales Every Monday, Thursday, and Saturday.
DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.
On view morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
NORTH BRAZILIAN ORCHIDS.
Unreserved Sale of an Importation received direct in splendid condition.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68 Cheapside, E.C., on TUESDAY NEXT, September 2, at half-past 12 o'Clock precisely, a magnificent importation of CATTLEYA ELDORADO, including probably such varieties as ALBA, VIRGINALIS, SPLENDENS, WALLISII, and others, many of the masses having from twenty to thirty bulbs each; CATTLEYA SUPERBA SPLENDENS, C. SUPERBA, GALEANDRA DEVONIANA, and other ORCHIDS; together about 350 lots.
May be viewed morning of Sale, and Catalogues had.

Tuesday Next.
ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 2, by order of Messrs. Shuttleworth, Carder & Co., a fine importation of CATTLEYA MENDELI, C. TRIANÆ, C. CITRINA, EPIDENDRUM VITELLINUM MAJUS, and a magnificent lot of MASDEVALLIA HARRYANA, just received from the same ground as their former importations.
Also about 100 lots of ESTABLISHED ORCHIDS, several of which are in flower.
4000 IMANTOPHYLLUM MINIATUM SPLENDENS, from the Cape; and a consignment of TREE FERNS, DENDROBIUMS, and KENTIA FOSTERIANA (Palms), in store pots, received direct from Lord Howe's Island.
On view morning of Sale, and Catalogues had.

Friday Next.
CATTLEYA IMPERIALIS (fine form of C. gigas).

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 5, at half-past 12 o'Clock precisely, a very grand importation of CATTLEYA IMPERIALIS, in fine masses and splendid condition. This Cattleya is a very free blooming form of gigas, and from the locality whence they come the very best named varieties exhibited during the past years have flowered. Individually the flowers are larger and the lip more brilliant than in the ordinary form of C. gigas.
The Sale will also contain many other VALUABLE ORCHIDS.
On view morning of Sale, and Catalogues had.

Great Horticultural Sale Week.
IMPORTANT NOTICE to NURSERYMEN and FLORISTS.

MESSRS. PROTHEROE AND MORRIS beg to call special attention to the following SALES of HEATHS and other PLANTS, all of which have been arranged to take place the same week.
Their Sales for this particular week will comprise in the aggregate nearly 8000 lots, and have been arranged in this manner to enable country buyers to attend them all during the one visit to London.
Offices and Auction Rooms, 67 and 68, Cheapside, E.C.

Lee, Kent, S.E.
GREAT ANNUAL TRADE SALE.
To commence punctually at 11 o'Clock, in consequence of the unusually large number of 1140 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. B. Maller, to SELL by AUCTION on the Premises, The Burnt Ash Nursery, Lee, Kent, S.E., adjoining the Lee Railway Station, on TUESDAY, September 16, at 11 o'Clock precisely, 20,000 Winter-blooming HEATHS, beautifully grown, and well set with bloom-buds, and which are unsurpassed in the Trade, comprising:—

15,000 Erica hyemalis
3,000 ,, gracilis
1,000 ,, caffra
Large quantities of ventricosa, grandinosa, melanthera, and others
Thousands of Erica hyemalis in small pots, for growing on
1000 Epacris
1000 Decorative Palms
1000 Grevillea robusta
7000 Solanum capsicastrum, well berried
2000 Adiantum cuneatum, gracillimum, and Pacotti
1000 Cyclamen persicum
1000 Ampelopsis Veitchii
6000 Bouvardias, including the double white and red Alfred Neuner, and President Garfield
2000 Genistas

Maréchal Niel and other dwarf ROSES; 600 PASSIONFLOWERS, English grown; AZALEAS and CAMELLIAS, double white PRIMULAS, extra strong; STEPHANOTIS, HOYAS, GARDENIAS, and other Stock.
May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 61, Cheapside, London, E.C.
N.B. The Auctioneers desire to call attention to this Annual Sale. The Stock is in unusually fine condition, as in previous years, and intending purchasers are invited to inspect it.

Lea Bridge Road Nurseries, Leyton, E.
UNRESERVED SALE. EXPIRATION of LEASE.
GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS and other PLANTS, by order of Mr. John Fraser.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lea Bridge Road Nurseries, Leyton, E., close to Hoe Street railway station, on WEDNESDAY, September 17, at 11 o'Clock precisely (in consequence of there being upwards of 1100 lots), without reserve, many thousands of winter-blooming and other HEATHS, remarkably well grown, including hyemalis, gracilis, hybrida, candidissima, Parmentiera rosea, persoluta alba, and others; EPACRIS of the choicest kinds, 1500 AZALEA INDICA, 2000 CYCLAMEN PERSICUM, 1000 GENISTA FRAGRANS, Tea-scented and Noisette ROSES, SOLANUM CAPSICASTRUM in berry, several hundreds of well-grown CAMELLIAS, wsll set with bloom; CLEMATIS INDIVISA LOBATA, and other GREENHOUSE CLIMBERS; 1500 early flowering CHRYSANTHEMUMS, 200 Maréchal Niel and other ROSES, from 7 to 10 feet; a large quantity of fine plants of AMPELOPSIS VEITCHII, a variety of GREENHOUSE PLANTS, fine healthy young plants of LAPAGERIA ALBA and ROSEA SUPERBA, a beautiful lot of about 300 ARAUCARIA EXCELSA, CLEMATIS JACKMANNI, a splendid lot of variegated IVIES, and other stock.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Brunswick Nursery, Tottenham.
GREAT ANNUAL TRADE SALE of Winter-blooming HEATHS, and other PLANTS, by order of Mr. John Maller.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Brunswick Nursery, Tottenham, on THURSDAY, September 18, at 11 o'Clock precisely, many thousands of exceptionally well-grown Winter-blooming HEATHS and other PLANTS,
Full particulars of which will appear next week.

Sidcup, Kent, S.E.
GREAT TRADE SALE
Of WINTER-BLOOMING HEATHS and other PLANTS, comprising probably one of the largest Stocks ever offered in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longland's Nursery, Sidcup (about ten minutes' walk from Pope Road Station, South Eastern Railway), on FRIDAY, September 19, at 11 o'Clock punctually, in consequence of there being upwards of 1000 lots,
40,000 WINTER-BLOOMING HEATHS,
which are particularly well grown and beautifully set with flower, consisting of

15,000 Erica hyemalis
10,000 ,, gracilis
5,000 ,, persoluta alba
5,000 ,, Cavendishi
5,000 ,, ventricosa
4000 Genistas
3000 Solanums, well berried
2000 Adiantums
2000 Cinerarias
1000 Double Primulas

and other Stock.
May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.
N.B.—Messrs. Gregory & Evans in announcing this, the first of their Annual Sales, beg to call the attention of the Trade to their unrivalled Stock of ERICA HYEMALIS, GRACILIS, ADIANTUMS, &c., as advertised above, the whole being in unusually fine condition. The Stock will be offered in extra large lots and an inspection is invited.

Preliminary Notice.
The well known collection of ORCHIDS, formed by Oscar Lamarche, Esq., of Liége.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Oscar Lamarche, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EARLY IN OCTOBER, his entire COLLECTION of ORCHIDS, which enjoys a reputation probably unequalled on the Continent.

Forthcoming Sales.

MESSRS. PROTHEROE AND MORRIS beg to announce their FORTHCOMING SALES, which have been already fixed in addition to those advertised above:—
EVERY MONDAY, THURSDAY, and SATURDAY.—SALES of DUTCH BULBS, at their Central Auction Rooms.
EVERY FRIDAY.—SALES of IMPORTED ORCHIDS, at the Sale Rooms.
TUESDAY, Sept. 9.—SALE of 228 £5 SHARES in the WEST HAM GAS COMPANY, at the Swan Hotel, Shalford.
WEDNESDAY, Sept. 10.—SALE of FURNITURE and EFFECTS, at Gerner's Cottage, Loughton, by order of the Executors of the late Mr. Thos. Settles.
TUESDAY, Sept. 23.—TRADE SALE of PALMS, FERNS, and other PLANTS, at the Rose Nursery, High Street, Clapham, by order of Mr. G. B. Fischer.
WEDNESDAY, Sept. 24.—CLEARANCE SALE of the whole of the STOCK in TRADE, at the Haver Green Nursery, Ealing.
WEDNESDAY, Sept. 24.—SALE of HOUSEHOLD FURNITURE, at Harcourt House, Leytonstone, by order of the Executors of the late Mr. J. Bishop.
THURSDAY, Sept. 25.—SALE of the BENEFICIAL INTEREST in the LEASE, also the whole of the GLASS ERECTIONS and STOCK, at The Swiss Nursery, Angel Road, Brixton, S.E., by order of Mr. Dowling.
TUESDAY, Oct. 7.—SALE, at The Mart, of 12 FREE HOLD RESIDENCES in Earlham Grove, Forest Gate, all let and producing £360 per annum, by order of the Mortgagees.
Also PLOTS of FREEHOLD LAND at Walthamstow and Leyton.
FREEHOLD RESIDENCES at Leytonstone, and PLOT of GROUND at Cowes, being the surplus properties of the late Mr. J. Keates, by order of the Executors.
WEDNESDAY and THURSDAY, Oct. 8 and 9.—CLEARANCE SALE of the whole of the NURSERY STOCK, GREENHOUSE PLANTS, HOUSEHOLD FURNITURE and EFFECTS, at The Nursery, Dyke Road, Brighton, by order of the Executors of the late Mr. Thomas Killick.
TUESDAY, Oct. 14.—Sale of well grown FRUIT TREES, at Osborne's Nursery, Hampton, by order of Mr. W. Tayler.
MONDAY, Oct. 20 and four tollowing days.—GREAT SALE of about 10 acres of unusually well grown NURSERY STOCK, at the Nursery, Wimbledon, by order of Mr. D. Thompson.
WEDNESDAY and THURSDAY, Oct. 29 and 30.—FINAL CLEARANCE SALE of the NURSERY STOCK, at the Eaton Nurseries, Norwich, by order of Messrs. Ewing & Co., the land having been sold.
TUESDAY, Nov. 4.—ANNUAL SALE of NURSERY STOCK at the Hale Farm Nursery, Tottenham, by order of Mr. Thos. Ware.

Pope's Grove, Twickenham.
Within five minutes' walk of Strawberry Hill Railway Station, and a short distance from the River Thames, Bushey Park, Hampton Court, and Richmond.

MR. J. N. GOATLY is favoured with instructions to SELL by AUCTION, at the "King's Head" Hotel, Twickenham, on TUESDAY, September 9, at 2 for 3 o'Clock, in Two Lots, valuable FREEHOLD BUILDING LAND, fully ripe for immediate development, having a splendid frontage of 375 feet to Pope's Grove, and an average depth of about 115 feet, and suitable for the erection of Villa Residences, for which there is a great demand. There is a choich plantation of Fruit Trees in full bearing along the rear of this lot. Also about 1½ Acre of a FREEHOLD enclosed FRUIT GARDEN, with a variety of Choice Trees thereon, having an entrance with a frontage to Pope's Grove of 50 feet well suited for a Nursery, Florists, &c., or for the erection of a Private Residence where any one desires spacious grounds.
May be viewed at any time prior to the Sale, and particulars and conditions of Sale obtained at the "King's Head" Hotel, Twickenham; of W. G. SLACK, Esq., Solicitor, 38, Guildford Street, Russell Square, London, W.C.; and of the Auctioneer, Twickenham Green.

Valuable Specimen Orchids.

MESSRS. SMITH AND DEWAR beg to intimate that they are honoured with instructions to OFFER by AUCTION, on THURSDAY, September 18, at 12 o'Clock, within 79, George Street, Edinburgh, the greater portion of the important and valuable
COLLECTION of SPECIMEN ORCHIDS,
grown at Newbattle Abbey Gardens.
The plants are all in splendid health and condition, and include amongst others several fine specimen Vandas, including the Dalkeith tricolor and Veitch's suavis, and a fine variety of Vanda cœrulea; grand specimens of Cœlogyne cristata, Dendrobium fimbriatum, occultum giganteum—magnificent variety; grand specimen, with over forty bulbs and twenty new growths; also Dendrobiums densiflorum and Wardianum, Masdevallias Veitchiana, Lindeni, Harryana, Chimæra (true), Chimæra Backhousiana, Walhsii, bella, &c. Also many fine Odontoglossums, Alexandræ, Pescatorei, Andersoniana, Sanderianum, &c.; Cypripediums, Cattleyas, Lælias, &c.
Catalogues in course of preparation, and will be forwarded on application to Mr. PRIEST, Gardener, Newbattle Abbey, or to the Auctioneers.

MESSRS. GREGORY AND EVANS'
GREAT SALE OF ERICAS
will take place on FRIDAY, September 19,
when the following first-class goods will be offered by
MESSRS. PROTHEROE & MORRIS:—

15,000 HYEMALIS.
10,000 GRACILIS.
5,000 PERSOLUTA ALBA.
5,000 MELANTHERA.
5,000 CAVENDISHII.
5,000 VENTRICOSA.
4,000 GENISTA.
3,000 SOLANUM.
2,000 ADIANTUM.
1,000 Double PRIMULA.
2,000 CINERARIAS.

CATALOGUES will shortly be issued.
Longlands Nursery, Sidcup.

Preliminary.

SALE of an IMPORTANT COLLECTION, comprising Several Thousand Choice and Rare ESTABLISHED ORCHIDS, in first-class condition; and a large number of IMPORTED PLANTS.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from the Executrix of the late Mr. George Toll, deceased, to SELL by AUCTION, on TUESDAY and WEDNESDAY, September 9 and 10, at their large rooms, 45, Princess Street, Manchester, a Finely Selected Lot of Good ORCHIDACEOUS PLANTS. Catalogues are in course of preparation.

For further particulars apply to Messrs. S. SIMPSON AND SON, Solicitors, 15, Southgate, King Street West; or to the Auctioneers, 45, Princess Street, both of Manchester.

Kent.

FOR DISPOSAL, a thoroughly genuine and very old-established NURSERY and FLORIST'S BUSINESS, part Leasehold and part Freehold, with a good Market Connection. Terms moderate, and can be arranged.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

To Nurserymen and Florists.

TO BE SOLD, in consequence of owner retiring, about 4 Acres of GROUND, having been for years under profitable cultivation, together with Span-roof Houses, Heating Apparatus, and the Stock, comprising some of the choicest Flowers, Ferns, and Orchids; 10 roomed House, conveniently arranged; and over 1000 feet run of Nursery Beds. Lease 74 years, from Christmas last, at the nominal rent of £35 per annum, tithe free. Within ten minutes' walk of a Railway Station in South-eastern District, and 6 miles from Covent Garden.

For price and further particulars apply to Mr. WILLIAM H. HUGHES, Solicitor, 2, Adelaide Buildings, London Bridge, E.C.

FOR SALE, or to LET on Lease, a 7-roomed COTTAGE Residence, with Land and Glass Houses. Six minutes from Hampton Station.

JOHN EMBLETON, Suffolk House, New Hampton.

TO BE LET, on LEASE, with Immediate Possession, capital NURSERY GROUND, partly stocked, with 5 large Glass Houses or Forcing Pits, and Heating Apparatus to same, with large Dwelling House and suitable Outbuildings, Sheds, &c. The whole covering about 1 acre. Situated within about a mile of three Railway Stations, and about 5 miles from London.

For particulars, apply to Messrs. LANDER AND BEDELLS, Surveyors, 6, John Street, Bedford Row, W.C.

TO BE LET, on LEASE, a Range of SPAN-ROOFED HOUSES, 14 feet wide, 150 feet long. Heated with two Saddle Boilers.

Apply, FITZJOHN, The Vineries, Northumberland Park, Tottenham, London (3 minutes walk from Park Station, G.E.R.).

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

New Illustrated Catalogue.

JOHN MATTHEWS, Royal Pottery, Weston-super-Mare, having issued a New Illustrated CATALOGUE of Terra Cotta Vases, &c., begs to intimate that all previous ones are withdrawn from this date.—August 25, 1884. Price List of Garden Pots, &c., Illustrated Catalogue, 1s. 6d.

New Silver-edged Bedding Geranium,

MADAME SALLERAI. — This splendid variety only wants to be well known to be generally grown. For full description see page 21 of my CATALOGUE. Cuttings, 1s. 6d. per dozen, 4s. per 100, 30s. per 1000.

W. M. CROWE, Boleyn Nursery, Upton, Essex.

PRIZE COB FILBERT TREES.

Gentlemen desirous of obtaining the true

WEBB'S PRIZE COB FILBERT TREES

for Autumn and Winter Planting, should send their Orders as early as convenient to

Mr. COOPER, F.R.H.S.,

CALCOT GARDENS, READING, BERKS,

of whom alone the various sorts can be obtained.

Price LISTS on application.

BULBOUS FLOWER ROOTS

A VERY EXTENSIVE & VERY SUPERIOR STOCK

EMBRACING

HYACINTHS LILIES CROCUS TULIPS &c

IN MOST CASES

FREE BY POST OR RAIL

PRICE CATALOGUE POST FREE

JAMES DICKSON & SONS

"NEWTON" NURSERIES 108 EASTGATE ST. CHESTER

DAFFODIL, or GARDEN NARCISSUS.—Our Collection of these charming and fashionable flowers includes all the finest sorts in cultivation at moderate prices.

☞ Awarded a Banksian Medal for our exhibits of Narcissus 1883 and 1884) by the Royal Horticultural Society. "A fine display was made by Messrs. Collins & Co. with various kinds of *the finest Daffodils.*"—*The Garden*, March 29, 1884.

Special quotations for large quantities to naturalise.

CATALOGUE of above and other Bulbs, with over 100 illustrations,

COLLINS BROS. AND GABRIEL, Bulb Growers and Importers, 39, Waterloo Road, London, S.E.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25*s.*, free on to the following rails:—Great Western, Great Northern, Great Eastern, London and North-Western, and Midland, other lines 30*s.*, in sacks 1*s.*; 30 sacks £1 5*s.*; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

COCOA-NUT FIBRE REFUSE, best quality, as supplied to the principal Nurserymen and Nobility, 1*s.* per Bag; 15 Bags, 14*s.*; 30 Bags, 25*s.*, sent to all parts; Truckload, 25*s.*, free to rail. Best LOAM and PEAT.

A. FOULON, 32, St. Mary Axe, London, E.C.

ORCHID PEAT, PURE BRACKEN FIBRE (NO DEALERS SUPPLIED).

MR. EPPS informs his Friends that he is now enabled to execute all orders for this article most satisfactorily.

Depôt—Ringwood Station, Hants.

EPPS'S SELECTED PEAT.—Forty sacks, 4 bushels each, 2*s.* 6*d.* per sack; thirty, 2*s.* 9*d.*; twenty, 3*s.* 6*d.*; ten, 4*s*; five, 4*s.* 6*d.* Sacks 6*d.* each.

Excellent PEAT for Rhododendrons and common purposes, 56*s.* per truck, 14*s.* per ton. Sample sack 2*s.* 6*d.*

LOAM, SAND, CHARCOAL, SPHAGNUM, &c. See Special LIST. Also for the Trade.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1*s.* 3*d.* per sack; 10 for 12*s.*, 15 for 17*s.*, 30 for 30*s.*; all sacks included. Trucks (loose), 33*s.* Selected Brown Fibrous Peat, 5*s.* per sack; 5 for 22*s.* 6*d.* Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; sacks 4*d.* each. Coarse Silver Sand, 1*s.* 6*d.* per bushel, 25*s.* per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1*s.* per bushel. Chemical MANURES. Fresh Sphagnum, 6*s.* per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8*d.* per lb.; Specialité Paper, imported solely by us, 10*d.* per lb., 28 lb. 21*s.* Shading materials of all kinds. Write for Price LIST.—W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.

12-oz. Sample Packets, free by post. 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons.

WALKER AND CO., Farnborough Station, Hants.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), LIMITED,

THE VINEYARD and NURSERIES,

GARSTON, LIVERPOOL.

BEESON'S MANURE

Is the best for all Horticultural Purposes.

In Tins, 1s. and 2s. 6d. Sealed Bags, ½ cwt., 8s.; 1 cwt., 13s.

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THE QUEEN'S SEEDSMEN,
READING.

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FOR AUTUMN AND WINTER.
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FERNS, MAIDENHAIR, &c., in great variety; also STOVE and GREENHOUSE PLANTS.
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Roman HYACINTHS, SNOWDROPS, and DAFFODILS, at Wholesale Prices.
Imported BULBS exceptionally fine this season.
Catalogue sent gratis on application to
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CARTERS' CATALOGUE
OF
Bulbs and Roots of Winter and Spring Flowers,
Gratis to intending Purchasers.
SEEDSMEN BY ROYAL COMMAND,
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1884.—New Bulb Catalogues.—1884.
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Copies will be Posted upon application.
THOMAS S. WARE,
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JOHN LAING & CO.
Collections of 1 dozen, named, our Selection:—
Singles, A 42/-, B 36/-, C 30/-, D 24/-, E 18/-, F 12/-
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Singles, G 21/-, H 18/-, J 18/-, K 12/-, L 9/ per doz.
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Singles, for Bedding, M 40/-, N 30/-, O 24/- per 100.
Begonia Growers, Forest Hill, S.E.

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Now Ready. SPECIAL OFFER, No. 41, of Choice, Rare, and Beautiful
FERNS AND SELAGINELLAS,
Carriage Paid, embracing many of the most lovely and desirable in Cultivation.
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LARGE CATALOGUE (Price 1s.), containing 75 Illustrations of Ferns and Selaginellas, valuable "Hints on Fern Culture," and other useful and interesting information.
W. & J. BIRKENHEAD,
FERN NURSERY, SALE, MANCHESTER.



THE
Gardeners' Chronicle.
SATURDAY, AUGUST 30, 1884.

COBHAM HALL.

THE shores and river banks of Kent are washed by 80 miles of the sea and 40 miles of the river Thames, and as part of the metropolis has spread into Kent, and the lines and branches of two great railway companies cross the county, which is famous for the fertile soil of its farms and gardens and for its scenery and heathfulness, it is not surprising that Kent should be a favourite place of residence, abounding in "stately homes." Cobham Hall is one of the most famous of its country houses, and until the extinction of the family of the Earl of Darnley's predecessors Cobham had afforded a seat and a surname for centuries to that noble and splendid race of owners whose ashes now repose in the village church under the famous Cobham brasses.

The name is said to have been derived from the Saxon "*Copt*," a head, and it was formerly spelt Coptham, that is, the head of a village. The place has been called the cradle of eminent men, and it would be long to relate the names and services of the worthies of this family who served the state in high offices between the reigns of John and Elizabeth. The Cobham brasses, the most numerous and perfect collection of such memorials that any church or family can boast of, would assist the recital. Close by them is the beautiful monument of one of the latest heiresses of the Cobham family and her husband, whose recumbent figures are carved in marble, while around them are fourteen kneeling effigies representing the ten sons and four daughters who had blessed their union. The line seemed secure. One of the sons entertained Queen Elizabeth at Cobham Hall in 1559, the first year of her reign, and fortune still was smiling, but in 1603 the last year of the same reign, Henry, Lord Cobham, was deprived of his estates, and his brother George was executed for complicity in the alleged plots of Raleigh, and, to continue the sad story, in 1619 this same Lord Cobham, the last of his long line, died in great misery and poverty. Sir Bernard Burke's *Vicissitudes of Families* does not afford a more terrible example of ruin than that of the fall of Lord Cobham. He had betrayed and brought to the scaffold his friend, the accomplished Raleigh, and his own brother, and he had survived his disgrace and lived to be relived by scraps of food supplied to him by a former servant. The tragedy shows darker on account of the accident of Secretary Sir Robert Cecil, who countermined so many plots, including that of the Cobhams, having married their sister.

The title of Baron Cobham, of Cobham, in Kent, which is now borne by the Duke of Buckingham, is derived from his ancestor, Sir Richard Temple, of Stow, who was created Lord Cobham in 1718. The representative of the ancient family who have now owned Cobham during more than 150 years, is the sixth Earl of Darnley.

The house, which is partly of the older

Tudor, and partly of a later period, possesses the convenience of three railway stations within 4 miles, including Gravesend and Strood. It is a wealthy and a happy country, fertile and beautiful. Immediately around the house, outside its lawns and gardens, there are about 1500 acres of up-and-down land, hill and dale, which have been in park since the earliest times, and here the public may enjoy, within 20 miles of London, by favour of a liberal Tory Lord, one of the most picturesque parks in England, stocked with deer, and beautifully planted with woods and groups of noble timber. In the woods on the north side of the park, near the village of Shorne, which is close to the great Dover road and about a mile from Gad's Hill, there are 5 miles of Rhododendrons, that is of walks open to the public and all aglow, in May, with the bloom of that glorious shrub. On this light good land the Rhododendron grows like a weed, so that the boasted splendour of the Cobham of old times has been at length, in these better days, eclipsed by the beauty of a single flower. The Tulip, too, blooms in May in the shrubberies around the house most gorgeously. All timber trees thrive in the soil that suits this splendid evergreen and still more brilliant bulb. The Chestnut, in underwoods planted for hop-poles on the estate, which stretches without a break from the Thames to the Medway, has yielded between £60 and £70 per acre for eight years' growth of the wood. The same soil, light but good, has produced the "Three Sisters," in the park, and many other gigantic specimens. It bears, too, a towering avenue of Lime trees, in stately rows leading from the village of Cobham to the house, and numerous grand Cedars of Lebanon which abound in the shrubberies and are scattered here and there in the park and lawns about the mansion. There are Beeches as in other chalk districts, and probably the biggest Oak and Ash trees are on the heavier spots of land. The numerous nests of the heronry in the park are built on tall Ashes, in a grove on one of the slopes overlooked from the high ground adjoining the house.

From the highest knoll in these planted pleasure grounds of 40 acres above the house there are delightful vistas and views, including the park in the foreground and 10 miles of the outer country, with the three towns of Chatham, Rochester, and Strood, situated close together, so that Rochester Castle and Cathedral and the mercantile shafts of Strood and Chatham look like one group of buildings. A more delightful shrubbery—entered, too, directly from the house — can hardly be conceived. Under the guidance of Mr. Deuxberry, the head gardener, I could willingly have lingered longer among the numerous handsome specimen trees, which the owners of Cobham have planted on a soil that only a few things refuse to flourish in. One secluded part of the ground, near the kitchen garden walls, is kept as a parterre, and is rich in exquisite carpet bedding and trained Roses, and in the midst of it is a pyramidal Salisburia adiantifolia, growing as a standard, and sweeping the ground with its luxuriant branches. It is 60 feet high, and as happy and hardy as any Oak on the estate. An Ilex in the bank of shrubs and trees which enclose this garden is one of the tallest and largest in the country. It is 80 feet high. Passing on, sometimes climbing, sometimes winding, or again descending—for Nature has rolled the ground about in a very pleasing manner—walking sometimes on gravel paths, sometimes on turf, we notice a number of trees of special beauty or size, and among the rest the Liquidambar, Plane, Tulip, Taxodium sempervirens, Fern-leaved Beech, flowering Acacias, and beyond all—beyond any similar display I have seen for their number and size—the Cedars of Lebanon. The soil has not sufficient depth on this higher ground to produce huge trunks containing a large quantity of timber, and the trees are many headed, such as the snow rests upon in winter, weighing the lower branches to the ground. They are magnificent. Radiating upwards from near the ground the numerous branches extend high and stretch far and wide, some of the trees covering a space 50 yards in diameter. Boldly placed among the rest, at a proper distance apart for their full development, the two largest Cedars of all seem to be keeping watch and ward over a little two-storeyed Swiss châlet placed in their rear, and cheerfully painted and varnished, with a crest above the front door —a rampant lion. This is the summer-house which stood some years in the garden at Gad's Hill, and in that lower room Charles Dickens loved to sit and write his stories, or smoke a cigar perhaps on summer evenings.

A flock of forty or fifty wild turkeys, which grow tamer, but still must be shot for the table at Christmas, rambles here among the shrubs. In the kitchen garden Mr. Deuxberry wields the magic wand of skill over 6 acres, including 4 acres within walls. I looked through many houses — three Peach-houses, four vineries, two houses for plants and cut flowers, an Orchid-house and Pine-house — and glanced into many frames, where so much may be done, as gardeners well know. A Pine and a Cucumber are at command every day in the year. The earliest Grapes, Black Hamburgh and Foster's Seedling, are cut by May 10; then follow Muscats and the Madresfield Court Grape, from August 10 till February, with the latest sorts, Black Alicante, Lady Downe's, and the white Grape Trebbiano. These ripen in October, and are sent to the table up to June 1. Lady Downe's and Black Alicante have been cut here on December 27, and hung up and kept in good condition till June 12.

It may prove interesting if I briefly add that on the day of my visit a game of cricket was played in the park between Cobham and the officers of the Engineers from Chatham. The Earl of Darnley was presiding at the short luncheon in a tent on the ground, and his youngest son was among the players. The noble lord delights in the happiness which such parties afford. On leaving the park regretfully, the cheerful spectacle of tents and players and numerous on-lookers looked gay in the distance, and the strains of one of the best of the military bands fell on the ear. *H. E.*

New Garden Plants.

CALANTHE CURTISII (*Rchb. f.*), *n. sp.**

THIS is a curious plant and rather pretty, though by no means a grand thing. Its long petiolate cuneate oblong acute leaves and the lax inflorescence make one think of Calanthe puberula, Lindl., but there is a different lip and a spur. The flower itself is much like those of certain varieties of Calanthe Textori, Miq., but it has a totally distinct singular spur, rather thick, sulcate, unequally bilobed at the apex. Lip with a very short, rather triangular blunt lobe on each side of the base. Mid lacinia cuneate, dilatate from the narrow base to the wide, blunt, emarginate anterior part. Sepals lanceolate acute. Petals broader. The callosity is very characteristic. The body is cordate at the base, and runs out into three shanks. The lateral ones are triangular, blunt acute, with transverse sulci. The mid one is filiform, sigmoid, sulcate. The long-stalked ovary is rosy and puberulous. Sepals and petals rosy outside, white inside, petals and lateral sepals with rosy borders. Lip's blade yellow, with purple callus. Column white and rosy. It is one of the numerous interesting Sondaic things sent by Mr. Curtis to Messrs. J. Veitch & Sons, with whom it is now in flower (August). *H. G. Rchb. f.*

* *Calanthe Curtisii*, n. sp —Foliis longe petiolatis oblongis acutis; pedunculo puberulo apice racemoso; bracteis lanceolatis acuminatis ovaria pedicellata puberula non æquantibus; sepalis lanceolatis acutis parce velutinus, petalis latioribus; labelli laciniis basilaribus angulatis brevissimis; lacinia mediana longe cuneata oblonga emarginata obtusa; callo postice emarginato trifido in basi; lacinis lateralibus obtusangulis, transverse sulcatis; lacinia mediana lineari flexa transverse sulcato, calcari cylindraceo longitudinaliter sulcato, emarginato; ovario pedicellato breviori.—Insul. Sond. Curtis (h. v. c. a cel. merc. Lond. Veitch). *H. G. Rchb. f.*

PHALÆNOPSIS VIOLACEA (*Teysm. Bind.*) VAR. BOWRINGIANA.

Mr. W. Bull sends me a flower of a glorious variety of this fine species, coming from Mr. J. C. Bowring, Forest Farm, Windsor Forest. It is of a pure light yellow, with a very broad dash inside each of the lateral sepals, and some fine bands and numerous freckles of the same colour at the base of the petals and base of the upper sepal. It is dedicated to my highly valued correspondent, Mr. J. C. Bowring, one of those collectors who know and consult books. I find in my herbarium some fine varieties—1, Bellina—near this, but without the blotch at the base of the petals and sepal; 2, punctata—sepals and petals fine yellow, white at the base, with a disc of small purple spots on the lateral sepals inside; 3, chloracea—white, with purple disc on the lateral sepals inside the inner margin, and green tips to the sepals and petals. *H. G. Rchb. f.*

HORTICULTURAL NOTES IN RUSSIA.

THE International Exhibition, as we have before shown, was a great success, and reflected credit upon those concerned in its organisation and management. Dr. Regel is particularly to be congratulated, as he conceived and organised the first International, which he made a success in spite of an enormous amount of ridicule. It was considered an impossibility to get together an exhibition so far north as St. Petersburg, but now a second success has shown to the contrary. There has been some wonder why it should take place so early in the year, but there is ample reason in the fact that all who possibly can do so, leave the town for the country on the approach of summer, so that later there would have been but a small attendance. A few things there were that could not be referred to in the report already published in our pages, and to a few of them we shall now return. In the stove-house, apparently a late arrival, we found Kinkerflue's Patent Hygrometer, constructed by With. Lambrecht, of Gottingen. The indicator shows at once, on a disc, the degree of moisture, and if reliable in its action, this is the kind of instrument that could be used practically in gardens. By a Russian exhibitor was shown a complete set of implements and materials for gathering and arranging flowers, all conveniently contained in a box which opens into four parts, displaying at a glance the whole of the things contained. We were greatly pleased with a specimen of Sciadopitys verticillata which had been cultivated for twelve years in an apartment. It was about 3½ feet high, perfect in form, with long well developed leaves, and only in a 24-sized pot. Among other Coniferæ was Dacrydium cupressinum, which, considering its graceful beauty and distinct habit, is far too rare with us. Among the exhibits of pottery was an apparatus for testing seeds. It consists of a disc of porous earthernware, with many numbered cells on its upper surface. In those cells the seeds are placed and the disc is set in a shallow saucer of water. The Japanese exhibit was always interesting, and on our last visit we found roots of Lappa major, which in shape are like a long Carrot; the next thing to observe afresh was the fruit of Pyrus ussuriensis, which is like a large brown Apple in size and shape. This species is figured in Regel's *Gartenflora*, 1861, 345, and has been introduced to this county. An exhibition of Coffee in a large ornamental pavilion proved highly attractive to visitors. Coffee was shown in all its various forms by the Society "Centro da Lavoura e Commercio" of Rio Janeiro, who occupied the entire building. Cups of first-rate coffee were handed gratis to all who would try the quality, and the beans of a large number of kinds were shown in open bags. The kind which most attracted our attention was the "Maregogipe" which though not the best in flavour, would have, we were told, a very important future, on account of its vigour and productiveness. The beans are large and the trees come early into bearing. This kind was said to have been found wild in Brazil. *Crême du Café*, which was served as a liqueur, is a pure white liquid, not unpalat-

able, but no properties that we could discern to make it marketable. The interior of the pavilion which contained this exhibit, was rendered attractive and interesting by a number of photographs of Brazilian scenes.

Horticulture in Russia, around St. Petersburg, is carried on with energy, and it must be said with skill, for we have to remember that it is under the 60° of N. latitude, which traverses the south extremity of Greenland, where the sun in winter rises after 9 o'clock and sets before 3 o'clock, and the ground is frozen hard during half of the year, the temperature falling lower in winter than in any other country where gardening may be said to exist, where in fact the period of growth out-of-doors has scarcely a duration of four months. The spring is so short that it need scarcely be reckoned among the seasons. March and April are generally pleasant months on account of the bright days in them, but the air is still keen, and the Neva frequently covered with ice. In May the scene suddenly changes; the winter dress of snow disappears, but cold northerly winds retard vegetation. Then by a sudden transition summer commences, which, however, is but of short duration.

Nurseries are devoted entirely to plants for decorative purposes, and Roses are quite a feature, grown in a particular way, of which we shall speak under Tsarskoïe Selo. Many plants are used which would not be thought of for the purpose in England. Generally speaking the arrangements are made by putting together, bouquet fashion, a number of plants of various kinds which individually are frequently by no means perfect; but often serving a purpose by producing foliage or flowers on a long stem which reaches where it is required. The nursery of Mr. Potesta, one of the principal, may be taken as a type, though flowering plants are probably grown more extensively by Mr. Eilers. These are more nearly the same as those used for the purpose in England, and include all the best of those we have. Mr. Potesta grows the common Laurel in quantity, and there is a house filled with specimens from quite small plants to those of a large size. Hollies of various varieties are grown in a similar way, and Bay trees, Box, and Rhododendrons are also among the most important. In a warm house are splendid specimens of Cycas revoluta, some other Cycads and Palms; the Cycads are finer than the Palms, but all are in small tubs or pots. Butchers' Broom is grown in small pots, and becomes dwarfed into neat short-stemmed tufts. Another of the least expected for decorative purposes is Chloranthus inconspicuus, which is found in almost every garden, and is not at all unworthy of the purpose to which it is adapted by its dwarf habit, gracefully spreading branches, and dark green leaves. Among other plants grown extensively are Ophiopogon japonicus, with narrow grassy dark green leaves, the several kinds of Euonymus, Ophiopogon japonicus, Reineckia carnea, and of course a variety of flowering plants, among which there appears to be nothing remarkable. Bunches of blue Hepaticas are sold in the streets made up like bunches of Violets, and, in a way, take their place. Some of the plants we noticed in shops were Azaleas, Hydrangeas, Wallflowers, Mignonette, Lily of the Valley, Stocks, Roses, and Heliotrope. These were good, but Cinerarias, Forget-me-nots, and Hyacinths were decidedly poor.

The Alexander Gardens.—From a horticultural point of view these are the principal of the public town gardens in St. Petersburg, and they are altogether very satisfactory, and be it said to the credit of the Society that they are one of the outcomes of the Imperial Horticultural Society of Russia. They are laid out in the modern English style, and extend from St. Isaac's Cathedral westward to near the Winter Palace, while opposite St. Isaac's the ground widens out to the river Neva, over which a view is obtained from a large raised mound. Eastward from St. Isaac's these gardens are nearly oblong in shape, and form a frontage to the Admiralty, the spire in the centre of which is one of the principal landmarks to the stranger, as three of the principal streets, including the Nevsky Prospect, converge towards it. A fairly large variety of deciduous trees is here planted, and forms an interesting collection. On May 8 scarcely a sign of green leaves could be seen, and only about the 29th could it be said that the buds were bursting generally into leaf. This, however, was an unusually backward season. Of the few evergreen trees none were good Pinus sylvestris appeared rather yellowish, P. Pumilio not vigorous, while Thuia occidentalis was very poor, and Mahonia aquifolium had lost all its leaves, though apparently it had been protected. Abies sibirica was much injured and often cut to the ground. Among deciduous trees the Horse Chestnut and the Transylvanian Syringa Josikæa are apparently hardy, though the former we rarely noticed. The common Elder was very twiggy, without any of the strong growth it usually makes in Britain; and S. racemosa had apparently been cut down, and thus it would seem not to be quite hardy. Besides this there were several Siberian plants, as, for instance, Abies sibirica, which do not appear to stand well in the climate of St. Petersburg, though there are others, of course, that flourish perfectly. The Lime (Tilia parvifolia), like the Elder, was much less vigorous than we are accustomed to see it, though young trees were often handsome. Fraxinus americana forms a good tree, and it is interesting to note this, as F. excelsior was generally said not to be very hardy, and in the Tauride Gardens a tree was pointed out as something exceptional. Among the Acers were A. platanoides and A. tataricum, our common Sycamore apparently not being hardy. Clumps of the common Lilac were very good, and judging from the number of old seed vessels it fruits freely. One of the interesting things to observe was that Dielytra spectabilis is quite hardy, as an apparently old-established plant grew on the mound. Corydalis nobilis here grew to a great size, and among other interesting plants our notes remind us of a good specimen Potentilla fruticosa. The Beech is one of the common trees we did not find in this garden or any other, and it was said not to be hardy.

On our arrival, on May 8, a curious combination of purple Crocus and blue Scilla attracted attention, and later on, among flowers, the Hyacinths came to be very ornamental. The turf is here very poor, and except in the most neatly kept parts many weeds, such as Dock, Dandelion, and Feverfew, grow in it. A protection of litter is given during winter, and we saw it being cleared away early in May. These gardens are situated near the centre of the city, and are enjoyed by large numbers of people. They are well kept, and contain a large variety of hardy vegetation, from which instruction as well as pleasure may be derived. *R. Irwin Lynch.*

(*To be continued.*)

FORESTRY EXHIBITION.

(*Continued from p. 232*).

Tree Pests and Diseases.—Perhaps throughout the whole Exhibition no other department of practical forestry has received less attention, or is more scantily represented, than that treating of the diseases of our forest trees, and the injuries to which they are at all times exposed by the numerous pests, to which we will have occasion to refer at considerable length later on. Mr. Riley, from the Agricultural Department of Washington, is, however, one of the few who deserves great praise for the most interesting collection of forest insects he has brought forward for exhibition. These, which are neatly arranged in several glass cases, comprise numerous examples of lepidopterous and other insects, which have been found injurious to trees in the United States. The popular and scientific name of each insect is plainly given (a matter of the greatest importance in such exhibits), as well as the species of tree on which it lives. They are also shown in various stages of development, a plan which is to be highly commended, and one which is of great importance, to such, at least, as have not studied the life-history of these insects. From Berwickshire, Mr. Renton also sends a case of insects considered injurious to forest trees, but the collection, which is otherwise a most valuable and interesting one, is rendered of but little practical value, as no information regarding the different classes is given, nor, indeed, are the various specimens named, either in a popular or scientific manner.

The Pine Weevil (Hylobius abietis), which at present is attracting a more than ordinary amount of attention, is pretty well represented, as is also illustrations showing the damage done by this dangerous beetle to various coniferous trees. Not only are the weevils themselves injurious in the extreme, but their grubs are about equally so by forming galleries or tunnels in the soft wood immediately underneath the bark of the trees. The Conifers generally chosen by these beetles to prey upon are the Scotch and Spruce Firs and the Larch, but we have also found them in others, though in much less quantity. The weevil attacks the buds, bark, and even surface-roots of the tree, thus causing considerable damage by impeding the passage of the sap, the result of which is that in numerous cases the trees, after becoming gradually unhealthy, die off altogether. The best cure for this, like many other evils, is prevention; by keeping the woods and plantations in a clean healthy state (by never allowing an accumulation of dead or decaying branches, which are sure to foster the pest) the evil may, to a great extent at least, be averted, if not totally kept at bay.

A most interesting and beautifully prepared case of woodpeckers, about 200 in number, is sure to attract attention on entering the Exhibition building. These, which are exhibited by a Mr. Ramsay, of Whitehill, include birds of various sizes, and many of beautiful plumage, and are of immense value in destroying and keeping in check the various insects and beetles which prey upon our forest trees.

Mr. McCorquodale, of Scone, Perthshire, shows specimens of Larch, illustrating that fatal disease of these plantations—dry rot, as well as the various classes of soils which he believes to produce sound and unsound timber. This is a subject that we have paid a good deal of attention to, and were certainly pleased to find that our researches were to a great extent, as regards the cause of dry rot, similar to those of others who have likewise devoted considerable attention to the matter. From the specimens of soil exhibited it would appear that that containing the greatest quantity of sand produces the unsound timber, with which we entirely agree, having unfortunately too often noted the injurious results of growing Larch on dry, gravelly soils.

From the Duke of Athol's woods at Blair Athol have been sent a series of sections of Larch timber affected by both blister and dry rot. These sections, which have been cut longitudinally, so as to reveal the disease in its worst form, are from a couple of inches up to over a foot in width, and illustrate in a very remarkable manner the ravages of these diseases. Mr. Coupar, who last season gained the Scottish Arboricultural Society's Medal for a paper on the Larch disease, exhibits a series of fair drawings illustrating the Larch disease in its various stages.

Other exhibits in this way are from Mr. Kidd, one of the Duke of Sutherland's foresters, who shows specimens of Scotch Fir stems badly damaged by squirrels. These little animals cause immense destruction to several of our forest trees, more especially the Lime, Horse Chestnut, and Firs of various kinds. The latter are usually attacked at or near the top, where the succulent branches and cones often suffer severely from the gnawing propensity of the squirrels. In the case of the Lime it is the bark, which tears off in long strips, that is in request for nest forming; indeed it is no uncommon thing to find squirrels' nests almost entirely composed of this material. Perhaps no tree suffers more from the attacks of these animals than the Horse Chestnut, as in early spring, when the buds are just expanding, and consequently in a tender state, they are greedily devoured, and that in immense quantity. The only cures for these depredations are trapping and shooting; the latter is, however, preferable, and most effective if carefully carried out.

Indiarubber.—As an indirect or bye-product of the forest, perhaps there are few of greater commercial importance than indiarubber, entering, as it does, so largely into various manufactures. Of these products there are several large exhibits, including those of Messrs. Thornton & Co., the North British Rubber Co. (Limited), Messrs. Bilsland & Co., all of Edinburgh; and Mr. John Mathieson, Dalkeith. The former exhibit, which is perhaps the most extensive, is arranged in a large glass pavilion midway between the Exhibition buildings and the adjoining grounds. Within this court may be seen at a glance the numerous uses to which indiarubber is applied, such as in the manufacture of waterproof coating, toys of innumerable kinds, household utensils, saddlery and machinery fittings. Fourteen varieties of the India-rubber tree, included amongst these being our ordinary greenhouse form, Ficus elastica, are also on view, as well as specimens of the rubber in its milky state, as it exudes from the tree. One of the largest masses of vulcanised rubber yet produced is that exhibited by the North British Rubber Co. (Limited), which consists of a traction engine wheel tire about 4 inches thick, and 15½ feet in diameter. The exhibits of Mr. John Mathieson and Messrs. Bilsland & Co., are neatly set out in the western annexe, and consist principally of toys and mechanical figures, as well as various novelties in garments.

Another interesting exhibit comes from the Willesden Paper and Canvas Company, in the shape of a pavilion, the roof and walls of which are entirely constructed of their patent waterproof paper. From what we saw of this paper and the various uses to which it is applied, it should, after a fair trial, be extensively used in the construction of temporary houses, such as forester's huts, barking sheds, or any other erection of a temporary nature where a light waterproof covering is required.

From the Blind Asylum has been sent by far the largest and best assortment of basket-work in the Exhibition. Amongst these we particularly noticed several articles of exquisite workmanship, many being of an ornamental character, which for beauty of design and a clean, light appearance, were all that could be desired.

THE DEATH OF PLANTS.

LIFE is one continual series of changes—

"By ceaseless action all that is subsists."

The result of these changes is gain or loss, waste or repair, now one, now the other; or occasionally (and indeed generally) both simultaneously. While a proper balance and equitable adjustment between gain and loss exists, the plant lives and is healthy. Directly the balance is disturbed the plant may live indeed, but it becomes unhealthy; and if the disturbance continue—if waste overtake repair—if nutrition be persistently impaired, still more if it be arrested, the plant inevitably dies. This is that gradual and slow, but sure march of destiny, which comes sooner or later to all living things at their appointed time. That time comes when the tissues are—from that degeneration of their substance which may be a morbid process resulting from injury, or which may be merely the necessary result of the growth and maturation of the plant, or from the failure of supplies—no longer able to carry on their life-work. The period in question varies as to its occurrence. A Wheat plant uses up its life within a few months, an Oak tree within a few centuries, and there is every intermediate period.

But, in addition to changes which are the result of an inevitable march of events, death in plants sometimes comes suddenly from violence, life action is arrested in its full flow and tide, and by much the same essential causes as those which extinguish the life of animals. The death of plants is the death of the protoplasm. Prevent the access of oxygen to the living cell, and the movements of the protoplasm will be arrested and ultimately cease altogether. The properties and functions of protoplasm have already been explained. It is their destruction and their cessation which constitute death. But the death of a part is not necessarily the death of the whole, and the individual cells of plants are, as a rule, much more independent one of the other than are the individual cells of an animal. A root, or a leaf, or a mass of roots, and a number of leaves may be injured, or even killed, and the plant will still live on, because there are more left behind uninjured; and these, relatively speaking, do not suffer from the damage done to their fellows. A tree may be stripped of its leaves and may still live, because there are cells which are uninjured, and which will do their parts towards compensating the injury. A felled tree by the roadside will often be seen pushing up new shoots in a manner that would be impossible in the case of an analogous injury done to one of the higher animals. The lower the organism, the less special in its conformation and construction, the more independent are its constituent cells. The higher the organism, and the more specialised its structure, the more dependent one upon another are the structural elements of which it is compounded.

Natural death may be described as an exhaustion of the protoplasm—its water evaporates or is drafted elsewhere; and so with its soluble or liquid contents—the insoluble and the useless remain behind. We see this in the case of the leaves every autumn; their protoplasm dries up, their chlorophyll degenerates and disappears; they are emptied of starch and other matters, which are conveyed to some other part of the tree to be stored up for future use by the new growths in the following season, till at length nothing is left but a framework of dry cellulose, a quantity of mineral or earthy matter, and such material as could not be dissolved or transported. In other organs the continuous maturing process at length results in the blocking up of the cells and tubes by continued deposit in the interior. Osmosis can no longer go on between them, for their altered structure prevents it, and in consequence the protoplasm disappears. Just as in human beings, the minute blood-vessels get "bony," or otherwise deteriorated in structure, so do the cells and fibres of plants become unfit to carry on the processes of life.

For the purposes of the cultivator it is very desirable that he give an eye to the way in which plants die, and to the causes which induce death. The subject may be looked at from various points of view. From the structural point of view death may begin in the cells of the root, in those of the stem, in those of the intermediate "collar," or in those of the leaves, and the appearances presented will be found to differ correspondingly.

From a physiological point of view death may result from starvation or from suffocation; the process in each case may be partial and gradual or immediate and complete. Sudden death, or death by violence, results from the injuries inflicted by too high or too low a temperature, electric shocks, sunstroke, strong corrosives, and the like. These destroy life by disorganising the protoplasm, breaking up the tissues, and arresting the natural movements, and cause death by destroying the machinery or paralysing its action. The gradual effects produced by such injurious agencies as noxious vapours from kilns or factories, or as insects, or parasitic fungi, are the same as those produced by starvation or suffocation. In the neighbourhood of towns it may happen that the relative absence of oxygen, or, what comes to the same thing, the inability to use what there is, may conduce to the death of plants quite as much as the direct injury caused by noxious vapours. A perusal of the foregoing chapters as to the food and growth of plants will suffice to show why plants die; and a consideration of their life-history as here set forth will show how the cause that may kill at one stage of active growth may be all but harmless at another stage of growth.

DEATH BEGINNING AT THE ROOT.—When death begins at the root the supply of water, and of the air and food derived from the soil, is cut off, and the plant ultimately perishes of starvation. Death at the root may result from injury inflicted by small parasitic worms, insects, rats, or other creatures—from unsuitable conditions of soil, too much or too little water, deficient drainage, deficient aëration, or from the presence of really poisonous ingredients. If the cause is widespread, so as to involve a majority or the whole of the roots, the consequences are proportionately serious; if only a few are affected the plant may not be visibly or materially injured. The effects will be first and most especially obvious at the point of injury, and at the growing points where the life-functions happen to be going on most vigorously at the time. Thus, if the young shoots and young leaves are in full activity at the time when root-mischief occurs, they will the soonest show the effect of cutting off supplies—they will wither and droop. If the process is slow and gradual the leaves will become emptied of their contents, their chlorophyll will change colour, the plant will assume a sickly yellow look very characteristic to the practised eye. The older portions of the plant, with their reserve stores of water and food, may not immediately suffer; and it is from them that the materials requisite for any effort at repair and reorganisation must, if it be possible, be made. Thus a plant may grow for some time after injury, and then suddenly flag, because its reserve supplies are at length exhausted. It follows from this that death from starvation as a consequence of root-mischief is not generally a sudden, but more often a gradual process, the length of time of course varying according to the nature of the mischief, and specially according to the nature and condition of the plant.

DEATH BEGINNING AT THE LEAF.—This may be appreciated from what has been before said as to the functions of the leaf. The leaf is an organ of nutrition, of respiration, and transpiration; if its functions are sufficiently interfered with, death will result, either from inanition or from suffocation, or from both combined. The power of resistance that a leaf has may be inferred from its structure. A thick fleshy leaf, with layer after layer of chlorophyll-containing cells, with relatively few pores and a thick skin, is obviously better able to resist injurious agencies than a thin leaf whose delicate texture speedily withers and falls a prey to adverse circumstances.

The fall of the leaf in the case of deciduous trees has been already alluded to. It is only requisite here to say that, under the circumstances, it is a natural process; and it is one that is provided for from the beginning. From a very early stage in the development of the leaf, a special layer of cells has been gradually forming at the base of the leaf-stalk at right angles to the others, which ultimately cuts off the dying and dead leaf-cells from the living tissues of the bark, much as the "drop scene" of a theatre separates the body of the house from the stage at the close of the performance. The leaf is emptied of its contents, and further supplies from below are eventually stopped off by the intervention of the layer of cells above described. A similar process takes place in the disarticulation of branches and of ripe fruits.

When disease or injury affects the leaves while still growing—as in the case of noxious vapours from chemical works or kilns, or in the case of insect injury—its effects are naturally most obvious and most severe at the growing points—the tips and margins of the leaf; and when the margins become thus arrested in their growth, while the disc remains in full activity, the result is a cup-shaped appearance or a crumpled surface resulting from the dead or dying portions having lost their elasticity and acting as a curb on the still growing portions. Sun-burns, and especially the attacks of insects and parasitic fungi, are not so much confined to the margins, at least when the leaf is not in a growing state; they produce their effects in the shape of circular or irregular spots of brown decayed protoplasm. The effects of frost, and the reason it kills, have been explained elsewhere. Nothing, however, can be advanced in explanation of the reasons why some plants of the same species, like the different varieties of Wheat, are so much more tender than others. Death by the leaf is rarely immediately fatal, because there are many leaves, and they are not often all affected in the same way at the same time; and, moreover, in the case of plants other than "annuals," the fall and death of the leaves does not involve the death of the plant, as before explained. Even in the case of annuals, the life, like the nutritive matter, goes out of the leaves only to enter the seed.

Successor thus follows predecessor in one invariable rhythm, and although the limits of the individual existence can be but too readily recognised, the real end of life, so far as the whole race of living creatures—whether plant or animal—is concerned, is as incapable of being appreciated by the physiologist as is its beginning. *From Dr. Masters' "Plant Life."*

ERICA MARNOCKIANA.

INCLUDED in the valuable collection of plants belonging to S. B. Lawless, Esq., Exeter, recently sold by auction, was a splendid specimen of Erica Marnockiana, 5 feet in diameter, and 4 feet high from the surface of the soil. It represented the finest specimen of that variety in the country, and had been exhibited on many occasions by Mr. George Coles, gardener to Mr. Lawless, at the principal exhibitions in the South and West of England in the winning collections of stove and greenhouse flowering plants. As shown in the illustration (fig. 51), it is quite a model of perfection. It was purchased by B. W. Cleave, Esq., Crediton, for 7 guineas; so that it is still in good hands, and we may look forward to see it again figuring in one of the foremost of collections.

EARLY APPLES FOR THE KITCHEN.

THERE would appear to be much rather wild writing about the great wisdom of growing only kinds that mature early in the autumn, and which can be sent into the market minus the expense of storing. This may seem the right sort of culture for the man who has but small capital, and who cannot afford to wait; and even under that system if the majority of growers supplying a large town were to glut the market with kinds notoriously bad to keep, so that the consumer alone would benefit, the grower would have to be content with small returns for his produce. Moreover, the consumer would naturally wish to have fruit during the late autumn and early winter months, which would become an impossibility with our present race of early Apples, that do not keep well, and which are usually long past their best, having become partially flavourless by the end of December. We want Apples of fair size, good keepers through the winter up to April; and, if we

can get them with flesh tender and melting on being cooked, and the trees good average croppers, like the Keswick Codlin or the Cellini, we should have supplied a great public want. It is fruit which can be stored that is required in the interest of the consumer, for after Christmas Apples for the kitchen or for dessert are dear enough in all conscience. Common fruit in seasons of plenty, like that of 1883, was selling retail at 2*d.*—3*d.* per pound—that is, from 7*s.* 6*d.*—11*s.* 3*d.* per bushel of 45 lb.—when the same could be bought in the country districts at from 2*s.* 6*d.*—3*s.* 6*d.*

So that the question amounts to this :—If you glut the market with early stuff the consumer only benefits by the enforced low price ; but not for a long space of time, as a dearth must follow the season of abundance, and then is the grower's time to make money of his late fruit ; but if he has his orchard for the major part planted with the early kinds, as recommended by his would-be friends, he will have but a small quantity for disposal. It would therefore seem to be the better policy to plant in moderation sorts well adapted for the market, that will come in at all the periods when this fruit may be looked for. An idea has been mooted that early Apple trees, in consequence of the crop coming off at an early period of the autumn, mature their fruit-buds for the next year more thoroughly than is the case with trees whose crop hangs much later. I think that statement is unsupported by fact, and moreover it hardly seems to me that Nature would be guilty of such a *lache*, as in the course of maturing the one crop she at the same time placed impediments in the way of obtaining an equally good one, if circumstances were favourable, the following year. Over-cropped from whatever cause, such trees, by reason of their late blooming, and thus escaping injury from frost, or from artificial treatment as regards root-pruning, lifting, or from a natural tendency to bear over-much fruit, do refuse to bear occasionally at least in an equal degree, and take some years as recuperative periods. In those years the tree regains its vigour completely if a young one, and probably only partially if it is aged. It is a case of seed-bearing in which the young are immensely in the superior position when compared with the old. The sorts Lord Grosvenor, Lord Suffield, Keswick Codlin, Carlisle Codlin, Cellini, Red Hawthornden, are excellent in their season, but we do not want our markets depleted of such good keepers as Flower of Kent, Hollandbury, Mère de Ménage, Beauty of Kent, Rymer, Winter Hawthornden, Tower of Glamis, Blenheim, Bedfordshire Foundling, Warner's King, Prince Alfred, Betty Geeson, Winter Greening, and several others, good in quality, attractive in appearance, and pretty sure bearers in England.

The truest wisdom will be displayed in taking the middle course—planting no sorts of any particular season, but good portions of land with approved kinds that will supply our markets, and make us independent of outside supplies. Thus much we can and ought to do, and it would be considerably helped by farmers planting a few acres each, combined with or without bush fruit culture, underneath the standard Apples.

If the farmer would not like the expense and

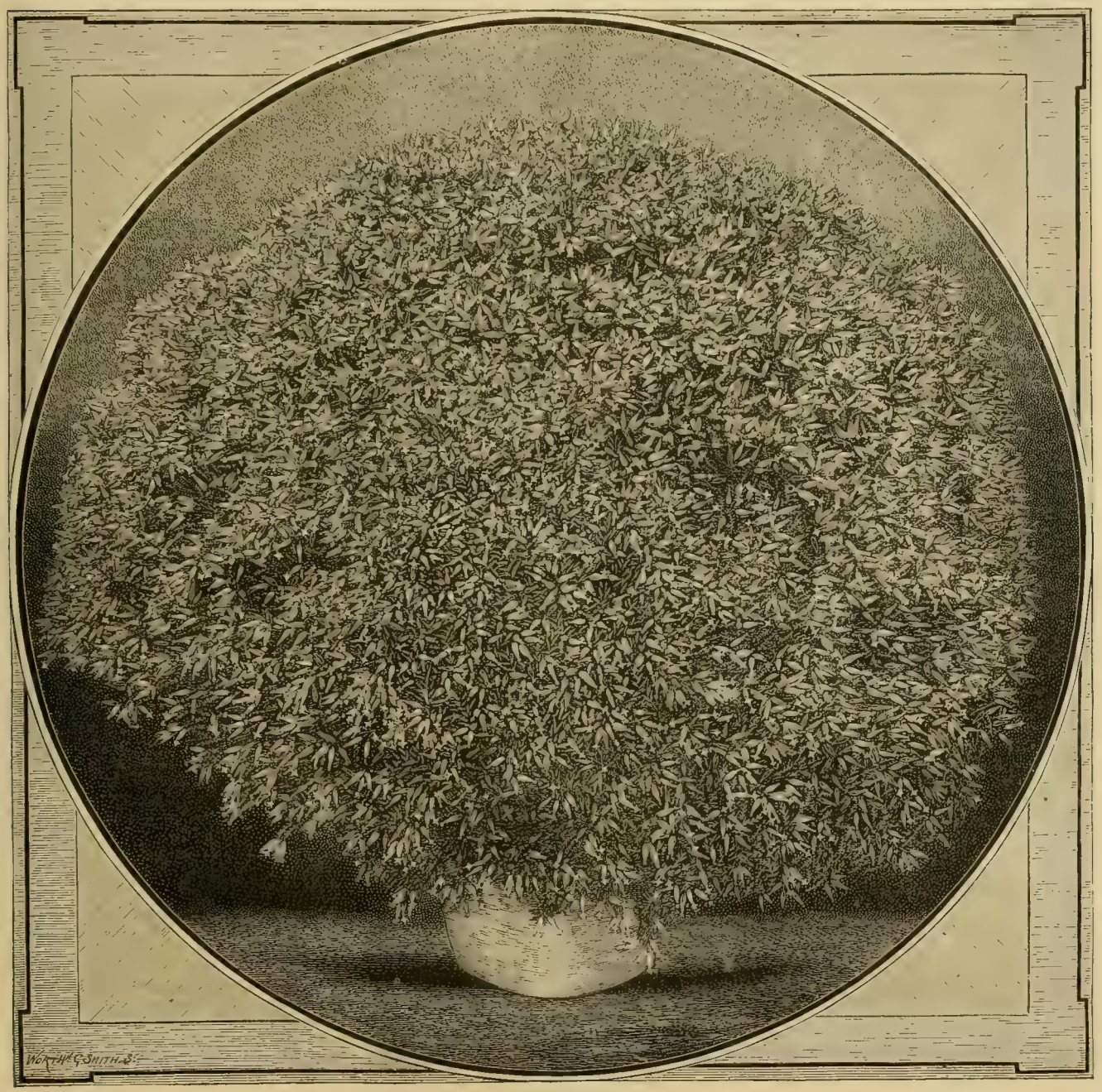


Fig. 51.—Erica marnockiana. (see p. 264.)

trouble of watching the crop when it had obtained a usable size, but was yet immature, the crop might be sold by auction as it stood, and the looking after it would then be the affair of the purchaser. *M.*

MR. BROCKBANK'S GARDEN, BROCKHURST.

AT last I got a chance of paying a visit to Brockhurst, the residence of W. Brockbank, Esq., at Didsbury, near Manchester. The name had a very familiar sound to my ear, for times without number I have corresponded with Mr. Brockbank and we have made many exchange of plants. A good deal of curiosity is excited in approach to a house under circumstances like these. A sort of fancy picture is first of all painted before the eye of the mind which is quite sure to be wrong—but the following might have been predicated to a certainty. The whole place will show proofs of a great love of flowers and plants and be very different from the bald uninteresting—albeit they may be grand—habitations which abound all over the country. I have heard a school inspector say that without opening his lips he could tell a great deal about the tone and excellence of a school, and in like manner before any special investigation has been made it can often be determined at a glance if things are going on well or ill from a gardening point of view. Mr. Brockbank's house and garden show at every turn the great interest which he takes in the cultivation of plants.

The house, which is a very interesting one, and which has been largely increased in size by its owner, is built in an irregular fashion and looks all the better for it in consequence. It is covered all over with Creepers from one end to the other, and to my mind nothing improves the look of a building more than does the fact of its being well-clothed with vegetation of some sort. The ground falls away from the house, and great advantage has been taken of this to break up the garden by long terrace walks, which are not at all stiff, but embosomed in trees and shrubs, and where nooks and corners of all sorts abound, and form the places where countless Narcissi bloom, and Hellebores just find the shelter which they require. On a little plateau which is slightly lower than the house, the frames are placed which contain some of Mr. Brockbank's chiefest delights. Some of these frames have the shelter of a long hedge, and are full of Auriculas, which are at their worst just now, but which in April and May must be captivating in the extreme. I believe the collection is a very good one indeed, and has won many a prize. There is an ingenious device about some of these Auricula frames with which Mr. Horner was much taken when he saw it the other day. The wooden sides are raised some inches, and holes are made in them; through these holes iron pins can be pushed, and the result of it is that the lights, which are glazed over, when they rest on the pins admit air only while they shut out the direct rays of the sun. It seems a very simple operation to record, but it is a very efficacious one for the purpose for which it is meant, and certainly it is not common.

A large frame of about 30 eet in length, and 6 feet in breadth, whose height at he tallest point may be about 2 feet, and at the sides 1 foot, but the inside of which is sunk below the surface to give elevation, is from every point of view the greatest success which I met with at Brockhurst. The frame itself is made upon an entirely orignal plan and answers completely—the great object being to keep off wet from the tender plants which are grown in it and which cannot bear drip. This is managed in a very ingenious manner, the lights are made to rest on a long trough of 3-inch girder iron which throws off the water below, and they close at the top just over another long trough of the same sized girder iron which disposes of it above. These useful troughs are themselves placed at a slight declination from the centre to the ends of the frame, and the result of it is that the plants are kept perfectly dry in a deluge of rain, and alpines can live here which would give up the unequal contest anywhere else and soon come to an end. Moreover, these capital frames take up very little space, they do not open outwards, which must call for more room—but the lights are lifted bodily off and are set upright against posts, and it is then easy to get at any plant or to pluck any flower that may be desired. In a frame of this sort I noticed many interesting plants—indeed it was carpeted with alpines from one end to the other—and all of them looked doing well and as though their requirements had been met. Campanula alpina was new to me, and very good; at any rate I was much pleased with the habit and silvery-grey appearance of Mr. Brockbank's little plant. It was slightly tomentose, if I remember aright, and I was very glad to be informed that a duplicate of it could be spared. Alongside of it several good Androsaces make themselves perfectly at home. A. lanuginosa and A. sarmentosa, which are very pretty if they are grown well, attracted notice at once. Androsace carnea was not quite in so happy a case, but that was, I think, only an accident, and I should expect soon to see it flourishing also. Mr. Brockbank had intentionally made the surface uneven, and Pinguicula grandiflora luxuriated in a hollow place, and seemed to be multiplying fast. Not very far off Ramondia pyenaica was also nestling therein, and I noticed some Saxifrages of the Megasæa section, which must have been grand in the spring. They need protection even in the South, for they come on so very soon in the year that the blossoms are often nipped, if not entirely destroyed, by the cruel east winds. The advantage of having some glass over their heads must be greatly appreciated by these Saxifrages, and they are worth the attention they get, for Saxifraga Stracheyi and Saxifraga purpurascens throw up fine heads of flower. Campanula abietina was new to me, and I was pleased to see it here for the first time; and C. thyrsoides, though not the most beautiful to look at, was still worth a place. Edraianthus dalmaticus appeared to be settling down in its bed as comfortably, and Genista tinctoria flore-pleno was was quite a blaze. A large plant of the white form of Primula japonica must have been very good in the spring, and was going to have seed. But I make no profession of giving an inventory of all Mr. Brockbank's treasures, and I am quite unable to remember a tithe of those which are kept in this alpine frame. It was a pleasant sight, though all the surface was covered, the plants were loosely and naturally arranged. There was no stiffness at all about them, and Nature had her way more than Art. Mr. Brockbank said that his garden was quite past its best when I saw it, and I can readily understand his meaning. He goes from home, as a rule, in the autumn, and he likes to have an outburst in March, April, and May. Ten thousand signs of this were strewn all over the place. I refer to Daffodil leaves dying down or quite dead, and to Polyanthuses, which were allowed to take care of themselves, and whose foliage was fast turning yellow. These Polyanthuses enjoy the freedom and quiet in shady spots, which they find at Brockhurst, and I am told that they rise again in their glory when spring comes round far better than if they had been kept closely in pots; and as for Narcissi, why this collection would make the fortune of any half dozen nurserymen. I am told on all hands that Narcissus Horsfieldi is becoming very scarce, and the Emperor and Empress are to be crowned in America, and that they are going there in crowds! But the English assortments are not done for yet. It is difficult to realise what this garden must be like when N. obvallaris and N. incomparabilis and cernuus and tortuosus and others far too numerous to mention, look out upon you from under many a tree, and in the broad border, or from some grassy slope. The whole air must be laden with their fragrance, and the sight must be one that is worth a long journey to see. Into any Narcissus controversy I shrink from entering, and Hellebores also warn me off, but I cannot forbear from stating one thing which seemed to be pretty plain. All leaf variations in Hellebores must count for very little. Mr. Brockbank showed me specimens of H. angustifolius, which has attracted so much attention of late, and which differed enormously in the leaf. These Hellebores are grown on to a great size in a compost of which sawdust largely makes a part. I confess I felt at first a very great prejudice against any such idea; visions of fungus present themselves at once; but the fear is illusory. All about Manchester sawdust, after it has been in a stable for some time and then exposed both to sun and rain, is very largely used, and the results speak for themselves.

I must leave it to others to record what the large glass-houses contain. Grapes seem to be grown very successfully in one of them, and Lapagerias, Yuccas, Trachelospermum, &c., were all doing well in another. But my paper is full. I would only just add that I think the Manchester people must have a great fondness for flowers. Mr. Brockbank kindly put an afternoon at my disposal, and went with me to some two or three of the little nurseries which abound in the suburbs of the great town. It was a novel sight to me to see Hellebores grown by the acre. Families in great measure support themselves by it, and Helleborus angustifolius is enthroned in the affection of many, and no competition is dreamt of as being possible with it. It is curious to see how the large clumps are cut up after flowering, and every little bit with an eye is very carefully treasured—they are all planted in sawdust. Indeed, sawdust manure and Hellebores about Manchester seem to have been made for each other, and they are absolutely inseparable. These little plants are then left to themselves, and they soon grow into money. I made the acquaintance of one poor woman who depended for her living entirely upon a few roods of Helleborus angustifolius, and this grandest of all Christmas Roses has not played her false. Mr. Brockbank showed me two or three of these Hellebore nurseries, and then we went to see one of a rather different sort. There was a good deal of enterprise in it, about which I shall not trouble your readers. I would only note one thing which astonished me at the time, and I cannot now understand. A grower of the well known Tea Rose—Niphetos—for the market in Manchester cuts buds of it by the thousand in the most stuffy and closely shut up houses that could be conceived. He allows of no ventilation whatever; every window is closed, and he maintains that in this way all insect abominations are got rid of, and buds in profusion are produced. I narrate what I saw. The Roses seemed to be all doing well under conditions which I should have esteemed to be more harmful than good. A thunderstorm cut our investigations short. I had to leave Manchester soon after, and I took away with me many pleasant reminiscences of what I had witnessed both in Didsbury and in Sale. *A Wanderer.*

(*To be continued.*)

RUDBECKIA.

THE name Rudbeckia is derived from Rudbeck, a Swede, who preceded Linnæus as Professor of Botany in the University of Upsala. He is said to have taken much trouble to prove that the Eden of the Bible was not in the district of Mesopotamia, as was generally supposed, but in Sweden. The genus Rudbeckia is not large, although in the *Genera Plantarum* it is made to include several sub-genera, such as Echinacea, Obeliscaria, Lepachys, and Centrocarpha. The members of the genus are all North American; an obvious characteristic of the flowers is the cone-shaped receptacle, surrounded by rays more or less drooping. The species here described are all perennial herbs, and have all been cultivated in the garden at Edge Hall.

R. MAXIMA.—This, the largest of the genus, in the size both of the leaf and of the flower, though not in stature, was introduced four years ago by Mr. W. Thompson, of Ipswich. It is a handsome herb, succeeding best in the warmer parts of our islands, and in hot summers like the present. The leaves, entire and ovate, rise to a height of about 2 feet, and are 1 foot long, of a handsome glaucous appearance. The flowers are produced in August and September, and are about 6 inches across, with a large dark-brown conical centre, and orange-yellow rays. The bare stalk rises about 7 feet, and is of such substance as to require no artificial support. If the summer is wet and cold the green leafy bracts of the involucrum are very conspicuous, and the rays imperfectly developed, but this year the flowers and the whole plant are very handsome.

R. CALIFORNICA.—This is the earliest in flower of the tribe, flowering from the end of June to the middle of August. The leaves are downy, dull green, ovate, either entire or with one or two irregular clefts near the base. They are large, growing, together with the stalk, nearly 2 feet high. The flower is handsome, borne singly on the stalk, and 4 or 5 inches across. The dark brown cone is of great substance, and sometimes rises to a length of nearly 3 inches. The plant is easily increased by division, and is a very good back row plant. In good rich soil it reaches a height of 6 feet or more.

R. LACINIATA.—This is the tallest and coarsest of the genus, but not without merit as a decorative plant for some situations. In moist deep soil it sometimes grows upwards of 10 feet high. The leaves are often

finely divided in curved ribbons, as the name implies, but sometimes have shallower incisions and a broad palmate form. These different shapes of leaf have sometimes been made into specific distinctions, but the leaves vary from seed of the same plant. The flower-stalk is much branched, and the flowers produced at different heights. They are from 3 to 4 inches across, of a dull greenish-yellow, with a short dull green cone in the centre, inferior both in colour and form to those of the two species before described, but far more abundantly produced, and lasting all July and August.

R. SUBTOMENTOSA is one of the latest in flower. In ordinary seasons it is not out till late in September, and the frost comes and spoils it whilst many buds are still unopened. It grows about 4 feet high. The finely divided pinnate leaves are produced all up the stalk, which is rather weak. The flowers are small, not more than 2 inches across, with a small jet-black centre contrasting well with the clear golden-yellow of the rays. The whole plant is neat and ornamental, but part of the stalks is apt to wither suddenly and unaccountably, and when it does should be cut away at once. Like the others it is easily divided.

R. PINNATA, described by Asa Gray under the generic name Lepachys, is not common in English gardens, being a plant of doubtful merit, though quite distinct from all others of the genus. The leaves are large and pinnate. The flower-stalk weak and straggling, divided, and 4 or 5 feet long. The central cone of the flower is dark and very prominent. The rays, which are about 1½ or 2 inches long, are broad, of the substance of fine paper, clear canary-yellow, and much drooping. The plant is not very good for ornament, flowering very late. It is a troublesome weed on cultivated lands in Minnesota, from which my son brought seeds which I raised.

R. SPECIOSA, commonly called R. Neumanni, is so generally cultivated as a useful autumn plant, that it is superfluous to say much about it; only the name Neumanni ought to be dropped as being of no authority, and the correct name, speciosa, universally adopted. It suffers much from drought, being a surface-rooter and delights in good soakings of water during such summers as this.

R. HIRTA is often confused with the last, of which it seems to be a more Southern form, in no respect superior. I have never succeeded in keeping it for long, and I was recently informed at Kew that though it is by nature perennial, it is treated as annual in the gardens there, and never survives winter.

R. FULGIDA, sometimes separated as Centrocarpha, which I have more than once raised from seed, is another plant which seems to require hotter summers than it generally finds in Cheshire, but where R. speciosa does well the inferior plants, R. fulgida and R. hirta, need not be regretted.

The genus Echinacea, formerly separated from Rudbeckia, but now rejoined with it by the authors of the *Genera Plantarum*, contains two or three ornamental plants, having dark purple flowers, with stiff, thickly-set rays, each flower having a duration, if the weather is fine, of two or three weeks. They are natives of the warm States of North America, and requires a rich soil, a warm situation, and a hot summer, to bring them to perfection. They are showing to advantage at present even in my Cheshire garden. The largest, R. purpurea, is about 4 feet high; two others—R. intermedia and R. angustifolia—are hardly more than half the height, and produce flowers in greater abundance. None of the sections are common in English gardens, as they increase slowly, and do not seem to make good seed in our climate. *C. Wolley Dod, Edge Hall, Malpas, August* 25.

IXORA MACROTHYRSA.—Amongst the numerous Ixoras in cultivation this one should receive a prominent position in the stove or warm conservatory. It is a comparatively recent introduction from Sumatra, and is possibly better known under the garden name of I. Duffii. In general appearance the plant is very distinct, owing to the immense leaves and almost unbranching character of the stems. This, coupled with the huge panicles of intensely scarlet flowers, constitutes it a subject of unquestionable value for any place where space can be granted, especially in the way of head-room, to develope itself. No pinching or pruning should be resorted to, otherwise the truss will be feeble, if even the plant flowers at all. A bold and desirable specimen is flowering in the Victoria-house at Kew, where the scarlet flowers are very conspicuous against the background of evergreen foliage.

FLOWERS IN SEASON.

ROMNEYA COULTERI.—It is not very often that we see in the purlieus of Mud-salad Market this very beautiful Poppy. Its leaves are cut like those of an Eschscholtzia; the flowers measure some 4 inches across, with the petals of pure white, crumpled like tissue-paper, and surrounding a crowd of delicate staminal threads of a golden-yellow above, purple beneath. These surround a thick truncheon-like ovary, studded with appressed hairs, and capped by a thick cushion-like stigma. A great beauty, sent us from the Isle of Wight by the Rev. H. Ewbank.

CAPPARIS SPINOSA.—Regard for truth makes us hesitate to include this under "Flowers in Season," for there have previously been only two seasons in which we have been privileged to see this plant in bloom, and then not here, but down South, along the Mediterranean coast. It was sent to us this time from down South, but no further off than that island of the blessed which sailors call "the Wight." Mr. Ewbank tells his own story in another column.

CALCEOLARIA SINCLAIRII. — A half shrubby species, with branched pilose stems, rather thick-stalked, cordate ovate, toothed leaves, rough on the upper, smooth and paler on the lower surface, and loose erect, much branched, many flowered cymes. The corollas are about half an inch long, irregularly cup-shaped, widely expanded at the throat, not at all bag-like, as in the better known species, but more resembling in form the corolla of some Digitalis, white, with a few small purplish spots. There are two small stamens springing from the very base of the corolla-tube. Sent by Miss Owen.

ZAUSCHNERIA CALIFORNICA is an old-fashioned plant that one comparatively rarely sees now-a-days. The leaves are lanceolate, rather downy; the brilliant scarlet flowers, each about 2 inches long, are arranged in loose erect clusters. In form the flowers are funnel-shaped, the tube of the funnel very slender, dilated at the extreme base, expanding above into a trumpet-shaped 4-parted limb, bearing the four stamens within. Though not having much resemblance at a first glance to a Fuchsia, a second inspection will clearly reveal the affinity. Received from Miss Owen.

THE ALPINE GARDEN.

WHAT a volume of suggestion there is in this heading!—so much that one scarcely knows which to take up first. The tropical weather which we have experienced this season has reduced what has often been a suggestion into downright practice. All who grow alpine plants know right well that it is useless to attempt their culture unless plenty of water is supplied during dry weather; the present season has tested severely the very existence of multitudes of alpine gems, and happy was he who could supply at the needful time water without stint. If one lesson more than another has been forced upon the alpine grower it has been the desirability of providing a good supply of water at all convenient points of the alpine garden, especially where it is at all extensive. A practical suggestion to those who may erect rockeries is, as well as doing the same thoroughly, to make ample arrangements for an unlimited supply of water, by the laying of pipes with plenty of taps in all parts of the rockery, so that short hoses may be screwed on the taps, and as much water as is necessary can be given at a minimum of cost and labour, especially in places where there is a good home water supply. Observations have also been made this season as to the growth results upon rockeries of different structure as regards the arrangement of the material; to make this point clear I may say that better results have been obtained upon ledges which had a dip of about 15° than from others which were more perpendicular, the drainage being far too excessive in the latter arrangement. Another serious fault one so frequently notes in rockeries is the excessive exposure of the constructing material—indeed, one often imagines the main idea of the builder was to show to the best advantage the material instead of the plants for whose benefit it should be arranged; during hot seasons this exposed material absorbs a large amount of heat, the degree varying greatly with the kind of material, which is absolutely prejudicial to the well-being of mountain gems. But if this same material is well buried it will constitute a cool moist basis for the fine roots to feed upon and cling to, instead of, as in the former case, acting as a heat vehicle to the roots, as well as abstracting a material amount of moisture from the soil, which in the natural order of things is given off into the atmosphere. Some enthusiastic cultivators, E. G. Loder, Esq., to wit, have most of the alpine garden covered with a mixture of rock *débris* and soil, only a few boulders cropping up here and there—with excellent effect, too—although the arrangement of the constructing material is most effectually done, as the condition of the occupants will testify.

At the present time the majority of alpines are pas their showiest stage, and it is desirable to put as good a face upon the rockery as possible; to some extent this is accomplished by clearing off all weeds and breaking up the surfaces which have become hardened—a small hand-fork is an excellent tool for this purpose; this will greatly benefit many subjects, but must be judiciously practised with others. Top-dressing is, I consider, a very important item for attention at the present time; it may be simply one of pure sand, or a mixture of that material and leaf-soil, or even thoroughly decayed manure. Without doubt, sand is of the greatest advantage in the culture of alpines, and is not half so much used as it should, and in future will be; the culture of many so-called fastidious species is rendered comparatively easy, and is most pleasurable with the free use of it—such, for example, as Gentiana bavarica, G. verna, G. excisa, &c., the former especially is most difficult to grow without being well sanded up. Messrs. Backhouse, of York, luckily hit upon this method of culture in connection with it, and it now grows very luxuriantly at York, planted in a cool partially shaded position, with a copious supply of sharp sand well sprinkled about, and amongst the shoots. An excellent top-dressing is a mixture in equal parts of sand and good leaf-soil passed through a very fine sieve, or as I have said, instead of the leaf-soil you may use thoroughly decayed manure; if this compost is sprinkled round about and amongst the plants a decided advantage will be secured. My plan is to use the mixture pretty dry, sprinkling it upon the plants, afterwards washing it down with a fine rose. How happily do the members of the Primula family thrive under this treatment, including most of the species of the genus Primula, also the Soldanellas, Androsaces, Cortusas, Dodecatheons, and Cyclamens; the difference between plants so treated and those not top-dressed is apparent at a glance. Campanulas, too, are greatly benefited; indeed nearly all alpines may with advantage be thus treated.

A few words now as to the propagation of alpine plants, which as yet is in its infancy, and a few hints anent the subject may interest some one. Usually (I hope I do not go too far) growers of alpines, not content when they have purchased one or more plants of any particular species, and planted the same on the rockery, the idea of increasing the stock never seems to enter into their heads, and by some hocus pocus there is an idea abroad that alpine plants generally are difficult subjects to propagate; granted some are difficult, and in our varying climate a few obstinately refuse to increase, or at most very slowly, but the bulk of them are amenable to the treatment of a tyro even in the matter of propagation. With many kinds it is absolutely necessary in order to maintain good stock to propagate them, *e.g.*, such as Saxifraga Wallacei, Maweana, and Wilkommiana—three of the best Saxifrages. If young plants of these are not rooted yearly, or at least every two years, it is quite likely they will be entirely lost to the collection. Many other examples might be cited if at all necessary. Mr. Wolley Dod is especially energetic in propagating his hardy flowers, as he has found the great advantage of so doing, for not only is he able to plant in good masses and in different parts of the garden, but is enabled to distribute a large number of plants amongst *confrères*, which he does most liberally. Of course, in limited areas it is impossible to grow large masses of a multitude of varieties, but I think in the culture of alpine plants the evidence is in favour of enjoying good masses of a limited number of first-rate kinds rather than accommodating small tufts of a much larger number of varieties. Speaking generally, there is room for great improvement in this direction. The present is a most opportune time for increasing many, by several means—viz., by division, layering, and cuttings. Many kinds will divide freely, and such should be split up and replanted, well watering them until again established. A considerable quota

are best increased by cuttings, and when this method is practised the ideal addendum of an alpine garden proves most serviceable, viz., a good cold frame; in fact, I do not think a garden of this kind of any pretension whatever can be successfully carried on without such an addendum: in it cuttings can be struck, seeds raised, weakly plants often fostered, and surplusage of doubtfully hardy subjects protected during winter to replace in the event of loss outside.

As a rule it is best to dibble the cuttings in well drained pots of sandy soil; place them in the frame, keep nicely moist and shaded from sunshine, and in due time the stock of many will be materially augmented. It is best to increase many by young cuttings in spring; this especially applies to the majority of the Campanulas; the young cuttings of these strike freely, and if planted out early they form excellent plants the same season. Seeds of all desirable kinds should also be collected as soon as ripe, as this is by far the most expeditious method of increasing a multitude of things, to wit, Gentianas, Oxytropis, Dodecatheons, &c. Taking that most beautiful and variable of the former genus, G. septemfida, as an example, it cannot be increased by cuttings or at all satisfactorily by division, but it seeds freely, and if the seed is sown as soon as ripe it germinates freely, and in two, or at most three seasons, a grand colony of plants may be had on the lower flanks of the rockery, or in the border, which will give you years of pleasure. That most beautiful of all the American Cowslips, D. integrifolium, is most easily managed after the same fashion; the seed should be sown as soon as ripe, and it germinates readily. It is also the best plan to adopt with the species of Oxytropis; if the seeds of these are kept long they will lie a long time, and often not germinate at all. A very large number of hardy flowers may be raised from seed sown in spring, using 4-inch pots, which should be placed in the frame, and each covered with a slip of glass, which must be removed as soon as germination takes place. I have frequently been successful in raising Gentians in the following manner:—The pots were well drained and filled with light sandy soil, which was well watered, and the seed sprinkled thinly upon the surface, and finally covered with a little moss; when the seed germinated the moss was gradually removed, and the seedlings finally fully exposed to the light. The seed of many kinds of Primulas is best treated in the same way—a poor mimicry of the frequently natural surroundings of these plants being thus attempted. Sufficient has been said to prove that with very little trouble and expense alpines may be easily increased, and I hope the ever-increasing culturists will try their hands at the work, so that we may see in all, as well as in some of the more prominent alpine gardens, the showiest species represented in such masses as shall gain for them even a larger share of popular favour than they even now enjoy. *T.*

PLANT NOTES.

HYPERICUM CORIS.—I was somewhat surprised when reading Mr. Wolley Dod's admirable notes on Hypericums that he should speak of H. coris as not being hardy. It is a plant which has a wide range in altitude, being found in the immediate vicinity of Nice, on the sea coast, and also runs north to near the main chain of the maritime Alps up to an altitude of about 5000 feet above the sea. So there can be no question respecting its hardiness, but rather a question as to the texture and drainage of the soil in which it is planted. It is most at home in narrow but deep fissures of rockwork in rich sandy loam. We have, however, a fine specimen of it growing in the herbaceous border, where it has been for some years. If plants of it are cultivated in pots it is best not to plunge the pots, but just to stand them on ashes or some porous material. We had a considerable number of plants grown in this way which withstood without injury those very severe winters when the thermometer registered 38½° of frost. When planting Hypericum nummularium if one-third rough hard peat, one-third rough fibry loam, and one-third coarse silver-sand is used, and plenty of this compost in a sunny, well drained (but not too dry) position it will not only just exist, but will run freely and flower profusely. It is essentially a rock plant, at least it is so in a wild state. I remember seeing it in great abundance when riding on the coach from Pierrefitte to Cauterets in the Pyrenees. It draped the rocks as the Maidenhair (Adiantum Capillus-Veneris) does in other parts of France. *R. Potter.*

RUBUS CHAMÆMORUS AND R. SAXATILIS.—In addition to the habitats of these plants given by Mr. Webster and Mr. Nesbitt I may mention that I have found the former abundantly on Cheviot, in Northumberland; and the latter up the North Tyne, in the same county. *T. H. Archer Hind.*

DIMENSIONS OF A FEW RARE CONIFERS.—A correspondent kindly sends us the following about some trees at Penny Hill, Bagshot, a locality very favourable to the growth of Coniferous plants:—Sciadopitys verticillata, 15 feet high, 13½ feet in diameter of head; Thuiopsis Standishii, 19½ feet high, 11 feet through the head; Thuiopsis dolabrata, 17 feet high, 10 feet through the head; Juniperus japonica alba, 13½ feet high, and 11 feet in diameter of head. These handsome specimens stand in the grounds of Louis Schott, Esq.

DISEASE OF PRIMULAS.

UROCYSTIS PRIMULICOLA, MAGNUS.

THE Rev. C. Wolley Dod is to be envied for his productive garden. Not long since it gave rise to a new species of putrescent mildew on Lilies, named in the *Gardeners' Chronicle* by Mr. Berkeley (Sept. 10, 1881) Ovularia elliptica; Mr. Berkeley there told us (p. 340) that Mr. Dod happily possessed "an abundant supply of diseased Lilies." Edge Hall has now produced a destructive parasite of Primulas which has not hitherto been described as British. It is a smut fungus allied to the smut of Oats, Wheat, and Barley, but still more closely to the common smut of Violets, and it attacks the capsules and seeds of Primula farinosa in the same way as the smut fungus (Ustilago carbo) attacks the grain of our cereals. The interior material of the grain in the latter case, and the whole interior of the seed capsule with its seeds in the former, are replaced by fine black dust, which under the microscope is seen as black fungus spores. Mr. Dod writes that in most parts of his garden Primula farinosa produces in the seed capsule smut instead of seed, and in no case can he find smut and good seed in the same plant. The fungus has been present at Edge Hall for six years, and from three parts to nine-tenths of the seed is destroyed by it every year. The plants have been obtained twice in autumn, gathered by Mr. Dod himself from its native habitat, in boggy spots on the mountain (carboniferous) limestone. In the Edge Hall garden the plants, whether growing in sun or shade, or wet or dry beds, are alike attacked by the fungus. Mr. Dod, two years ago, sent some plants from the native habitat to the dry soil and climate of Godalming for cultivation in an alpine garden in that position, but the plants were attacked with smut exactly in the style of the Edge Hall plants.

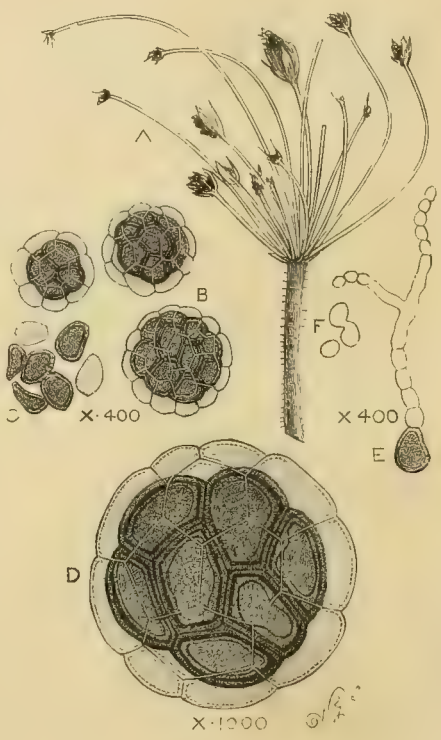


FIG. 52.—SMUT IN PRIMROSES.

At A, fig. 52, I have illustrated a diseased umbel of Primula farinosa from one of Mr. Dod's examples; it will be observed that all the seed capsules have been replaced by smut and perished in a way analogous with what one commonly sees in Oats. When a little of the black powder is placed under the microscope and magnified 400 diameters, it is seen to consist of innumerable companies of compound spores as shown at B, the inner cells (or spores) are dark purple-brown or almost black in colour, whilst the investing cells (also spores) are semi-transparent and paler in colour, as shown. When the little spore masses are placed in water they speedily separate, as at C, and then it is noted that the constituent cells are very irregular in shape and very different from each other in size. At D I have magnified one of the spore agglomerations to 1000 diameters, so that it may be compared with other spores illustrated to the same scale in past numbers of the *Gardeners' Chronicle* (see fig. 53). Our more artistic readers will notice how ornamental these growths are, and how adapted for the eardrops and brooches of ladies if reproduced in pearls and precious metals by a skilful jeweller.

Although handsome, smuts decidedly belong to the lower orders of fungi and they are always ready to imbibe beer. The spores of Urocystis primulicola will germinate sluggishly in water, but if placed in diluted beer and kept under a bell-glass for a couple or three days, they germinate as illustrated from Nature, at E, by expelling a jointed thread, usually called promycelium; this thread is constricted in a necklace-like manner as shown, and at length the free beads or joints drop apart, and a vast colony of colourless yeast-like cells is deposited all over the surface of the diluted beer. These latter cells are commonly termed conidia, and they often branch from the sides as well as from the ends of the promycelium thread. Many of the conidia fuse together as at F, exactly as in Protomyces.

Professor De Bary has termed this simple fusing "conjugation" but there is nothing of the nature of true "conjugation," either in Protomyces or any of the Ustilaginei or smut fungi. The free cells which are produced all over the surface of diluted beer are so extremely like yeast cells that Dr. Oscar Brefeld, in his elaborate and magnificently illustrated essay on smut fungi, *Botanische Untersuchungen uber Hefenpilze*, vol. v., says the masses of conidia are not only like yeast colonies, but that they positively are yeast of one kind or another. No one, it seems, can distinguish the conidia of smut fungi from yeast cells, and it is extremely common for the spores of the most diverse fungi to excite alcoholic ferments.

Judging by what is known of the life-history of other smut fungi, Primulas become invaded by Urocystis primulicola in the following manner:—At this time of the year the smut spores are blown away from the Primulas on to the ground by the wind. Such spores as fall in damp and suitable places, especially where the diluted juices of stable-manure are present, germinate at once, and produce promycelium and vast colonies of yeast-like conidia. The colonies of conidia repeatedly give rise to other colonies in the ground, until every Urocystis spore has produced many yeast-like colonies; the more yeast colonies there are produced in the ground the greater chance there is for the invasion of the Primulas next spring. The conidia, we must now say, have a second manner of germination, viz., by the protrusion of exceedingly fine, long, extremely attenuated transparent mycelial threads. As soon as the Primulas show renewed growth next year these attenuated threads, which will then be on or very near the surface of the ground, reach the young Primula leaves at the ground line. During humid weather the fungus threads creep into the interior of the young Primula plants by the first formed organs of transpiration, the fungus then grows with the growing plant, and it is carried up the growing scape just as the fungus of the smut of Oats is carried up the stem to the panicle which crowns the top. Many of the Ustilaginei perfect themselves in capsules or seeds, and the fungus we have before us is no exception to the rule. To prevent smuts of all sorts the best plan is to look after the fungus in its

early stage of growth, and nip off the infected part and burn it before the spores are dispersed by the air.

The illustration, fig. 53, is reproduced from the *Gardeners' Chronicle* for September 30, 1876, and it shows, enlarged 1000 diameters, the spores of various British species of Urocystis closely allied to that of the Primula smut. One of the fungi of the Gladiolus disease, named Urocystis Gladioli, is shown at A, B. The Convolvulus smut is shown at C, D; this fungus, Thecaphora hyalina, grows within the capsules of Convolvulus; E is the smut of Colchicum, U. Colchici; F, G, Rye and Sedge smut, U. occulta; and J and H the smut of the Ranunculaceæ named U. pompholygodes.

It is often extremely difficult to ascertain whether fungi, which are new to Britain, have been described in other parts of Europe or the world, as the foreign literature is not only bewildering but often most difficult of access. There is no example from any place in the herbarium of the department of Botany, British Museum. As in former instances, we have made enquiries of various botanical friends, but the only gentleman who has a record of a named smut on Primulas is Mr. William Phillips, F.L.S., of Shrewsbury, who has obligingly informed us that the fungus has been described under the name of Urocystis primulicola, by Dr. Magnus, in *Hedwigia*, 1879, p. 19. It appears, however, that Mr. C. Edmund Broome, M.A., of Batheaston, who, in conjunction with the Rev. M. J. Berkeley, has done so much to advance the study of European Mycology, that he has a Polycystis from Primula farinosa gathered in Teesdale, in 1867; since then he has seen it in P. farinosa, sent from the Cumberland lakes. Mr. Broome says he was unable to refer his Polycystis to any described species, and it has remained unnamed in his herbarium. Just now Mr. Broome is unable to lay his hand on the examples abovenamed, but in all probability they are the same with the one which is now so badly plaguing Mr. Dod, and described in these notes.

We need hardly say there is danger of this pest attacking other Primulas, including the Polyanthus and Auricula. *W. G. Smith.*

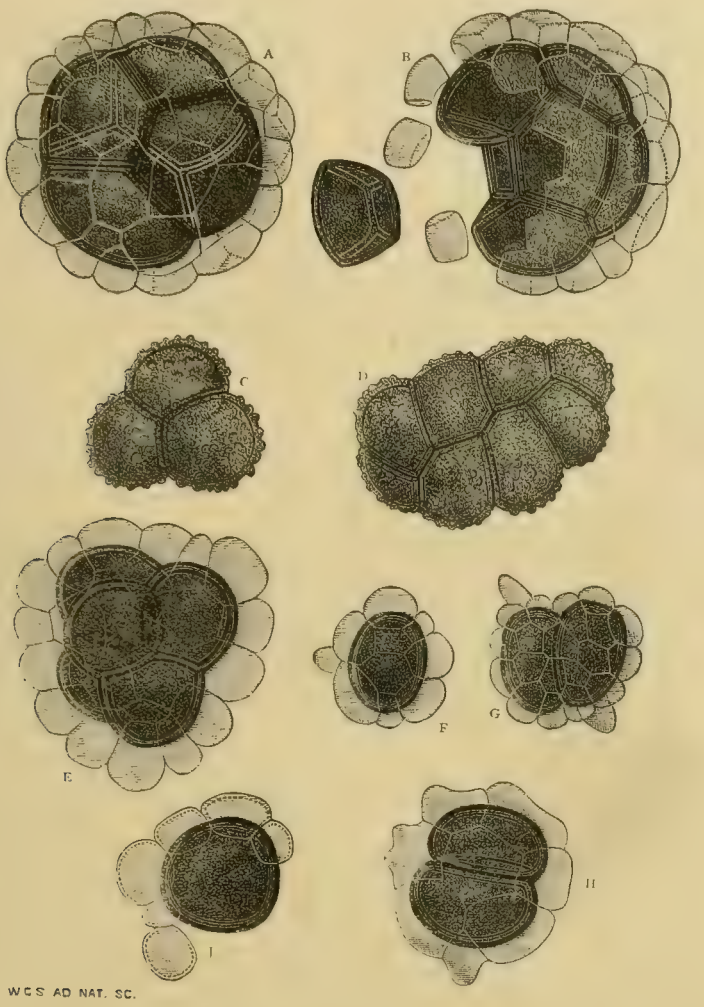


Fig. 53.—Spores of Urocystis. (see p. 268.)

References:—A, B, Urocystis Gladioli; C, D, Thecaphora hyalina; E, Urocystis violæ.; F, G, U. colchici; H, U. occulta; J, U. pomphylogodes. Enlarged 1000 diam.

COLONIAL NOTES.

Manitoba.—A few Notes on the Wild Fruits of Southern Manitoba, Canada.—I have found the following kinds of wild fruits growing in the woods here:—Cherries, small red; ditto black (troubled some with the black knot). Currants, red, fair size; ditto black, large. Gooseberries, small red; ditto green. Plums, small purple; ditto yellow. Raspberries, large, and of good flavour; Strawberries of a good size; also Tree Cranberries, Blueberries, and a small red berry like a Raspberry, with a peculiar flavour; the plant is a trailer. Wild Grapes grow in some parts; also Hops in abundance. And on the banks of the Pembina River a dwarf evergreen plant, a trailer, in height about 6 inches, in appearance much like Box edging (it grows in the poorest of soil here), covered in the spring with white flowers, tinged with pink, much like Heath flowers in shape and size, and during the autumn and winter months the plants are covered with clusters of red berries, in size like the Holly berries, which the birds are very fond of. This plant could be used to great advantage in England by planting on railway embankments and rockeries, as it trails and takes root at the joints, and looks pretty, the habit being dwarf, and foliage evergreen, which makes the clusters of berries show to a great advantage. If this plant has not been introduced into England I shall be happy to supply to any nurseryman who will give it a fair trial any number of seeds, if they will send before the snow falls in November, also any information respecting this country. *James Rooke, Pilot Mound, Manitoba, Canada.* [It would be well if our obliging correspondent would send specimens of the plants he names in order that they may be identified: popular names are worthless in such a case. Ed.]

Ontario.—The season this summer has been peculiar. June was variable—hot, and cold, and dry—and our Strawberry crop was only partial, and many fears were entertained as to all the crops, cereal and horticultural, especially as the Wheat and Barley looked thin and unpromising. July, however, proved cool and showery, and promoted the growth of all descriptions of plants, and the consequence was the most extraordinary abundance of wild fruit we have ever seen, and an excellent production in our fields—the Raspberries, Gooseberries, and Whortleberries having been unprecedentedly fruitful in our woods and plains, and the Barley and Wheat affording excellent crops in our fields, although the Barley was injured by the showers of rain which fell just previous to and after it was cut. Apples, we fear, are almost a failure. *Minesing, Ontario, August* 13.

Natal.—Begonia geranioides, *Bot. Mag.*, t. 5583, mentioned in a former letter, is a handsome free-flowering, tuberous-rooted plant. It grows in different sites, on dry river banks, shaded, however, and on moist cliffs, in company with Begonia natalensis and Dregei, Clivia miniata, and Cyathea Dregei. It makes a really beautiful plant in a shaded rockery—one mass of snow-white blooms about 1 foot through and 2 feet high. In our dry winter, stem and leaves fall off entirely. I have never seen it in the Cape Colony. It would probably thrive at home planted out in suitable soil, due care being taken to lift and store away when frost begins. *R. W. Adlam.*

Florists' Flowers.

The Auricula.—Most people have repotted their stock of plants by this time, and the plants are probably well established; in that case they should be well exposed to light and air, by the lights being drawn off at all times except to protect the plants from very heavy rains—a gentle shower would do them good. The skill of the cultivator is displayed in keeping the plants clean and healthy. Greenfly is very troublesome during the hot weather, and spreads over the plants if it is not destroyed as soon as observed. The full grown plants in pots must not be over-watered just now. It is best not to give them more water than just sufficient to keep the soil moderately moist and to prevent the plants from flagging. The young seedlings raised in the spring require pushing on now. Some of our plants are already in the pots they are to flower in—large 60's; the larger proportion of them will be potted into their flowering-pots during the next six weeks. It is astonishing how very rapidly the seedlings grow after this time of the year; and until they are checked by the first frosts. We dip the plants in soft-soapy water each time they are potted. The alpine varieties are now being repotted. They do not require so much care afterwards as the show varieties do; when they are well established they are left fully exposed to the weather, either sunshine or rain. Offsets of choice varieties ought to be taken off as soon as they are ready; if potted into thumb-pots in light soil they soon become established little plants.

The Carnation and Picotee.—If the layering has not been finished it ought to be done immediately, else they will not have time to root sufficiently before the cold weather sets in. If it is intended to save seeds from any of the choice varieties they must be kept under glass until the seeds are ripe; the wet weather, with heavy dews, prevents it from ripening out-of-doors. The seedlings are now well established in the open ground out-of-doors, and promise to make good strong flowering plants for next year. A great many persons seem to be interested in the raising of seedling Carnations. It is well that the inexperienced cultivator should know that April is the best month

in which to sow the seeds, and that the plants do not require more than good garden soil to grow in. They will flower strongly and well in soil in which Cabbages grow freely. The perpetual flowering varieties now demand more attention, as those propagated early in the year will be coming into flower, and the later ones should be potted on in good soil to succeed them. Some few old plants that flowered in the summer may be potted into larger pots, where they flower after Christmas.

The Dahlia.—The plants now require daily attention in the way of thinning out superfluous shoots, and also disbudding. If the show kinds are left to themselves they grow into a mass of shoots, thickly furnished with side growths and buds, so that the flowers would be of very small size. The growths must be well thinned out in some cases, but not so much so in others, as some of the flowers come large and coarse, and others never do so, however much they are thinned out. The dry hot weather has necessitated frequent waterings overhead, and also at the roots, this is best done in the evening. Thrips are very troublesome and also earwigs. In some cases, too, the nasty leather-coated grub has shown a preference to the delicately-tinted petals of Mrs. Gladstone. They harbour on the harder leaves near the roots. This last is easiest caught by the aid of a lamp at night. The earwigs are caught in small pots on the top of the sticks, and if the flowers are wanted for exhibition the blossoms must be tied up in muslin bags to escape the thrips. Cuttings of the smaller growths may yet be put in small pots, they soon form roots and become established. When dried off in the winter, they may be kept on the floor of a vinery or in any house where the frost is kept out. These roots are more easily kept through the winter than the old roots that are dug up from the open ground.

The Gladiolus.—The beds of these are now in full beauty, and they are the most useful of flowers for cutting at this season. The best way is to cut the spikes when the first three or four flowers are open; the others will open as well after the spikes are cut and placed in water. They look most natural and effective arranged with their own leaves. The fronds of the Lady Fern or the common Lastrea Filix-mas are also useful. If the flowers are eaten on the spikes it is most likely done by caterpillars, which lurk in the axils of the leaves by day and feed at night. If it is intended to save seeds the very best varieties only should be hybridised for this purpose. This is easily done by pinching off the anthers from the half-opened flowers with the fingers, and using the pollen from the fully-opened flower of another variety two days after; by that time the flower will be quite open.

The Hollyhock.—This will be a good season for seed saving, as we have scarcely had any rain since the first flowers opened. In wet seasons the petals rot before the flowers can be removed from the seed-pods, and this also causes the seeds to decay. Red-spider has been very troublesome this year, indeed where the leaves have not been well syringed they are quite yellow and dropping from the plants; mulching over the roots and watering well goes a long way to keep them in health. Eyes from the side growths may yet be put in singly in small pots; they soon push through the ground and form little rooted plants, which in a few weeks may be potted into 3 or 4-inch pots, in which they will stand through the winter. Although we had a bad visitation of the Puccinia before the plants were turned out of their pots, by persistent washing with strong soft-soapy water, in which flowers of sulphur was dissolved, it disappeared, and we have not seen it since the plants were put out. *J. Douglas, Great Gearies, Ilford.*

FOREIGN NOTES.

The Santa Barbara Vine.—I hasten to send you some reliable data concerning the Santa Barbara Vine, or Vines. The original Vine, which, as nearly as can be ascertained, was planted by Donna Marcelina Felix, a native Californian, about the year 1815, was removed in 1876, and the trunk exhibited at the Centennial Exposition. Marcelina's account of it was that she used the cutting, obtained at the San Antonio Mission, as a riding-whip, and returning to her home in Monticito (near Santa Barbara) stuck it into the ground near her house. It was of the Mission variety. I saw it in 1870. It measured 12 inches in diameter 4 feet from the ground, where it divided and was carried over a trellis covering an area of 10,000 square feet. In good years the crop was enormous—from 10,000 lb. to 12,000 lb.; the bunches often weighed 6 lb. The "daughter Vine," now about thirty years old, is likely to be equally famous. I visited it two or three weeks ago, and was glad to find that Dr. Doremus, a brother of the late Dr. Ogden Doremus, of New York, had purchased it. The soil, exposure, and copious subirrigation of the Montecito fruit belt explains the exceptional fertility of the Santa Barbara Vine. *J. C. C.* [An illustration of this Vine was given in our columns in 1878, p. 117. Ed.]

THE PROPAGATOR.

The Propagation and Culture of Bedding Plants—Pelargoniums.—It is more than desirable—it is important—that the gardener should make a good stock before the winter. Newly acquired bedding plants, desirable for propagation, are often lost by relying on the lifted plants to give stock in spring, and it is therefore a far better plan to strike young ones from cuttings taken at the end of summer, and besides obtaining as many as possible of desirable kinds, the old stuff should be kept. It will be necessary to form a bed 4 feet wide, and as long as may be required. If possible, it should be made on a hard bottom, but it must be in an open position fully exposed to the sun. The soil should be made up of three barrowloads of old soil, that has previously been used for potting purposes, or similar soil sifted through a ½-inch sieve; to this should be added a barrowful of maiden soil and one of sand, the whole to be well mixed together. In forming the bed, the first layer should be of sifted cinder ashes 1 or 2 inches deep, and upon this 5 or 6 inches of above soil. Pat the whole down with a spade, and so make it level and solid. A few bricks should be placed round the margin of the bed to prevent the water washing away the soil, and after gently watering the bed it will be ready to receive the cuttings. In making the cuttings all kinds can be taken, whether the ordinary bedding plants, scented or variegated, but the wood must be ripe and preference should be given to those plants which grow on the borders of the flower beds, and to those situated in isolated and exposed places. After trimming the cuttings they should be dibbled into the bed prepared in rows, giving each cutting enough room and pressing all firmly into the soil. They must also be well watered now, because they must be deprived of it until they have rooted. It is not necessary to shade them or indeed to do anything else than occasionally to pick off the decayed leaves. When they have rooted through they must be potted each into a small 60-pot and placed in a shallow frame or front platform of a house. Here they must be kept moderately watered, and plenty of air must be given them. About the second week in January a certain number should be potted, the strongest into large 48's and the others into small 48's, and placed in a growing house as near the glass as possible. For a fortnight after being potted they should be allowed to stand what is termed "rough," that is, nothing should be done to them, and they should not even be watered. At the end of that time they should be well watered, and never afterwards allowed to become dry; and when they have filled their pots with roots a little weak guano-water may be given once or twice a week. In watering with guano-water great care should be taken to prevent any drops falling on the foliage; and after watering a house of plants with manure-water it is a good plan to water them again, but with ordinary water, and overhead with a rose-pot, so as to wash off any guano that may have dropped upon the foliage. In potting them in 48's the soil used is composed of three-quarters good turfy loam and one-quarter good leaf-mould, well mixed together, and the plants should be firmly potted. It is necessary to move the plants through the house once a week. To do this a barrowful can be placed on the ground, so as to give room to move the other plants forward. At the same time each plant should be turned round, stopping it if necessary and picking off dead leaves. These potted-on plants will be very useful for flowering in pots, and for extra-sized plants for vases and large beds. The general stock must, of course, have pots and room given them as convenience may dictate. This treatment will apply to all bedding Pelargoniums which are intended to be grown into nice plants in a short space of time.

Verbenas.—These plants should be propagated in a two-light frame beneath a north wall. The bottom of the frame should be made of cinder-ashes 2 inches deep. Obtain some well drained 48-pots and fill them to within half an inch of the top with soil composed of half maiden mould, one-third leaf-mould, and one-fourth river-sand well mixed together, and sifted through a ¼-inch sieve. After pressing the soil firmly into the pots put a ½-inch layer of sifted river-sand on the top, and well water them to make the soil firm. For cuttings it is best to select shoots which the plant throws up from the centre, having about four leaves in a joint, but the flower-buds must be picked out or else select the small side-shoots. Place a dozen cuttings round the border of the pot, and eight in the centre; water and place in the frame. Here they require shading from the hot sun, to be sprinkled with a fine rose pot night and morning, and to be allowed air night and day by raising the lights 1 inch. When rooted they can be potted off singly into small pots and placed in a cold frame, where they must be kept moderately watered and allowed plenty of air, and in order to make them hardy they can be left in the frame till late in the autumn. They can then be removed to a shelf or platform in a cold house, and the flower-buds must be pinched out as soon as they appear, or they can be stopped by other means; the plants will thus become dwarf and bushy. In the early spring, if more plants are required, a few of the above plants should be placed in a Cucumber-house or any other moist, warm house, and they will soon produce enough cuttings to supply the demand; the plants should, however, previously be potted into some good soil.

Santolina incana, Teucrium variegatum, Calceolarias, and other bedding plants of a like nature should be managed in the same way. *T. O.*

Plants and their Culture.

Autumn and Winter Flowering Plants; Stove.—Every possible attention should now be given to the entire stock of these subjects, on which so much reliance will have to be placed during the dull months of the year. Potting operations should be brought to a close as soon as possible, even with all the later batches, in order to have all stock well rooted during the coming month. The forward lot of Poinsettia pulcherrima can, and ought to be, well exposed; ours are even in the open air, and as sturdy as one could desire. These are last year's cuttings grown on. This season's strikings are under cover of a light, airy pit, with ventilation day and night. The latest batch of cuttings will need keeping a bit closer for a week or two longer, then treated in a similar manner to prevent them from drawing. The object to be aimed at in the cultivation of both Poinsettias and Euphorbia Jacquiniæflora is to well ripen the wood by exposure to light and air; the latter can be treated in a similar manner to the former, or be grown in a stove or Pine-pit where there is not an excess of moisture: in either case the result should be satisfactory. If there is sufficient room at command, we would advise the planting-out system, provided a dry spot be chosen, so that no superabundant growth is made late in the year to the future disparagement of the looked-for return in flowers. Though now somewhat late, I would not hesitate in planting out good strong plants in a favourable position; thus treated, more lateral growth will be made that will give a succession. When planting out is decided upon, it will be necessary to secure an abundance of drainage, and a porous open soil for their future well-being. Begonias of the winter-flowering section should, like the Poinsettias, be kept as airy as possible to secure as dwarf and compact plants as can be got by these means. They will afterwards be found to make an extra amount of lateral shoots when introduced into a more growing temperature with a corresponding return in floral display. B. insignis and B. Knowsleyana are thus treated by us, and they give every satisfaction. Any stock of these or other kinds, if inclined to be leggy, should be pinched back at once,

shoots of medium strength being preferable to a strong sappy growth. Do not water them in a liberal manner, or this, too, will induce a strong growth; give sufficient for their needful requirements, but do not go beyond this for the present. In a mild and sheltered position Centropogon Lucianus will do out-of-doors for a few weeks, and be found to appreciate the change when again brought under cover. Eranthemum Andersoni and E. pulchellum are putting up their first spikes earlier than usual with us; we have them in a well ventilated pit at present, where they will succeed well through next month, and be found useful during October in the stove. It is not too late to strike a batch of E. pulchellum; they can be turned to a good account even in 3-inch pots. Plumbago rosea is disposed to become tall in growth; any such plants, if carefully tied to sticks, can (when making arrangements for storing them during the winter) be tied to wires near the roof, and be allowed thus to develope their showy spikes of bloom. Justicias and Scutellarias will be all the better if kept in a temperate-house with free ventilation; then when later on they are introduced into more heat the spikes will soon push up and come into use at a desirable time. Young stock of Thyrsanthus rutilans can be treated in a similar manner; in the case of ours, however, we have left them in the stove, having kept over last year's young plants which are now on a good long stem. In this way they will stand well above other surroundings, and thus produce a better effect when in flower, with this extra advantage in showing off their long pendent racemes. We have several large plants of Gardenia intermedia that are at present standing in a Peach-house that is open day and night; we hope to keep them there till the end of September, then when introduced into a more growing temperature we expect to get a good return at a season when they will do us far more service. The Epiphyllum truncatum section of Cacti should now be kept in a tolerably dry atmosphere with less water at the root for a few weeks. A vinery containing ripe Grapes will suit them very well, failing a position where more fully exposed to the beneficial influence of the sun. Impatiens Sultani promises to be an almost perpetual bloomer; we are thinking of striking some cuttings soon to make dwarf plants for the winter and early spring. Some two or three plants of this species were stood out in the open air several weeks back and are now flowering freely; the hot weather of late has, no doubt, favoured this mode of culture more than would be the case in many seasons. We advise growers of Aphelandra aurantiaca Rœzlii to keep them in the stove, and if on a shelf near the glass so much the better for keeping the plants compact. We do not grow this kind, but would certainly do so if we had to supply any great quantity of plants for furnishing purposes. This and A. nitens are two most distinct plants, well worthy of more recognition than they receive as well as being of easy culture. Dipladenia boliviensis is a free growing and very distinct species, useful in the late autumn and winter months. It will succeed best in a temperate-house during hot weather, and when again taken into the stove will continue to yield a supply of its pretty white blossoms.

Greenhouse and Pits.—A goodly quantity of plants coming under this head will possibly have been turned out of their pots into the open soil during the summer months. They can safely remain in this state for another week or two, but in the meantime it will be as well to cut round the ball or gently lift them a trifle with a fork in order to check overluxurlance. Bouvardias will need to be taken under cover as soon as anything; ours are this year turned out of pots and doing well, but will soon be lifted and the major portion planted into a pit in which a late crop of Melons has been taken. This system answers well with us for an abundant supply of cut bloom, we therefore recommend others to try the same plan for once. Solanums when taken up for potting should be got into as small pots as possible, consistent with the well-being of the plants, and also receive a thorough soaking at the root to settle them into their fresh quarters. The protection of a cold frame or pit will be sufficient for them, with occasional damping overhead till fresh root-action commences. We used to keep them close after potting, but found that it was too sudden a change from the open air. Richardia æthiopica, if in the open ground, should be taken up soon and treated in a similar way, dividing extra strong clumps if necessary. *James Hudson, Gunnersbury House Gardens, Acton, W.*

Fruits Under Glass.

Strawberries.—Plants that were potted early and gradually brought to withstand the uninterrupted force of the sun have made exceedingly satisfactory advancement, the clear dry day atmosphere and dewy nights having promoted both strong and compact leaf development—conditions in the plant's formation so necessary to insure bold and perfectly matured crowns, which, being the properties indispensable to secure satisfactory fruitfulness, must be obtained by the end of the growing season. Although the weather has great control over their production still much depends upon the cultivator's management, one of the principal evils to be guarded against being a drawn weakly growth, which is accelerated by shade or by the plants being arranged too closely together. To avoid this sufficient space should be afforded to prevent the foliage meeting, so that the air can circulate amongst them unchecked. Runners are usually produced in proportion to leaf-development, and should be at once removed, so that the energies of the plants are in no degree sacrificed through them, while superfluous crowns, which some varieties, notably Sir Charles Napier and Vicomtesse Héricart de Thury, produce abundantly, should also be nipped out as soon as visible, one strong crown being all that is requisite to carry a full crop, as is evinced in La Grosse Sucrée (a variety inadvertently omitted in the list of suitable kinds for forcing at p. 739, in the last vol.), which seldom forms more than a single one. Moreover, plants that are allowed to retain a cluster of crowns, and are consequently encumbered with masses of small foliage, preventing the sun from reaching their centres, do not yield the largest fruits, although they push numerous small flower-spikes, necessitating severe thinning. Watering will require close attention during dry weather, for which purpose the plants should be examined at least once daily. So far this season it has caused us considerable labour, but with results much more satisfactory than could have been attained if we had had a dribbling season before the roots had well ramified in the fresh soil. Constant saturation, especially at that stage, is very detrimental, and rather than allow the plants at any period to remain any length of time in that state, the pots should be turned for a time on their sides to avoid rain reaching the soil. When the pots are well filled with roots, and the plants require extra assistance, weak clarified liquid manure may advantageously be employed. The syringe sould be made good use of each evening after clear days, the water being directed on both surfaces of the leaves to refresh the plants, and prevent an attack of red-spider.

Vines.—Wasps being very numerous this season, and having already commenced their depredations amongst ripe Grapes, some means must be taken to prevent their ravages; this is best achieved by excluding them from the houses by securely placing hexagonal netting over the ventilators, which effectually debars them, without to an injurious extent interrupting the necessary circulation of air. Enveloping the bunches in muslin bags is sometimes adopted; it is an unsatisfactory practice, however, inasmuch as the berries invariably get rubbed thereby, while decayed ones cannot be readily observed, or conveniently removed. Late Hamburghs have been considerably hastened by the very hot weather, but by careful management their quality in point of flavour can be preserved for some time to come, and their colour will also be retained, providing there is, as there should be, a regular covering of clean foliage over the entire trelliswork; the temperature of the house is kept cool by liberal ventilation through the day, with enough at night to cause a movement in the atmosphere, and sufficient fire-heat is made use of during damp weather to keep the temperature of the house a few degrees above that outside, while the borders should be kept moderately moist by careful waterings with cold water, early on fine mornings, so that superfluous moisture may escape before the ventilation is reduced. External borders containing the roots of Vines carrying ripe fruit should be protected with shutters or some such contrivance, to guard them from becoming excessively wet with heavy rains, which would be prejudicial to the Grapes keeping, and a similar precaution should be taken with respect to borders which have been allowed to get very dry, and possess the roots of varieties having fruit nearing maturity, otherwise the rush of sap which a sudden saturation would occasion after partial starvation would cause the berries to split. Madresfield Court is particularly impatient to abrupt changes caused by water either at the roots or in the atmosphere, and requires very careful management in that respect. Late Mucats should be pushed forward by being afforded high day temperatures, and that for the night not lower than 70°, while other particulars in their treatment should be carried out as has been previously directed for earlier crops, that ought to be ripe by the end of September, otherwise the chance of their obtaining the rich amber colour, evidencing skilful culture, will be lost, as well as high flavour—properties which are indispensable to long keeping.

Pines.—Whilst the late winter and early spring fruiting plants are in blossom, the night temperature should on no account be permitted to fall lower than 70°, that for the day should range 10° higher, and may reach 95° by the sun's aid if accompanied with proper ventilation. Preserve a bottom-heat of from 85° to 90°, and a moderately dry atmosphere, so that perfect fertilisation may take place; as soon, however, as this period is over the amount of moisture should be increased, and the plants be assisted with the exhilarating agents previously recommended for fruiting plants. Successional Queens, intended for supplying ripe fruits next May and June, should be during September prepared for rest, providing they are strong and large, which they should be by this time if they were satisfactory when potted in February; this should be accomplished by gradually subjecting them, so that no sudden check occurs, to more free ventilation, and at the same time diminishing the supply of moisture, both at the roots and in the air. The temperature of the beds and the atmosphere must be correspondingly lowered. There should now be no delay in getting the necessary supply of suckers (to which reference was made at p. 15) potted, so that they may become well rooted without being pot-bound before the resting time. Let them be plunged well up to the glass, where they will have a chance of remaining dwarf and sturdy through the winter. Pines are too frequently neglected during the time they are in their sucker pots, although they demand as much attention at that stage as any other, in order to produce fruits of large size. So long as the weather continues in its present state all sections of plants will require carefully shading, but as soon as a change takes place and the days shorten they must be gradually inured to withstand the sun. This should be managed by fixing the shadings later, and removing them earlier in the day. Where there is difficulty in securing a sufficient quantity of suckers of Smooth Cayenne and other shy varieties, room should be found to keep some of the old plants on for a time after their fruits are gathered; if the foliage is shortened back the pots may be plunged closely together, and thus occupy but little space. By this means we are enabled to keep up a good stock of these kinds, and often have suckers to spare. *Thomas Coomber.*

NEW INVENTIONS.

An elastic rubber tubing, perfectly gas-tight and free from smell, has been urgently needed for many years; in fact the impossibility of making satisfactory gas connections for gas apparatus which requires to be movable, has rendered the use of gas as a fuel in many cases a most objectionable nuisance. The tubing recently patented is made of two layers of rubber, with pure soft tinfoil, vulcanised, between. It is perfectly and permanently gas-tight under any pressure, and free from the slightest trace of smell after long-continued use, whilst it retains the flexibility and elasticity of an ordinary rubber tube. The braided or cloth-covered tube, which has been made with the intention of filling this want, has never come into general use, owing to the very small quantity of gas it passes, rendering it almost useless except for small lighting burners, and also that special brass connections and screws have to be fitted to every burner and to both ends of every length of tube; both these serious faults are entirely done away with. This tube is the result of many years' experiments, and fills a most urgent want which every user of gas-heating apparatus must feel almost daily. Irrespective of the well-known fact that extremely thin layers of rolled or beaten metal are perfectly gas-tight, the tube has been in practical use for some time, and has been thoroughly tested for months under continuous and heavy pressures of gas. *Thos. Fletcher.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 1	Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms
TUESDAY,	Sept. 2	Flower Show at Stratford-on-Avon (two days) Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	Sept. 3	Bath Floral Fete (two days) Brighton Horticultural Society's Show (two days). Sale of Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	Sept. 4	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Imported Orchids, from Mr Sander, at Stevens' Rooms.
FRIDAY,	Sept. 5	Dahlia and Fruit Show, at the Crystal Palace (two days). Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Sept. 6	Sale of Dutch Bulbs, at Protheroe & Morris', and at Stevens' Rooms.

WITH even greater truth than in the case of the Apple may it be said that the DAMSON is an English fruit. The hardy character of the tree, its easy cultivation, and its usually abundant crop, give it special value in a fickle climate like our own. In certain districts of Kent, Cheshire, and Shropshire, the Damson is grown on a large scale, while throughout the country it is a favourite in the gardens of the amateur and of the cottager. The varieties are not very numerous. On the present occasion we give illustrations of four of them.

The most commonly grown variety is the common Damson (fig. 54, 1), sometimes called the English Damson, or the round Damson. The fruits are small, ovate-oblong, of deep purple colour, with a thin bloom. The flesh is greenish-yellow, and so rough in flavour that its excellent qualities require the aid of the cook to develope them properly.

The Shropshire Damson (fig. 54, 2) bears larger fruit, of a Pear-like shape, and although not so sure a cropper, is of better quality.

The American Damson (fig. 54, 3) is less known, and for our illustration we are indebted to the pages of the *Florist and Pomologist* for 1878, where a coloured illustration of this and other varieties is given. According to our contemporary the fruits of the American Damson are large and globular, the skin dark purple, slightly spotted with brown. The flesh is greenish-yellow, adhering to the stone, juicy, melting, and sweetly flavoured. It is reputed to be a shy bearer.

The Frogmore Damson (fig. 54, 4) originated in the Royal Gardens at Frogmore, and is described by Mr. Powell as having broader leaves than those of the common kind, with a more spreading habit of growth and less thorny shoots. The fruits are rather larger than those of the other kinds above-mentioned, ovate-globose purplish-black, and richly flavoured. It has an excellent character as a cropper.

It will be seen that the alleged differences between Bullaces and Damsons—the former of which are more or less globular, the latter more or less ovoid—are not at all to be depended upon. Perhaps the season of ripening affords better distinctions—Bullaces, of which the white or common Bullace is best known, ripening in the end of October, while Damsons proper become fit for use a month earlier. With reference to this variability the late Mr. RIVERS recorded in our columns in 1863, that he sowed some bushels of the common Damson, and that while all the seedlings had glabrous shoots (not downy as in the Shropshire), yet the fruits varied considerably. In some the fruit was oval, in others round or roundish, and in a few the fruit was small, closely resembling that of the wild Sloe.

Botanically, Sloes, Bullaces, and Plums are all referred to one species, Prunus communis. Sir JOSEPH HOOKER, in the *Student's Flora*, gives the following distinctive characters :—

"SUB-SPECIES SPINOSA (Sloe or Blackthorn).—Bark black; branches divaricate all spinescent; leaves finely serrulate, at length glabrous beneath; flowers ½—¾ inch in diameter, preceding the leaves; pedicels solitary or in pairs, glabrous; petals obovate; drupe ½ inch in diameter, black, erect, very austere.

"SUB-SPECIES INSITITIA (Bullace). — Bark brown; branches straight, a few spinescent; leaves larger, broader, more obtusely serrate, pubescent beneath; peduncles downy; petals broader; drupe ¾—1 inch in diameter, globose, drooping, black or yellow.

"SUB-SPECIES DOMESTICA (Wild Plum). — Bark brown; branches straight, unarmed; leaves pubescent on the ribs beneath; peduncles glabrous; drupe 1—1½ inch in diameter, black, not indigenous."

The common Sloe, however, is so different from the other two that it would seem preferable to consider it, at any rate, as distinct.

In the *Fruit Manual* Dr. HOGG enumerates the following varieties :—The black Bullace which is found in a half wild state in the hedges, and is not greatly different from the Sloe or Blackthorn of the hedges; then of white Bullaces there are the Essex Bullace, the Royal Bullace, and the White Bullace. Under the heading "Damson" are enumerated the common Damson, the Shropshire, the Dalrymples, Rivers' Early, and Shailers' White. In addition, there is the Crittenden Damson, raised near Maidstone by Mr. J. CRITTENDEN, and which is considered to be the best of all the Damsons. Of this we hope shortly to give an illustration.

Damsons are usually propagated by budding or by grafting on seedling stocks, for although they will do perfectly well on their own roots, yet, if it be wished to secure the permanence of the improved varieties, it is better not to trust to seedlings.

The two words above cited may throw some light on the origin of the fruits in question. The word Damson is supposed to be a corruption of Damascene, implying a fruit derived from Damascus. Bullace, on the other hand, written originally *bolays* or *bulles*, according to Dr. PRIOR, is connected with the Latin *bulla*, meaning a boss on the bridle of a horse, in allusion to the hard round fruit. Possibly these two names—one of Asiatic, the other of European origin—may indicate a twofold origin, the Sloes and Bullaces being referable to one original species of European origin, represented by P. spinosa, the Plums to another of Asiatic birth. These speculations may seem to be of little practical importance, but to those who interest themselves in the raising of new and improved varieties, the matter is not so entirely a matter for the botanist and philologist as it might at first sight seem to be. Indeed, from the standpoint of the practical cultivator who has to reckon with spring frosts, the northern or oriental lineage of the trees in question is by no means a matter of indifference.

—— EFFECTS OF THE DRY SEASON. — Rural residents in the western parts of England, where ordinarily the annual rainfall is double that which is experienced in the neighbourhood of London and south thereof, and where consequently the proportion of sunshine they get is much less than in the Southern Counties, may often be heard lamenting about the effects of the less favourable climate in which they live. The bright solar rays are invigorating in their influence on animal as they are on plant life; yet, with the almost unprecedentedly dry condition of the soil existent for some distance round London many things are suffering to an extent that can scarcely be imagined. Amongst deciduous trees Horse Chestnuts, Limes, and Mountain Ash are the worst affected, many of these being already half denuded of their leaves. During the week ending August 23 the leaves of some trees—notably Sycamore—were hanging limp, and in a flagging condition, in a way rarely seen in this country. The general leaf-fall will doubtless, in this part, be considerably earlier than usual. Many shrubs have quite stopped growing, and have their buds prematurely formed. Herbaceous plants, where not exceptionally favoured in the matter of soil and situation, are all but dried up; bedding plants, where the soil was not well matured, or regularly supplied with water, have never this summer made the progress they usually do. Roses, where the land is rich, have made good growth after the first flowering; but, unless where watered, the shoots seem now so stagnated that they do not promise to give much in the way of bloom through the autumn. Such vegetables as Beet and Carrots will be small and indifferent in quality; Turnips are hard, stringy, and scarcely eatable, with little chance of there being an autumn crop of this vegetable of much account. Cabbages are tough and leathery; Cauliflowers hard in texture, and when cooked much like indifferent Broccoli in a dry cold spring. The late crops of Potatos in many places came to a full stop in their growth several weeks back, and have now begun supertubering to a large extent; and the grass is so burnt that meadows, pastures, and the corn-cleared stubbles, are all much of a colour. This state of matters is not by any means general through the country. Sixty or seventy miles westward, southward and northward of London the whole aspect of the land is quite different, rain having fallen in quantity sufficient to keep things in a verdant condition, although much drier than usual.

—— ARALIA SIEBOLDI. — This plant rarely perfects its flowers in a greenhouse, and as it flowers naturally in our autumn and winter, the flowers in a cool temperature fall off without getting fertilised. If plants that show a disposition to flower—and old plants usually do that—were put into a house having a night temperature of 55° to 60°, and kept in a gentle growing condition, the flowers that appear, as a rule, when the plant reaches 9 inches in height, would develope themselves in a perfect state. This opening of the flowers is a gradual process, and does not take place over the whole head of bloom at once. A feather or camel's-hair brush can be used to better distribute the pollen. The seeds ripen in about two months, and may be sown in autumn and treated cool, or they may be sown in spring, but then they come up more irregularly than autumn-sown ones.

—— ROYAL ORCHID BOUQUET.—The following is a list of the Orchid blooms contained in a bouquet presented to Her Royal Highness the Princess of WALES on the occasion of a visit last Friday to the Forestry Exhibition, Edinburgh :—Vanda tricolor Patersoni and V. teres Andersoni, Cattleya Leopoldi var. guttata, Brassia maculata guttata, Miltonia spectabilis, Odontoglossum Alexandræ, Uro-Skinneri, tripudians, vexillarium, Rossi, R. majus, Lindleyanum, and Pescatorei; Disa grandiflora superba, Masdevallia Davisi, Veitchi, amabilis, maculata, aurea, octhodes, and Lindeni; Angræcum eburneum, Aërides Reichenbachianum and quinquevulnerum, Cypripedium barbatum, javanicum, Sedeni, longifolium, Harrisianum, and Roezlii; Dendrobium chrysanthum, Stenia fimbriata (resembling the face of MEPHISTOPHELES), Maxillaria grandiflora and venusta, Dendrochilum filiforme, Epidendrum vitellinum, vitellinum majus, prismatocarpum, and cinnabarinum; Phalænopsis Luddemanniana, Saccolabium Blumei majus and guttatum, Oncidium Weltoni, Harrisonianum, Mesospinidium sanguineum and vulcanicum, Nerine Fothergillii major (a Cape bulb). Around the basket were sprays of Prince Albert's Pine; also flowers of Lapageria alba and rosea. Her Royal Highness before leaving gave orders that the flowers should be sent to Dalmeny.

—— LINARIA HEPATICÆFOLIA. — At first sight one might mistake this for our native Ivy-leaved Toad Flax, but the trailing branches are shorter, and cling closely to the ground or stones over which it creeps, forming an evergreen carpet of verdant neatness that is pleasing and attractive to the eye at all seasons. Add to this the lively purple and white flowers that stud the living carpet for the greater part of the summer, and we have a plant suitable alike for the rockery or for carpeting the ground about tall-growing or otherwise leggy plants. On the new rockery at Kew it is used with excellent effect to cover the ground where Narcissus bulbs are planted. It is a native of Corsica, on the mountains, from whence we have a number of miniature and familiar garden plants, such as Stachys corsica, Arenaria balearica, and Mentha Regnieri.

—— RIPENING THE WOOD. — One of the first essentials to enable plants of a hard-wooded nature to flower freely is that the current season's growth should be well-matured; without this, however healthy and strong they may be, it is useless to expect more than a meagre display of bloom. So well is this understood amongst the gardening community that it may appear unnecessary to urge the matter; yet, each returning spring, how often do we hear complaints of

plants flowering indifferently through the preceding season's growth not being properly matured. This more particularly applies to stove and intermediate-house species, the necessity for using more or less shade during the greater part of the growing season tends to a soft pithy condition of the wood. Comparatively few plants, when in their natural element—the open air—need any protection from the sun; but, when indigenous to climates that make the use of fire-heat a necessity with us, shading to some extent has generally to be resorted to—at all events, in the early part of the season, whilst the leaves and shoots are tender; but now, when the summer has got so far advanced, plants of all kinds should be more exposed to direct sunlight. Where moveable shading is used the blinds should not be run down so early in the mornings, even in the brightest weather, and they should be removed correspondingly earlier in the afternoons. Where the glass is smeared with any of the materials generally employed for the purpose, the whole should be washed off where it can be dispensed with, and where the plants are of such a description as not yet to bear being wholly exposed, no more of the mixture ought to be left on than cannot be done without. To further assist the maturing process, less atmospheric moisture should be used by reducing the amount of water thrown on the paths and stages, and by watering early in the morning, so that all that runs through the soil may have time to get dried up before closing the house in the evening. Air should also now be given earlier in the day, and more freely, so as not only to help to mature the growth that has been made, but also to discourage any inclination in the plants to undue extension of their shoots, a condition that invariably occurs when an over-moist close atmosphere is kept up. The natural consequence of such unusually hot weather as we have recently experienced is that many plants in stoves and intermediate-houses are this season full of soft growth, which will require forethought to get it ripened before the autumn is too far gone.



Fig. 54.—Damsons—1, the common damson; 2, the Shropshire damson; 3, the American variety; 4, the Frogmore damson. (see p. 272.)

—— Pyrus malus pendula Elise Rathke.—Pendulous habited Crabs are very rarely to be met with, so that it is with pleasure that we notice the above named sort as having lately been introduced to commerce. According to the *Garten Zeitung* for August 21, "The firm of A. Rathke & Son, at Praust, will introduce a pendulous habited Apple into commerce, which has been raised from seed. This tree combines with beauty of form the property of great fruitfulness, and the weeping habit has proved itself quite constant during ten years, and has a charming appearance either in bloom, in leaf, or in fruit. The fruit, which has not as yet been ascertained pomologically, and certified, is a good medium-sized keeping Apple, lasting till March and April, yellowish in colour, and possessing a tart flavour."

—— Anthurium Veitchii.—The flowers of this species are amongst the least attractive of any; but, like a vast number in the order, they are possessed of an odour (in this case agreeable) that pervades the whole house in which the plant is grown, especially if the atmosphere is moisture-laden. This odour con-

tinues to be given off until the anthers have all shed their pollen, a process which often occupies a considerable number of days, and sometimes weeks, as in the case of A. acaule. The subject of this note, however, is valued as a foliage plant, the leaves of which, when it is grown as a specimen, and afforded sufficient head-room and pot-room, attain a length of 4 or more feet. The blade is oblong, with a cordate base, and pendulous from the top of its petiole, in the manner of an Alocasia. The surface is deep green, and raised transversely into broad convex ridges, which follow the lateral veins in a curved or arching direction. A small but flowering specimen is to be seen in the stove at Kew.

—— LÆLIA DAYANA.—We learn that probably the finest plant in this country of the rare and beautiful Lælia elegans Dayana is now blooming finely at Mr. WILLIAM BULL's, King's Road, Chelsea. It has three spikes, two with seven flowers each, and one with five.

—— DISEASES OF FIELD AND GARDEN CROPS.—We are pleased to be able to announce the publication of a small volume on this subject from the pen of Mr. WORTHINGTON SMITH, to which we shall have further occasion to refer. It is published by MACMILLAN.

—— ST. PETERSBURG INTERNATIONAL EXHIBITION.—The following is the official report by Mr. H. J. ELWES, F.L.S., F.H.S., on the International Exhibition and Botanical Congress at St. Petersburg, 1884, to the Secretary of the Science and Art Department :—

"I was extremely well received, in common with the official representatives of the other great powers, by the Russian authorities, General GREIG in particular, the President of the Imperial Horticultural Society, doing all n his power to make our stay in St. Petersburg both agreeable and instructive. I regret to say that Great Britain was absolutely unrepresented at the Exhibition, which was noticed by the Czar when he opened it, but I can only attribute this to the difficulty and expense of transporting living plants so far, the restrictions imposed by the Phylloxera Convention, and the commercial failure which I believe attended the English exhibitors at the last similar exhibition. Considering the great difficulties under which horticulture labours in Russia the Exhibition was remarkably good, but I observed nothing calling for particular notice on my part, or likely to affect English horticulture. The Botanical Congress was well attended by some of the most distinguished scientific men in Europe, and held seven meetings at which many subjects of economical and scientific interest were discussed. Nothing, however, took place to make a detailed report from me necessary, as most of the papers read were rather of local or technical than of international interest. With regard to the cultivation of Tea in the Trans-Caucasian provinces, a discussion took place, which made it evident, that great efforts are being made by the Russians, which meet with strong support from their Government, to establish this industry on such a scale as to enable them to compete with our important and necessary trade in Indian Tea with Central Asia. It appears to me that this is a subject worthy of the attention of the Indian Government; for, though I was prevented by a severe illness from carrying out my intention of visiting the districts in question this year, yet I have little doubt that the climate and soil in parts of these provinces, is thoroughly suitable for Tea growing ; and though my experience of this industry in the Himalaya leads me to doubt whether a business requiring so much attention to detail will ever be carried on very successfully in Russia, yet it is obvious that any competition in this trade might seriously injure, if not destroy, the business of Tea planting in the north-west Himalaya, which depends so much on the native demand beyond our frontiers. A very general feeling was expressed by many of the best known and most distinguished foreign botanists and horticulturists, which, I think, should be brought under the notice of the Science and Art Department, that an International Exhibition and Congress of a similar nature should be held in London, and considering that England, which is decidedly the first nation in the world both in botany and horticulture, has hitherto been one of the most backward in international enterprises in these branches of science, I am not surprised at the expression of this feeling. The Phylloxera restrictions which have been so harassing to both private and commercial horticultural interests in this country would probably be somewhat relaxed if advantage were taken of such a meeting to prove their general inconvenience and inefficacy. The Royal Horticultural Society, which has been until lately unable to take a lead in this direction on account of their difficulties with the Commissioners about their lease of the South Kensington Gardens, would, I feel sure, be ready to devote the entire energy of their Council and staff towards the promotion of an International and Horticultural Exhibition, if anything like the same consideration and assistance were given them by the Government as have been given to the promoters of the Fisheries and Health Exhibitions. H. J. ELWES."

—— CATTLEYA BRYMERIANA.—A plant of this relatively rare form was sold by Messrs. PROTHEROE & MORRIS to Mr. LEE for 28 guineas.

—— DROUGHT AND LABOUR.—The magnificent weather which has filled our garners with golden grain and has given us such splendid clean crops of Potatos is none the less operating disastrously upon labour, and has made the demand upon it remarkably limited. Literally the drought creates no labour beyond such as is found in gardens where watering is an absolute essential. But in the big market gardens and fields watering is not possible, except in those unusually favoured spots where there is an ample supply, and that is just now a very uncommon case. Weeds don't grow, practically nothing grows. The hay harvest was secured with a minimum of labour, and the corn harvest has been similarly favoured. The Pea crop was of short duration, whilst, with the exception of Potatos, all other garden crops are of moderate bulk, and give much less of labour in the gathering than usual. Even the farmer finds his stubbles so hard baked that scarifying or ploughing is almost out of the question ; and, indeed, if the surface could be broken up sufficiently to make a seed-bed for Turnips, the soil is so terribly dry that the seed would hardly germinate. Altogether the outlook during the coming winter is not a pleasant one for the outdoor labourer, for even were there work to be done market growers have been so hard hit over their fruit crops, and the very poor prices obtainable for other kinds of garden and field produce, that they are compelled to retrench expenditure seriously.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Aug. 25, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W. : —The weather has contidued cloudy and unsettled in the extreme west and north, but in most other parts of our islands (especially over England) it was fine, clear, and warm, until the end of the period, when it became very dull, cold, and showery over the whole country, with thunderstorms in many places. The temperature has been about equal to the mean in "Ireland, N.," but above it in all other districts, the excess varying from 1° in the north and west of Scotland, and in the south of Ireland, to 4° in the east and north-east of England and the east of Scotland. The highest of the maxima were generally recorded on the 24th, when the thermometer rose to 90° in the "Midland Counties" (at Bawtry), to between 85° and 87° in most other parts of England, and to 80° in "Scotland, E." In Ireland the maximum heat recorded was no higher than 74° or 75°, while in "Scotland, N.," it did not exceed 69°. The minima (which were registered in most places on the 20th) varied from 39° in "England, N.W.," and "Ireland, S." and 40° in the "Midland Counties," to 47° in "Scotland, E.," and 50° in the "Channel Islands." The rainfall has been less than the mean in all districts, and especially so over England. Bright sunshine has been more prevalent than during last week in nearly all districts, the percentages of possible duration varying from 22 in "Scotland, N.," and 31 in "Ireland, N.," to 61 in the "Midland Counties," 63 in the "Channel Islands," and 65 in "England, S.W." Depressions observed.—The distribution of barometric pressure during this period has been rather complex. At the earlier part of the week two areas of high pressure were shown, one over the north of Scandinavia, and the other over the south-western parts of our islands and France, while a depression travelled in a north-easterly direction outside our extreme north-western coasts. As the week advanced, however, a high pressure area moved eastwards over the United Kingdom to the easterly shores of the North Sea, producing southerly winds on our western and northern coasts, while south-easterly or easterly breezes were felt in the south. A new anti-cyclone then appeared in the west, while a depression was shown off the west of Norway. The two high-pressure areas were separated by a band of low readings, which at 8 A.M. on the 25th lay over the North Sea, the east of England, and west of France ; northerly winds then became general, bringing the colder weather referred to above.

—— GARDENING APPOINTMENTS. — WILLIAM CHRISTISON, lately at Woodham Hall, Woking, as Head Gardener to RICHARD FOSTER, Esq., Chislehurst.—W. P. LEACH, lately at Kelsey Manor, Beckenham, as Head Gardener to HORACE BARRY, Esq., Bush Hill House, Winchmore Hill, Middlesex. —J. TUBB, as Head Gardener to C. T. KETTLEWELL, Esq., The Lodge, Teddington.

A YORKSHIRE GARDEN.

(*Continued from p.* 234)

IT was impossible to spend a week in Yorkshire without paying a visit to Messrs. Backhouse's nursery. One is drawn towards it by an irresistible impulse. I had often been there before, and the whole place is very familiar to me, but I never could tire of it. The collection of plants is so large that there is always something new and interesting to see. On this occasion there was an important difference in the season of the year from those in which I had gone there before, and that alters everything with plants either for better or worse. The best time for visiting Backhouse's nursery is beyond all doubt in the spring. Somewhere towards the end of April or beginning of May its delights are innumerable. It is somehow associated in my mind with the spring more than any other place that I know. It descends to the level of more ordinary localities at other times of the year, but in spring-time its glory is unique. The other day, when midsummer had been passed, one seemed to look, and look in vain, for Primulas which had been studding the rocks with their beauty, and Gentians, which had clothed them with the brightest of blue. Where was Primula spectabilis with its deep green rosettes, and which always looks so well in this garden because of the horizontal position in which it is grown ? Where was P. marginata with its clear edging of white on the mealy-looking leaves, and the masses of tender violet flowers which said it was happy ? Where was P. rosea which only a few years ago was a novelty and quite took one by surprise, with its rosy-carmine yellow-eyed flowers and foliage of a bright green colour which sets them off wonderfully ? Where were P. involucrata, P. longiflora, P. carniolica, P. japonica, and many another from high alpine altidudes and some from distant parts of the world ? All these are so wedded to the Backhouses in one's thoughts that, go to them when you may, it seems only natural to expect that they will respond to your wishes. But the disillusion is speedy in July. I knew where they had been—I saw in some cases the foliage which told what they would be again ; the loss to me, however, was great. I had a continual pining for the large sheets of Gentiana verna which took with me so much before, and Anemones which dazzled me with a brightness that could not be exceeded—for Fritillarias with their nodding bells, and Ranunculuses and Narcissi and ten thousand other things—all these had passed away like a dream, and even in Backhouse's garden one looks for them but looks in vain, when the year has ceased to be young. It would be well if over his portal it could be written that "Perpetual spring abides here ; " but with an allowance for all this there was still plenty of objects of interest to be found. The whole place itself is so excessively pretty that it can never disappoint—it is only too pretty, if it may be criticised at all. There is an inclination to think that the rockery should be put under a large glass case, so that it may never be spoiled. Nature is somewhat more rugged and abrupt, and not so well finished off, as its good imitation. But the imitation is a good one for all that, and very skilfully managed. A tall crag rises up some 25 or 30 feet, and at its foot there is a kind of basin or tiny lake, which partly surrounds it. There are hollows and recesses covered over with verdure, and Conifers—which are put here and there in abundance—seem to carry one away to alpine solitudes and scenes well remembered in other lands. At many a turn there is some little jutting-out point which gives just the exposure to the sun which alpine plants love, or shelter is afforded where Cypripediums feel themselves at home, and where Ramondia pyrenaica or Haberlea rhodopensis might fancy they are once more in their own native habitats. The Larches, the Spruces, and the Pines add greatly to the variety of the scene, and in some parts of this fairy spot the grass is allowed to grow quite long, and Ferns of many kinds, Polypodiums, Lastreas, Struthiopteris, and I know not what besides, are to be seen in most pleasant concord with Orchises, Primroses, and Violets, which grow here in abundance. Cypripedium spectabile was at its best the other day, and seemed to like the rough moist place in which it was situated. How I envy those who have seen this plant growing wild in America. It differs immensely in cases where it can do what it likes and have freedom for lateral expansion of the roots, and where it is confined and perhaps dried up by the sun, and the roots cannot extend. The wild garden at York suits it exactly, and it was very pretty indeed. A little

narrow path winds up and down through all this captivating scene, and the only regret is when the high Alps are left by it so soon, and the flat tableland is reached. Shrubs in variety grow all over the place in very pleasant confusion, and Berberis Darwinii (if I remember aright) has the pre-eminence which so justly belongs to it. It is somewhat singular that Japanese Retinosporas defy any frost they ever meet with in England.

When I was at Backhouse's the other day I did not come across so many novelties as I have met with at other times of the year, but there were one or two shown to me of undeniable merit. Celmisia spectabilis is a Composite that any one would be glad to possess; the colour is of a soft primrose-yellow, and the whole plant is pretty and neat. One can hardly call Meconopsis aculeata a novelty, but it is an infrequent thing to see it in bloom. Its habit is more compact than that of any of its very desirable congeners, and its bluish-purple look is bright in the extreme and very attractive. It is moreover said to be a perennial, but that remains to be proved. I have had it from Backhouse, but it will not live on with me. It flowered and died. This may, of course, have been from an exceptional cause, and if the very bright little thing which I saw sitting so contentedly on the rocks will consent to become a friend, and really live in one's garden, Meconopsis aculeata should have a very high place in one's esteem and affection. A plant (though not in the rockery) which I liked very much indeed, was Campanula persicifolia grandiflora alba. This is a long-sounding name, but the subject is well worthy of it, if it marks it out as decidedly the best of any Campanula persicifolia I know. In three different gardens I have seen three different things professing to be the same; they have different kinds of excellence about them, but all three must bend their heads before this Campanula of Backhouse's, with which none of them can compete. The provoking part of the business, however, is that all good things are scarce. Not one of those I have named above is in the market at present. They are to be grown on, and after a time they will make their appearance in some new February list, and will then come into our hands. After passing out of the wilderness one comes immediately into the region of frames, which are set in long rows, and protected from the cutting blasts of spring by hedges, which have been put there for the purpose. What treasures do not these frames contain? No miser can gloat over his heaps of silver and gold with greater avidity than any enthusiast in horticultural matters must bend over them—the possibilities of the future of which they are full are so grand and so various.

Here one meets with old friends uncomfortably squeezed into a nutshell, and new ones are made which only want to be let loose from the bondage of small pots that they may astonish you mightily. Who would ever have thought of the capabilities of Cytisus Ardoinii till it can do what it likes? It hangs over shelving rocks—as the catalogue truly says—with "dense procumbent masses of yellow flowers." Who would have suspected that the twiggy little bush of Lithospermum petræum would break out into the dainty appearance of its porcelain-blue clusters in the month of July? These frames show their contents off at the very worst, and you may, as a rule, give a hundredfold greater value to them in point of beauty to be revealed than you would think of at first. Here were Saxifrages and Sedums and Sempervivums both familiar and unfamiliar. Saxifraga Burseriana and S. Burseriana major, S. diapensioides, S. Lantoscana, S. coriophylla, S. longifolia, and S. oppositifolia of several sorts and shades of colour claimed attention at once though they were in a condition of undress. Sedum spathulifolium is at its best in July with its yellow and red, and I think it should have a great deal more notice than it often receives. Sedum Ewersii is a neat little thing in the early summer months; Sempervivum arachnoideum is sure to attract with its cobweb-like net. Phloxes, Dianthuses, Lychnises, Campanulas, and a host of other things were on the look-out for new owners to carry them off, and alpine Veronicas seemed as though they would burst their pots from a mere desire to be free. Under the shelter of a hedge I especially took notice of some Gentians which seemed to be doing very well; Gentiana Frœlichii had been recommended to me by Messrs. Backhouse as one of their best. Its colour is a clear cobalt-blue, and it was prospering in the peaty bed I allude to. I have had Gentiana pumila from them, and it gets on with me wonderfully; I did not espy it the other day at York, but I doubt not it is still to be found there. It is an undeniable little beauty, with the blue colour of the sky itself and shining like a star upon the ground. Gentiana bavarica also meets with its requirements though reputedly of such a difficult nature.

In the main garden I came across many things which might be mentioned. A new hybrid German Iris, called Victorine, was unlike any other I have seen, and noticeable because it is singular. Delphiniums of brightest possible hues made everything look gay, and set off the borders. Rosa rugosa was in very good form and colour, and attested the value of importations from Japan. Potentillas were at their best, and some Pinks, one especially, called Little Gem, was very fragrant and pleasant. There is just one plant which has been introduced by Messrs. Backhouse from Chatham Island, and has been lately sent out by them, about which a special word may be said. I have seen it in blossom, though not in the York Nurseries, and at a much earlier season of the year. I refer to Myosotidium nobile. It is a giant Forget-me-Not, and the contrast of deep blue with clear white in the flower is very effective. But these notes have run on far enough. The houses were hot, and I did not linger in them in the month of July. It is certain that Messrs. Backhouse have a first-rate collection of Orchids, and they tell me the practice is extending of keeping cool Orchids in the open air through a much longer time than used to be deemed advisable.

If in the spring the open-air attractions at York are well nigh unrivalled, it would be difficult to say who has many more at other seasons of the year than have Messrs. Backhouse. *A Wanderer.*

(*To be continued.*)

SALISBURY PLAIN.

When the warm days of July ripen into August is probably the best time to visit the Plain, whether one wishes to hunt up the native flora or admire the whitening fields of waving grain, or pay a visit to the historical and far famed Druidical remains of Stonehenge. Granted that the visitor starts from Salisbury, keeping Stonehenge in his eye as the goal or halting place, it may be reached by one of two roads. The direct way leading over the Plain lies in an almost due northerly direction, while another, and by far the most varied with regard to scenery, passes north-east through a long valley, in which is situated the straggling village of Woodford, with the river Ame on the right and more or less wooded heights on the left. Should the journey be accomplished on foot the pedestrian, if he is that way inclined, will find the flora most interesting along the middle of the Plain.

Contrary to what one would expect, the country is not level but considerably undulated, so that the eye has no great range, except from the top of one ridge to another. At a distance of 3 or 5 miles from the town the vegetation begins to show itself. Although of a mixed and varied nature a considerable proportion is exactly characteristic of the field and old pasture or open plain. The banks by the wayside, however, are sufficiently rich in the choicer natives to avert the attention and divert the time. Campanula glomerata, as it occurs in a wild state, is scarcely recognisable alongside of the grosser growing garden plant, but the wilding is unquestionably the prettier of the two, even if less conspicuous. On the chalk Linaria vulgaris is also dwarfed in its vegetative growth, while the fine yellow flowers attain such a development as even to rival the Antirrhinum. Verbena officinalis, Anthyllis Vulneraria, and Carum segetum are to be picked up in a few places, and the same may be said of Calamintha Clinopodium, the wild Basil, and C. acinos, Basil Thyme. Forms of Thymus Serpyllum occur on dry banks with leaves nearly or quite as hairy as that grown in gardens under the name of T. lanuginosus. The Great Knapweed, Centaurea scabiosa, enlivens the margins of cultivated fields with its purple heads, while Lithospermum arvense and Anthemis arvensis are annual, but less common and unattractive plants affecting similar positions. In some places Daucus Carota is so plentiful as to appear the prevailing weed, whitening the fields with its characteristic umbels of flowers.

On approaching the wild and uncultivated part of the Plain, where the pasture land is tenanted only by grazing sheep and the lonely shepherd, the vegetation becomes rich and varied. While the soft green turf is inviting to the weary and footsore pedestrian, the eye is refreshed and delighted with a most charming profusion of floral beauty in all shades of blue, purple, yellow, pink, and white. Although Carduus acaulis is looked upon as a troublesome weed in pastures where it is in any way abundant, its attractiveness must be admitted where the ground is studded with the deep purple heads about 1½ inch in diameter. Usually the flower is solitary, and nearly stalkless, but occasionally the peduncle is elongated, bearing several heads. The pretty little Asperula cynanchica is abundant, and literally covers the ground in many places with its pink and white flowers. With these a beautiful mixture is produced with the Harebell, Rock Rose, Sainfoin, Dropwort, Restharrow, Betony, Scabiosa columbaria, and numerous others of like nature. In moister places Bartsia odontites luxuriates, and where abundant imparts to the turf as seen from a little distance its own peculiar red or purplish hue. A rare and peculiar Composite is Gnaphalium luteoalbum. A group of half-a-dozen plants may occur in a certain locality and not be seen elsewhere in the neighbourhood. The typical form of Centaurea nigra, with rayed flower-heads, is a charming plant, and if it could be induced to retain its dwarf habit under cultivation, would prove an attractive rockery plant. The usual form has tall, much branching stems, small heads, and is altogether an unattractive plant.

It is rather interesting to note how blue and purple varies to white, as seen in the Scabious above mentioned, Centaurea scabiosa, Campanula rotundifolia, Ononis spinosa, and Malva moschata. Where albinos of the Ononis occur they are rather conspicuous amongst a mass of the common colour, by reason of white flowers and altogether paler herbage of the plant. The Malva varies from rosy-pink to pure white, and is in every respect a good herbaceous plant, deserving of more extended cultivation. In a wild state it ranges from 12 to 15 inches in height, according to the nature and condition of the soil, but generally it affects dry banks or gravelly places—a fact which should be borne in mind where its cultivation is attempted in gardens. If planted in too rich soil the herbage is apt to become grossly luxuriant, at the expense of the flowers. In the present instance the plant is scattered about on the margin of a plantation of Pinus sylvestris, by which it is slightly shaded. The flowers are of good size, and on the greater number of plants of the purest white. A luxuriant crop of Carduus nutans, one of the boldest and showiest of our native Thistles, covers some of the artificial mounds, called barrows, supposed to be ancient burying places, that partly surround Stonehenge within the radius of a mile of the Druidical circle.

By the way, there are few that could fail to be interested in examining the ruins themselves. The huge stones, about twenty of which are standing and others prostrate, measuring 20 feet or upwards in length, give evidence of a wonderful feat of human skill and energy, not only for the primitive times of the Druids, when steam was undreamt of, and machinery all but unknown, but seem even more wonderful through the mist of intervening years. When intact and in its original state the circle is supposed to have been complete, consisting of a series of upright stones, connected at the top with horizontal pieces. Inside this another circle, or, rather, series (some of which are still standing), were arranged to form the outline of a horseshoe. Circles of much smaller stones intervened between these, and the ancient Britons must have been deeply impressed when they assembled to do sacrifice and worship the sun. Whether intentional or accidental, the spire of Salisbury Cathedral is visible from the ruins on a clear day. The spire in question is 400 feet high, and if less remarkable than Stonehenge in these days of invention, is nevertheless a good representative of the age and times. *J. F.*

PLANT PORTRAITS.

Alocasia Sanderiana, *Revue de l'Horticulture Belge*, August 1.

Allium Semenovii, *Gartenflora*, June, 1884, t. 1156.—A flat-leaved species, with heads of yellow flowers. Native of the Alatau mountains.

Aphelandra atrovirens.—An Acanthaceous shrub, native of Bahia, remarkable for its black-green leaves. Flowers yellow, in dense terminal spikes. *Illustration Horticole*, t. 527.

Carpenteria californica, *Revue Horticole*, fig. 84, p. 365, August 16.

Hypocyrta brevicalyx, *Revue de l'Horticulture Belge*, August 1.

Muscari neglectum, Heldreichii, contaminata, botryoides var. album, *Garden*, August 16.

Sedum sempervivum, L., *Gartenflora*, t. 1155, June, 1884.—A very handsome hardy species, with dense heads of crimson flowers.

Yucca Whipplei violacea, *Revue Horticole*, July 16.—See *Gardeners' Chronicle*, 1876, ii., p. 197.

Home Correspondence.

Tomato Chiswick Red.—This fine and prolific variety of Tomato is now in the hands of Messrs. Sutton & Sons for distribution. It will be remembered that it was awarded a First-class Certificate of Merit by the Fruit Committee of the Royal Horticultural Society last year when seen at Chiswick. It is a very prominent and striking object in a very interesting and successful trial of Tomatos now being carried out by Messrs. Sutton & Sons in their Portland Nursery at Reading. Some eighty samples are being grown, among them a number of plants of the Chiswick Red, and it is remarkable what extraordinary clusters of fruit a plant will produce. I counted as many as thirty-two fruits in one cluster, and though this is an extreme number, a large quantity of clusters have from twenty to thirty fruits upon them, and plants have from three to five and six clusters. The fruit is of a large egg-shape, and of a bright red when coloured. For producing a crop there appears to be nothing equal to it, and the plants have had no special cultivation beyond that given to the others forming the trial. It is reported to be one of the best flavoured Tomatos grown, and it is placed among the second early varieties. *R. D.*

Late Potatos.—For ten or more years past I have grown here large numbers of sorts of Potatos, in the hope of selecting from among them the best users, best croppers, and, above all, those that are strong and wiry enough to resist the disease. I am fully aware it is hard to say which is the best variety, but I can state truthfully none are better than Sutton's Reading Hero. Magnum Bonum, Champion and Wormleighton Seedlings are all good Potatos, but do not come to table with that floury look, or with the flavour of Reading Hero. *H. Gilbert.*

Portulacas at Reading. — There is something ravishing in the gorgeous lines of Portulacas which in the Portland Nurseries of Messrs. Sutton & Sons shine forth gloriously in the full flood of the summer sunlight. Here there is a light sandy soil that suits them well, and in spring the seeds were thinly sown on a narrow line of border just within the ornamental tiles that form the boundary of the paths. These Portulacas extend for a considerable distance, and being sown in sections of different varieties, which not only enables one to realise how beautiful they are, but also to give some knowledge of the characters of the different types. There is no difficulty about raising from seeds. Time was when it was thought necessary to sow in heat in early spring and transplant. We have since learned that seeds will lie in the open ground all the winter, and germinating in early spring, unharmed by the rigours of winter, develope into plants of large size and great beauty. Now seeds can be sown in early spring where they are to flower, and in common with Mesembryanthemum, do best on hot, sandy spots. There is a tropical brilliancy about the flowers; they are suggestive of the rich hues of South American vegetation, blooming amid the arid waste like jewels flung upon the wayside. What richness of colour is found in P. Thellusoni, with its brilliant crimson-magenta blossoms: or those of the newer vermilion P. Blensoni. Then there are white, striped, orange, scarlet, rose, and other shades—a great diversity of colour and combinations of colours is found in seedlings. The Portulacas can be used with great advantage on the sunny and exposed parts of rockwork, for they require but little water: and while in time of drought other members of the vegetable kingdom hang their heads for lack of kindly moisture, these show no signs of exhaustion, and expand their charming flowers however hot and dry may be the atmosphere. There are odd corners in most gardens that can be appropriately clothed with Portulacas, both double and single: each section deserves a place in the garden. *X. Y. Z.*

Capparis spinosa.— I have read with great interest the note of "P. L. S." on the Caper bush in your last impression. He leaves off just where I should begin—I mean that I should go off into ecstasies about the unusual beauty of the flower before saying anything else. My excuse, however, for doing that would be that I have the blossom before my eyes, and I can scarcely say too much in its praise. The petals of Capparis spinosa are of the purest white, and the numerous long filaments, which are white below and of a rich purple above, give it a very engaging appearance. I have had the plant on my rockery some four or five years; it was given to me by M. Naudin, of the Botanic Garden at Antibes. It never did anything till now, and I suppose the recent great heat has been helpful to it. At any rate, my garden has a completely new face given to it this year, and we could almost cease to envy the South of France itself if this were to be the common order of things. Tecoma jasminoides is nearly 18 feet high, and is in blossom on the south side of the house. Clerodendron fœtidum, Arctotis aureola and A. speciosa, Trachelospermum jasminoides, Mandevilla suaveolens, Ipomœa candicans, Romneya Coulteri, Philesia buxifolia, Disa grandiflora, &c., all seem very happy now. *H. Ewbank.* [We do not at the moment recollect to have seen the Caper in bloom in this country before. We know that the Oxford Botanic Garden received it many years ago from that of Cambridge, but, subject to correction, we believe both establishments found it no easy plant to propagate, still more to flower. Ed.]

Calceolaria Sinclairii.—Enclosed are flowers of Calceolaria Sinclairii. Is it too fanciful a conclusion to draw from the near approach to regularity in this New Zealand Calceolaria, as compared with South American kinds, that the separation between ancestral forms of New Zealand and South American Calceolarias must have taken place at a very early period? those of South America having become more highly specialised to suit insect fertilisation than this outlying New Zealand specimen of the Calceolaria family has done. If there are other New Zealand Calceolarias, are they more or less irregular than C. Sinclairii? *C. M. Owen.*

Lilium neilgherrense.—This Lily was imported last spring in considerable numbers from India, and it would be interesting to collect information about its habit in cultivation. A friend sent me six fine healthy bulbs in March, half of which were potted, and half planted in the bed of a Lily-house, in good open sandy loam and peat, free from lumps. I say this because I am sure that no obstruction in the soil was the cause of what I am about to tell. Two of the bulbs came up late, and have now healthy heads 8 inches high, but no bud visible. On uncovering the soil to investigate the four others, I find the bulbs healthy; all have made a shoot which has turned downwards over the surface of the bulb, then either horizontally or obliquely downwards. I cannot account for this. An amateur gardening friend, writing from Windermere says that out of twenty-five bulbs he had from India twenty-three have healthy tops, and sixteen are showing flower-buds. *C. Wolley Dod, Edge Hall, August* 27.

Potato Disease.—Amongst the many reports from different districts as to the non-prevalence of the Potato disease this year, I think you have had none from the generally humid mountain farms and gardens of North Wales. Having spent several days in these positions, chiefly in Merionethshire, I am able to report that there never was a better year for Potatos of all sorts. The disease has not been entirely absent, it has only just shown itself on the tips of the leaves, and in a few instances as a spot or two on a small number of tubers. On asking the growers the question whether there has been any Potato disease about—"Oes clwy, Peronospora infestans, ar y tatws (Potatos) ffordd yma?" the answer has invariably been, "O nag oes, Mr. Worthington Smith, does dim o gwbl; nid oes un acrospore, oospore neu hyphæ"—"Oh no, sir, none at all; there have been neither spores, resting-spores, nor mycelium." *W. G. S.*

Pergularia odoratissima.—This fragrant hothouse climber is not nearly so much grown as it deserves to be; although the flowers are not so attractive as the more gorgeous Taxonias, &c., yet a small plant in bloom will give a good-sized house a nice perfume throughout. In habit of growth it is very similar to the Stephanotis, and, like that queen of hothouse flowers, requires to be liberally treated. Planted out in a shallow border of good loam and peat, with a little sand or charcoal to keep it open, and plenty of liquid manure (when well rooted) are its essential requirements, but if not well treated it soon becomes a prey to insect pests. *W. J. Ireland, Headfort.*

Magnum Bonum Potato. — It has, perhaps, never been the lot of any other kind of Potato to be so widely grown as is Magnum Bonum, and though some object to its quality, yet without doubt this season it will be as good as it can be. Those growers who were tempted to plant in February, as some of my neighbours did, have been enabled to lift and market excellent crops of this late kind already, getting very good returns, for Potatos at present, in spite of the absence of disease, do not promise to be very cheap. Late planted breadths are, however, not in such good case, as already are they supertuberating and growing out fast, and the late crops will be, there is reason to fear, considerably deteriorated. Some other late growing sorts show the same bad feature, indeed the drier the soil and smaller the tubers the more danger is there that growing out will result. To lift the crop now would be in most cases to destroy it. Perhaps of the two evils the least will result in letting it alone for two months longer. *A. D.*

A Profitable Orchard-house.—There is a lean-to Orchard-house in the gardens of Mrs. Henderson, Sudbury Hill, Harrow, that deserves a passing note. It is 100 feet long by 12 feet 6 inches wide. On the back wall, which is 10 feet high, there are six Peaches and two Nectarines; the latter, Violette Hâtive and Elruge, both with a large crop. The Peaches are Barrington, Stirling Castle, Noblesse, Lady Palmerston, and Late Admirable. The Barrington and Stirling Castle are of large size and splendidly coloured. At intervals of 2 yards there are Peaches of the same kind as those named above trained transversely on wire trellises. The trees were planted twelve months last February, but all of them have borne a handsome crop, and are making vigorous and healthy growth. Trained the whole length of the roof is a Black Hamburgh Vine, carrying, when I saw it this morning, ninety-seven good bunches. Between the bays near the front was an enormous crop of Tomatos. The sorts were Vicks' Criterion and Hathaway. At one end there is a grand old Maréchal Niel, now past its best, but which has been for some years past producing its 100 dozen blooms. Another, intended as a successor to the old one, is making a start by way of two shoots 22 feet long. This plant is on its own roots, the old one on the Brier. Ventilation is done by crank and lever on back lights, and wooden shutters in front. The only heating appliances are a flow and return 4-inch pipe; a single chaldron of coke has sufficed during the last twelve months. The house affords an agreeable promenade in cold or wet weather, and must be a charming sight in the spring. It is not only beautiful at present, but is producing a large and handsome crop of fruit. Mr. Macleod, the experienced head gardener, has reason to be proud of the results of the skill and attention bestowed on this fine Orchard-house. *T. W., Harrow.*

Grapes at Heckfield.—It is seldom that Mr. Wildsmith has not something interesting or good in the way of Grapes to show his friends at Heckfield, and this season he has, in very fine form, that somewhat rare Grape Gros Maroc. Having regard to the fine character of the samples seen here it is remarkable that those who are so partial to the large berries of Gros Colmar have not ere now more largely grown the other big berried kind. As seen at Heckfield, in a low house in which not only Gros Colmar, but also Alicante, Alnwick Seedling, and other good Grapes are growing, it has the start of all in the matter of colour, for the berries are almost blue-black, whilst those of Gros Colmar are yet half green. The berries, too, are quite as large, and the bunches, though not in this case quite so big, are more handsome. The present is, however, but the second year of fruiting. The foliage is literally as green as grass, whilst that of most other kinds shows signs of colouring, indeed the leaves of Gros Colmar have already assumed their normal reddish tints. Altogether Gros Maroc, at least as grown at Heckfield, looks like a grand Grape, and should suit market growers especially, for it would certainly sell well. That high-flavoured white Grape, Mrs. Pearson, is doing well at Heckfield, as is also Pearson's Golden Queen, and Muscat of Alexandria is very fine, indeed, for the dimensions of the house we have seldom seen a better crop. With none of those wonderful vineries and scientific borders of which we hear so much now and again, Mr. Wildsmith always has something pretty good in Grapes, and generally abundant crops. *A. D.*

Wild Gardening at the Wilderness, Reading.—Whilst there is always much of interest to see at this place in the way of well kept grounds, good specimen plants, handsome Conifers, rare trees and shrubs, and, not least, a singularly representative hardy fernery, many visitors will not fail to find in a secluded bit of semi-wild gardening much to attract their attention. Here, surrounded by dense shrubs, and in soil that seems to be half vegetable, and productive of luxuriant growth, Mr. Lees has planted many kinds of hardy flowers that in their respective seasons bloom abundantly, and yet are in no sense specially cared for. Very beautiful indeed, blooming luxuriantly at a height of about 4 feet, was the Monarda didyma, its reddish-crimson flowers borne in tufts glowing like fire in the sunlight; M. alba

was also in abundant bloom, though less conspicuous. A huge Chrysanthemum leucanthemum maximum was in fine flower, and though somewhat sprawling by reason of its very robust growth, yet it made ample amends with the exceeding abundance of fine single white blooms produced. The companion yellow-flowered plants, Rudbeckias, and Harpalium rigidum, were also in good bloom, both furnishing favoured flowers for house decoration. That singularly pleasing blue Eryngium amethystinum, thrives well, and its curiously cut foliage tells well in vases, and is very enduring. The Arundo donax was doing well, and lent a sub-tropical aspect to this wild garden. In order, however, that the weakest shall not be allowed to go to the wall, as in a state of Nature, this garden gets overhauled sometimes, and the growths of the strongest reduced; that much, at least, is needful, if little plants are to have a chance by the side of big ones. *L. G. D.*

Fuchsias at Trowbridge Show.—Persons who have attended this show for years past, say that the Fuchsias were never before finer than the specimens seen on this occasion. Mr. J. Lye, of Clyffe Hall, Market Lavington, was again 1st in the classes for six and four varieties, staging plants averaging 9 feet in height, and from 4 to 5 feet through at the base. The varieties shown were mainly those of Mr. Lye's own raising, and they were characterised by that bold growth and amazing floriferousness seen in the Clyffe Hall strain. It might be objected that the method of training adopted by Mr. Lye is too formal, the flowering branches being tied down to the framework of the plants a little too tightly, but this is to a great extent a matter of necessity. The plants have to be conveyed by road for a considerable distance, and it is necessary to tie the branches in to keep them from whipping each other. But there is no framework of stakes, one stout central stake is all that is required. But formal as the plants are deemed to be by some, they are not without a good deal of elegance; the foliage is perfect, forming a kind of inner garment overlaid with the rich jewellery of hundreds of finely-developed blossoms. When the plants are staged it can scarcely be conceived they have travelled so far, as but few flowers are injured on the journey. "What a great extent of glass accommodation must be required to grow these plants!" said a visitor to the show in my hearing; but the very reverse is the fact. It is true the plants, which are pruned into shape about November, are kept in a greenhouse all the winter, and break into growth then, as well as make some headway; but the fact is, all the finishing off is done in the open air. Early in the summer the plants are stood out-of-doors, each pot being placed on a piece of board, and a rough canvas awning is spread over the plants. Here they are carefully tended, well looked after in the matter of watering, and fed occasionally with liquid manure, and it is these attentions that lead up to the development of such splendid specimens. Fuchsias are also very finely shown in this district by nurserymen also; and the plants staged by cottagers, and in not a few instances grown under difficulties, are far in advance of what may be seen at many provincial shows. The Fuchsia is pre-eminently the exhibition plant of the Trowbridge district, as is abundantly shown also at Devizes, Bath, Calne, Keevil district, and elsewhere. *R. D.*

Rubus chamæmorus.—In a note at p. 178 it is stated that "It is a plant rarely met with in Scotland," and at p. 214, "Although in these islands it occurs only on a few of the higher mountains of Scotland, &c." I am happy to inform your readers that it grows abundantly along the watershed between the counties of Roxburgh and Northumberland, Dumfries, and Selkirk, at elevations varying from over 2500 feet on Cheviot to 1250 at Moodlaw Loch. Possibly it may occur lower, but that is the lowest station where I have observed it. It grows in large beds, often many acres in extent, and though in some beds the barren and fertile plants are intermixed, they occur more frequently separate. The local name by which it is known amongst the shepherds is "noops." *A. Brotherston* (see p. 268).

Smut in Primula farinosa.—The fungus destroying the seeds of Primula farinosa in Mr. Wolley Dod's garden (vide *Gardeners' Chronicle*, p. 148) is doubtless Urocystis primulicola, Mag., which was first observed in the island of Gothland, Sweden, near Wisby, on Primula farinosa, and is described by Dr. Magnus in *Hedwigia* for 1879. I think this is the first record of the appearance of it in Britain. *William Phillips, Shrewsbury.*

Parsley.—So difficult is it now found to obtain good usable Parsley in some gardens, because it early becomes affected by some kind of fungus or disease, that it would be very useful to learn whether any one has succeeded in devising some successful antidote. The fungus, if such it be, seems to operate most disastrously in dry seasons, such as the present, and perhaps, like the Hollyhock fungus, is the more prolific in drought. Still, in certain localities about London it is so difficult to obtain Parsley at any time that the providing a supply has become a problem not easy to solve. Even in the earliest stages of the attack the foliage assumes a sort of reddish-brown hue, and then soon dies. I found old plants this year so much affected that in seeding they have stems only, not a leaf being on them. On the other hand, young plants have, considering the great drought, done very well, and are fairly green and vigorous. Still, these are exceptional cases. I have advised the sowing of the seed in shallow boxes under glass, and thus securing fairly strong plants to dibble out, but that should be done early in March to obtain a stock of summer plants, and again in August to secure plants to go out in October. But gardeners want to know if the remedy for the disease, let it be what it may, can be found to be employed largely. Parsley is a valuable market product, and can ill be spared, whilst private gardeners find themselves too often in a position of difficulty with regard to even an ordinary supply for domestic use. *A. D.* [We do not find any trace of disease, but only of intensity of colour probably due to the hot dry season. The reddish colour is by no means unattractive as a garnish. Ed.]

Reports of Societies.

Royal Horticultural: *August* 26.

Floral Committee: *Section A.*—Present: Mr. J. O'Brien, in the chair; and Messrs. Hudson, Herbst, Dominy, and Laing. *Section B.*—Present: Shirley Hibberd, Esq., in the chair; and Messrs. G. F. Wilson, J. James, S. Ford, Duffield, Howcroft, H. Turner, H. Bennet, and H. Cannell.

Of flowers shown on this occasion were a quantity of German Asters of various sections of this pleasing genus, ranging from dwarf Chrysanthemum-flowered varieties, not exceeding 9 inches in height upwards, to others of more than 2 feet; these plants were shown by Messrs. Carter & Co., High Holborn, London. Messrs. Kelway & Son, Langport, Somerset, exhibited a brilliant collection of Gladioli, numbering 168 trusses; many of these were very fine blooms, grown as only now seems possible on the soil of Langport; other growers allege that they have Gladioli as good, but they have not been seen at exhibitions in recent years, which is a matter for regret, seeing how popular the flower has always been. Mr. Ware, Hale Farm, Tottenham, contributed two boxes of pretty single Dahlias, amongst which were observed Indian Chief, a lemon-coloured flower; Pet, violet and white; Gambetta, Beauty of Cambridge, Lucy Ireland, Negress, Victory, and several others, pretty of colour and pleasing in form. Some stands of show varieties came also from the same source. Mr. Turner showed a variety of Lilium auratum vittatum rubrum with a large amount of cinnabarred spots on the petals; also stands of show and fancy Dahlias of much merit, and a new Dahlia, Arab, a medium-sized bloom of a deep claret colour; Orlando, a flower of nearly the same tint, and a fancy sort named Lucia, cream suffused and tipped purplish-lilac. Dipladenia Elliotti, from Messrs. Lucombe, Pince & Co., was a very showy variety, rosy-scarlet, in the way of amabilis, but larger than that sort is generally seen, and with foliage remarkably vigorous and handsome. Messrs. Cannell & Son showed a new single Begonia, Queen of Bedders, a profuse flowering pink kind, as well as a small collection of miniature-flowered double and single varieties of Dahlias, very useful for vases and house decorations, whatever may be their value in the garden. From Messrs. Cannell came a double form of Abutilon Thompsoni, that would make a good pillar or rafter plant, where the bloom would be better observed.

The awards made were:—

First-class Certificates.

To Messrs. Laing & Co., Stanstead Park Nursery, Forest Hill, for Begonia Souvenir de W. Sandy.

To Messrs. Rawlings Bros., Romford, for Dahlia Mrs. Douglas.

To Messrs. Kelway & Son, for Gladiolus St. Gatien.

To Mr. T. S. Ware, Hale Farm, Tottenham, for Bessera elegans.

To Messrs. Cannell & Sons, for Begonia Queen of Bedders.

To Messrs. Lucombe, Pince & Co., Exeter, for Dipladenia Elliotti.

Votes of Thanks.

To G. F. Wilson, Esq., for Lilium tigrinum florepleno.

To Mr. W. Bealby, for double Begonias.

To Messrs. Kelway & Son, for cut blooms of Gladioli.

Silver-gilt Medal.

To Messrs. Carter & Co., for Asters.

Bronze Banksian Medal.

To Mr. T. Ware, for Dahlias.

To Mr. C. Turner, Slough, for a Dahlia group.

Fruit Committee.—Present: J. E. Lane, Esq., Esq., in the chair; and Messrs. Goldsmith, Ross, Bunyard, Sidney Ford, P. Crowley, Howcroft, W. Sutton, Mundell, Lyons, Blackmore. This was essentially a fruit show, although supplemented by some of the usually seasonable floral productions—as Gladioli, single and double Dahlias, Asters, and a few others. Amongst the fruit shown were some large Pines, Smooth Cayenne variety; and very fine Peaches, viz., the Barringtons shown by C. Haycock, the Bellegardes of Mr. W. Coleman, and Princess of Wales of Mr. J. Roberts. These fruits generally, and Nectarines, and some Plums that are rarely seen highly coloured, such as Washington, really glowed again with the colours our hot suns had painted them this year. The Plum was exhibited in many kinds, but unfortunately not all of them in such a ripened state that the true colour could be seen. For the best collection of fruit, to consist of ten kinds, 1st, Mr. J. Coomber, gr. to J. A. Rolls, Esq., M.P., The Hendre, Monmouth. This superb lot comprised a Smooth Cayenne Pine of 8½ lb., just ready for use, Muscat of Alexandria, Alnwick Seedling Grapes (the latter kind being exceptionally fine in bunch and berry, and of the true blue-black tinge), Peach Stump the World, Apricot Hemskirke, Fig Negro Largo, Nectarine Pitmaston Orange, very fine; Williams' Bon Chrétien Pear, and Hendre Seedling Melon. If we may criticise so good a lot we would say that the Figs were the weakest point, being rather small for the kind. 2d, Mr. W. Coleman, gr. to Lady Henry Somerset, Eastnor Castle, Ledbury, who had Smooth Cayenne Pine, with a good but not over-large crown, and with a probable weight of 7 lb.; Muscat of Alexandria Grapes, medium in bunch, but with very fine berries; Gros Maroc, nice bunches, of perfect finish, one being considerably the largest; Melon High Cross Hybrid, Fig Brown Turkey, Apricot Moor Park, Peach Royal Kensington, large, and well coloured; Plum, Kirke's; Cherries, Morello, of superior merit, these last named; 3d, Mr. J. Roberts, gr. to Messrs. Rothschild, Gunnersbury Park, Acton, who had Grapes Gros Maroc and Foster's Seedling, small, but high-coloured; Peach Belle Beauce, Pine Smooth Cayenne, Melon William Tillery, Fig Brunswick, Nectarine Victoria, &c. For the best pair of Pine-apples.—1st, Mr. J. Hudson, gr. to A. J. Atkinson, Esq., Gunnersbury House, Acton, Smooth Cayennes, weighing 7½ lb. and 6½ lb. respectively, broad, well-swelled, pipped fruit, in good condition; 2d, Mr. Coomber, with the same variety; 3d, Mr. Mundell, Moor Park, Rickmansworth. In the competition for the best dish of Morello Cherries.—1st, Mr. W. Coleman; 2d, Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle; 3d, Mr. Ford, gr. to Egerton Hubbard, Esq., Leonard's Lee, Horsham. This kind of Cherry was generally well shown, and comprised a great many dishes. Figs were a poor exhibit, Mr. C. Ross, gr. to Charles Eyre, Esq., Welford Park, Newbury, taking the only award—a 1st prize for a dish of white Marseilles, and one of Brunswick. For the best collection of Plums.—1st, Mr. C. Haycock, gr. to Roger Leigh, Esq., Barham Court, Maidstone. This lot consisted of the following:—Gages, Bryanstone, Transparent, Braby's, Old, Jodoigne, Boddaert's, Brandy; Coe's Golden Drop, Pond's Seedling, Belgian Purple, Kirke's Prince Englebert, Black Diamond, Autumn Compote, Reine Claude de Bavay, Jefferson's Prince of Wales, Victoria, White Magnum Bonum. 2d, Mr. J. H. Goodacre, who had good fruits of Dennistone's superb Washington, Angelina Burdett, and twenty-one other kinds; 3d, Mr. A. G. Bridgeman, gr. to T. Somers Cocks, Esq., Thames Bank, Marlow, who had fourteen varieties, small, but with the bloom on the fruit well retained. For the best six kinds of dessert Plums.—1st, Mr. Chadwick, Hanger Hill House, Ealing, who had good Jefferson, Green, and Bryanstone Gages; 2d, Mr. Bridgeman, whose Jeffersons were particularly fine. For six kinds of culinary Plums.—1st, Mr. B. S. Austen, Somerset Lodge, Petworth; 2d, Mr. Bridgeman; 3d, Mr. J. H. Richards, gr. to the Earl of Normanton, Somerley House, Ringwood. For three kinds of Plums.—1st, Mr. Bridgeman; 2d, Mr. Coleman; 3d, Mr. E. Chadwick, For Plums having the highest flavour.—1st, Mr. Chadwick, with the old favourite Green Gage; 2d, Mr. Chadwick, same kind; 3d, Mr. Halliday, gr. to J. Morris, Esq., Castle Bletchingly, with Early Green Gage. For the best lots of Peaches in three kinds, six fruits of each, there were many entries.—1st, Mr. Haycock, with Walburton Admirable, Barrington, and Early Louise; 2d, Mr. J. Roberts, whose Princess of Wales was greatly admired for its size and colour; 3d, Mr. Harris, gr. to Mrs. Vivian, Singleton, Swansea, with splendidly coloured examples. For one dish of Peaches, Mr. Haycock was again the winner of the 1st prize, Mr. Coleman the 2d, Mr. Harris the 3d. For the best three dishes of Nectarines, distinct.—1st, Mr. J. Roberts, with Victoria, Pine-apple, and Lord Napier; 2d, Mr. Coleman; 3d, Mr. Aslett, gr. to C. Butler, Esq., Warren Wood, Hatfield. For best dish of Nectarines.—1st, Mr. Aslett, with

Pine-apple; 2d, Mr. Halliday; 3d, Mr. Coleman. For early Apples in three kinds.—1st, Mr. Haycock, with Duchess of Oldenburg, Emperor Alexander, and Devonshire Quarrenden; 2d, Mr. C. Ross, with Red Astrachan, Mr. Gladstone, and Early Harvest; 3d, Mr. S. Ford, with Worcester Pearmain, Red Hawthornden, and Red Astrachan. For the best dish of ripe Pears.—1st, Mr. Goldsmith, The Gardens, Hollanden, Tonbridge—sort, Bon Chrétien; 2d, Mr. J. Roberts; 3d, Mr. Goodacre. In the miscellaneous fruits shown was a dish of the large alpine Strawberry, Quatre Saisons, for which Mr. J. Roberts was awarded a 1st prize. Mr. Ford showed Melons, and Mr. W. Coleman was awarded a 2d prize for a handsome dish of Citrus Nonpareil, apparently ripe, and garnished with their own leaves. Extra prizes were given to Mr. E. Chadwick for a quantity of fruits, inclusive of Carter's Prolific Raspberries, French Crab (season 1883). Messrs. Lane & Son showed a collection of early kinds of Apples, chiefly consisting of kinds used in dessert.

VEGETABLES.—Potatos proved somewhat disappointing, having regard to the great promise of the season, as but few of the better known growers competed, possibly because wishing to hold back for later shows. There were but nine collections of twelve dishes in competition, the best—and a very good lot too—coming from Mr. C. Herrin, gr. to J. Hibbert, Esq., Chalfont Park, Slough, who had nine white kinds, excellent samples of Veitch's Ashleaf, Magnum Bonum, Cosmopolitan, Sunrise, Prime Minister, and Snowdrop; and of coloured kinds, Cardinal, The Dean, Radstock Beauty, Vicar of Laleham, Reading Russet, and Beauty of Hebron. Mr. C. Moss came 2d, with a fair lot, some of the kinds being excellent; Aspirant, flat white, was specially so, and Magnet was smooth and pretty, though evidently a Lapstone; M.P. was a large round kind, like to Climax; Fillbasket and First and Best were other white kinds; and of coloured sorts the mottled red Kidneys, Lifeguard and Princess of Wales, Prizetaker and Reading Russet, were very good. Mr. S. Ford came 3d, with a fair clean lot, but a trifle large, Beauty of Kent, Early Giant, Purple King, a large flat deep-coloured kind; Fillbasket and Prizetaker were noteworthy. One exhibitor had put in two Ashleafs in his otherwise fairly good collection, whilst one evidently new to the work had not washed his tubers.

A novel and interesting class was found in one for half a peck of pickling Onions, the exhibitors variously interpreting this to mean a plateful or a big basketful. There were eight lots staged, the best, a very pretty even sample of Silverskin, coming from Mr. C. F. Pragnell, Kensington District Schools, Banstead; Mr. C. Moss coming next with same kind but samples decidedly too large, and Mr. Osman, the South Metropolitan Schools, Sutton, was 3d with a pretty well selected sample of Reading Onion. It is worth of note that whilst the Silverskin may be the most favoured "pickler" in the still room, the large trade picklers will have only a good clean sample of Reading or White Spanish, of which hundreds of tons are grown in this country annually for but two or three firms.

Vegetable Marrows and Squashes, six fruits, in not less than two kinds, brought poor representatives, only three lots being staged. Mr. J. Waite, Esher, was placed 1st, with pretty, smallish samples of Long White, Prince Albert, and Moore's Cream Marrows; Mr. Osman coming 2d, with Green Striped, Long White, and the white and green Custard Marrows. Mr. Mundell, Moor Park, came 3d, with Large White and Ohio Squash, both kinds rather big. The competition was hardly what might have been expected, but it would seem that few gardeners grow any of the numerous forms of Gourd or Squash found in seed lists.

Tomatos formed a very prominent feature in the show. There were twelve dishes in competition for the capital prizes offered, and the samples generally were first-rate. Mr. N. Phillips, gr. to D. Baber, Esq., Meopham, Kent, had a splendid dish of his Perfection, like to Excelsior, but much finer, and very handsome. Mr. H. W. Ward, The Gardens, Longford Castle, was 2d, with superb Trophy; and Mr. C. Moss came 3d, with Hackwood Park, a fine, handsome variety, with slightly angular ribs. The richly red forms, of which there were one or two dishes, stood no chance in this competition. One little collection of Capsicums was not thought worthy of notice. There were no Tomatos in pots sent for competition, but there came from the Society's gardens at Chiswick nine fine plants well fruited, including such superb kinds as Reading Perfection, Lord Wolseley, Golden Queen, &c.; also from the same gardens came a very interesting collection of Capsicums, and Chilis in pots, including the huge Monster, and sweet Spanish, both red kinds, very mild and sweet, and used by the Spaniards sliced with bread as ordinary food. Of other kinds there were Carter's Mango Pepper, Golden Dawn, large, abrupt-shaped, yellow; the hot Long Red, some fruitful Chilis, and many plants of that pretty ornamental Capsicum, Little Gem. Messrs. J. Carter & Co. staged twenty-six plants in pots of Tomatos, all well fruited, including Peckham Favourite, a very fine kind; Holborn Ruby, Criterion, and Green Gage, and the pretty small-fruited Coral Red Pear, Grapeshot, and Red Currant. In the competition for prizes offered by this firm for six dishes of Tomatos, to include Dedham Favourite, Green Gage, and Criterion, Mr. Phillips was a good 1st, with fine samples of the kinds named, and Trophy, Perfection, and Large Red; Mr. Gilmour, Hawkhurst, Kent, was 2d, with large Stamfordian, a kind named Glamorgan, and Wheeler's Prolific; Mr. S. Castle, West Lynn Vineyard, was 3d. For a single dish of Wheeler's Prolific Tomato, special prizes being offered by Messrs. J. C. Wheeeler & Sons, Gloucester, the best sample came from Mr. Castle, and the 2d from Mr. Gilmour. Mr. Barron further added to the interest of the show by sending from Chiswick a collection of gathered fruits of some eighteen kinds of Tomatos, including all the best kinds grown, and also a large collection of Onions, chiefly of French and Italian kinds. It may be remarked that many of the varieties of Onions cultivated in European countries are well deserving of cultivation by our own gardeners, possessing as some do exceedingly mild flavour, and the characteristic of maturing early.

The National Carnation and Picotee Society (Northern Section).—On the 12th ult., twenty-one days after the exhibition of the Southern Section of the Society, on July 22, the Northern meeting was held under the auspices of the Council of the Royal Botanical and Horticultural Society of Manchester in the noble Town Hall of that city. The interval well illustrates the variable period of flowering of these summer-blooming plants, though two exhibitions fail to bring the growths of all interested into focus on the days as now chosen, and at least a third exhibition should be organised. The date as hitherto chosen for the South, is suitable for the London district and some 30 or 40 miles to the north; and the second week of August will, with usual seasonal conditions, meet the needs of the growers from the hill districts of Lancashire and Yorkshire; but this leaves a large area, commencing in the south and east with Oxford and Cambridge, and continuing through the Midlands to South Yorkshire and York, and west and south of Manchester, where the bloom culminates midway between the dates of the Southern and Northern exhibitions respectively, and where consequently the lovers of the flower realise, save in an exceptional year, the unhappy condition expressed in the old saw of being "between two towns at dinner-time." Probably by a supplementary exhibition, as in 1882 and 1883, or by an independent organisation, the evil will in future years be obviated.

Of this exhibition itself we have nothing but praise to speak. At South Kensington the flowers were glorious, but they were fully equalled for growth, and surpassed in the depth and richness of colour by those produced by Mr. Robert Lord, of Todmorden, and Mr. J. Whitham, of Hebden Bridge, who were 1st in the twelve blooms, dissimilar, and twelve blooms, nine dissimilar, respectively. Eighteen exhibitors contended for honours at South Kensington—a marvellous addition to the three and four of the years before the revival of the Southern meeting; twenty-seven good men and true brought exhibits to Manchester. Thirty-nine stands of twelves, twenty boxes of sixes, and some 400 or 500 single specimens were placed on the table. Mr. Lord's 1st prizes, both in Carnations and Picotees, were almost perfect; and premier prizes were fitly awarded to his fine specimens of Master Fred, C.B. (Hewitt), in Carnations, and Muriel, H.P. (Hewitt), in Picotees. Thus, as at South Kensington, the premier award both in the Carnation and Picotee, went to productions of the same raiser—an unprecedented event in the history of the Carnation and Picotee, and we heartily congratulate Mr. Hewitt thereupon.

New flowers were not numerous, but they were good. Mr. Whitham had a dark, richly marked C.B. in the way of Thomas Moore, but somewhat fuller, in the leading place in his stand; and Mr. B. Simonite, whose Picotees should have had 2d place, brought his fine rose or scarlet-edged seedlings, four, commented upon last year, and a light-edged red of great promise, darker in colour than Mrs. Gorton or Thomas William, a variety raised at Kirkby Malzeard from Mr. Simonite's seed by Mr. Horner, which if of two or three days younger growth would possibly have disputed honours for the premiership. Mr. John Cliff, of Wortley, sent a fine seedling self of a deep flesh tint, which was highly commended, and a heavy-edged purple Picotee, which the judges desired to see again. Mr. Chadwick had also some promising seedling Picotees, the best being a heavy purple of a very rich and deep shade, which with good growth is likely to obtain a very prominent place in its class.

The judges for the twelve bloom class, dissimilar, and single specimens, were Mr. John Bayley and Mr. Jonathan Booth; and for the remaining classes Mr. B. Simonite, Mr. John Beswick, and Mr. E. S. Dodwell.

The following is a list of the prizes:—

CARNATIONS.—Class A. Twelve blooms, dissimilar.—1st, Mr. Robert Lord, Todmorden, with Master Fred, C.B.; Earl of Wilton, P.F.; J. D. Hextall, C.B.; Fred, S.B.; James M'Intosh, S.B.; Squire Llewelyn, P.P.B.; Admiral Curzon, S.B.; President, P.F.; Albion's Pride, C.B.; Sportsman, S.F.; Rob Roy, R.F.; Robert Lord, S.B. 2d, Mr. J. Beswick, Middleton, with George, S.B.; Ivanhoe, S.F.; Master Fred, C.B.; Lord Napier, S.B.; John Keet, R.F.; William Skirving, P.P.B.; James Cheetham, S.F.; Lord Milton, C.B.; Eccentric Jack, C.B.; Earl of Wilton, P.F.; Mrs. Barlow, P.P.B.; Admiral Curzon, S.B. 3d, Mr. Geo. Geggie, Bury. 4th, Mr. Ben Simonite, Rough Bank, Sheffield, with James Douglas, P.F.; Sarah Payne, P.P.B.; Seedling, R.F.; Seedling, P.P.B.; Arthur Medhurst, S.B.; Seedling, S.F.; William Skirving, P.P.B.; Seedling, R.F.; Seedling, S.F.; John Simonite, C.B.; Seedling, C.B.; Robert Lord, S.B.

Class C. Twelve blooms, nine dissimilar.—1st, Mr. J. Whitham, Hebden Bridge, Yorkshire, with Seedling, C.B.; Mercury, S.B.; Shirley Hibberd, C.B.; Admiral Curzon, S.B.; James Douglas, P.F.; Squire Llewelyn, P.P.B.; Clipper, S.F.; James Douglas, P.F.; Fred, S.B.; J. D. Hextall, C.B.; George, S.B.; Eccentric Jack, C.B. 2d, Mr. E. Shaw, Bury, with James Cheetham, S.F.; Crista-galli, R.F.; Rifleman, C.B.; George, S.B.; John Keet, R.F.; Sir Joseph Paxton, S.B.; Fred, S.B.; Dr. Foster, P.F.; Mercury, S.B.; Clipper, S.F.; Admiral Curzon, S.B.; James Cheetham, S.F. 3d, Mr. F. Law, Todmorden. 4th, Mr. J. Whittaker, Royton. 5th, Mr. Richard Gorton, Gildabrook, Eccles.

Class E. Six blooms, dissimilar.—1st, Mr. S. Barlow, Stakehill House, Castleton, Manchester, with Arthur Medhurst, S.B.; James Taylor, P.P.B.; Seedling, R.F.; James Cheetham, S.F.; Seedling, C.B.; Sir Garnet Wolseley, P.P.B. 2d, Mr. G. Thornley, Middleton, with Lord Milton, C.B.; Fanny Gardiner, —; Splendour, S.F.; Lord Napier, S.B.; J. D. Hextall, C.B.; Earl of Wilton, P.F. 3d, Mr. W. Slack, Chesterfield. 4th, Mr. Howard. 5th, Mr. Bealey. 6th, Mr. J. Pemberton. 7th, Mr. J. Kitchen.

Class G. Single specimens, in classes.—Scarlet bizarres: 1st, 2d, and 3d, Mr. Robert Lord, with Admiral Curzon. 4th and 5th, Mr. J. Beswick, with Lord Napier. 6th, Mr. B. Simonite, with Robert Lord. Crimson bizarres: 1st, 2d, and 3d, Mr. R. Lord, with Master Fred. 4th, Mr. F. Law with the same. 5th, Mr. J. Whitham, with J. D. Hextall. Pink and purple bizarres: 1st, Mr. B. Simonite, with Seedling; 2d, with William Skirving; 3d and 5th, Mr. G. Geggie, with Mrs. Barlow; 4th, with James Taylor; 6th, with Sir Garnet Wolseley. Scarlet flakes: 1st and 2d, Mr. G. Geggie, with James Cheetham; 3d, Mr. R. Lord, with Sportsman; 4th, Mr. J. Beswick, with James Cheetham; 5th, with Ivanhoe; 6th, Mr. J. Whitham, with Henry Cannell. Rose flakes: 1st and 6th, Mr. F. Law, with Crista-galli; 2d and 3d, Mr. R. Lord, with the same; 4th, with Lovely Ann; 5th, Mr. William Taylor, Middleton, with Crista-galli. Purple flakes: 1st, Mr. R. Lord, with Squire Whitbourn; 2d, with President; 4th, with Squire Trow; 3d, Mr. G. Geggie, with James Douglas; 5th, Mr. F. Law, with Earl of Wilton; 6th, Mr. E. Shaw, with Dr. Foster.

PICOTEES.—Class B. Twelve blooms, dissimilar.—1st, Mr. R. Lord, with Mrs. A. Chancellor, H.P.; Clara Penson, L.P.; Lady Holmesdale, H.RO.; Master Norman, H.R.; Brunette, H.R.; Mrs. Allcroft, L.RO.; Thomas William, L.R.; Edith D'Ombrain, H.RO.; Zerlina, H.P.; Miss Horner, L.RO.; Ann Lord, L.P.; Robert Scott, H.R. 2d, Mr. J. Beswick, with Charles Williams; Minnie, L.P.; Bonnie Jean; Mrs. Wilson, H.R; Mary, L.P.; Alliance, H.P.; Dr. Abercrombie, H.R.; Daisy, L.RO.; Muriel, H.P.; J. B. Bryant, H.R.; Thomas William, L.R.; Mrs. Summers, H.P. 3d, Mr. B. Simonite, with Seedling, L.R.P. (Horner); Mrs. Niven, H.P.; Seedling, L.RO.P.; Jessie, M.P.; Seedling, H.RO.; Clara Penson, L.R.; J. B. Bryant, H.R.; Seedling, L.RO.; Muriel, H.P.; Seedling, H.SC.; Mary, L.P.; Zerlina, H.P. 4th, Mr. G. Geggie. 5th, Mr. J. Chadwick, Dukinfield.

Class D. Twelve blooms, nine dissimilar.—1st, Mr. F. Law, with Mrs. Payne, H.RO.; Minnie, L.P.; Mrs. Allcroft, L.RO.; Zerlina, H.P.; Beauty of Cheltenham, M.P.; Brunette, H.R.; Nymph, L.P.; John Smith, H.R.; Thomas William, L.R.; Ann Lord, L.P.; Miss Horner, L.RO.; Mrs. Gorton, L.R. 2d, Mr. R. Gorton, with Purple Prince, H.P.; Mrs. Payne, H.RO.; Alliance, H.P.; Thomas William, L.R.; Rev. F. D. Horner, L.R.; Mary, L.P.; Thomas William, L.R.; Ethel, L.RO.; Mrs. A. Chancellor, H.P.; Fanny Helen, H.RO.; Alliance, H.P.; Mary, L.P. 3d, Mr. W. Taylor. 4th, Mr. E. Shaw. 5th, Mr. J. Whittaker.

Class F. Six blooms, dissimilar.—1st, Mr. S. Barlow, with Emily, M.R.; Zerlina, H.P.; Medina, H.P.; Thomas William, L.R.; Minnie, L.P.; J. B. Bryant, H.R. 2d, Mr J. Whitham, with Zerlina, H.P.; Royal Visit, H.RO.; John Smith, H.R.; Minnie, L.P.; Brunette, H.R.; Thomas William, L.R. 3d, Mr. G. Thornley. 4th, Mr. S. Lord. 5th, Mr. T. Howard. 6th, Mr. R. Bealey. 7th, Mr. J. Pemberton.

Class G. Single blooms.—Heavy reds: Mr. J. Bleachley, 1st, with Brunette; Mr. R. Lord, 2d, with John Smith, 3d, with Mrs. Dodwell; Mr. G. Geggie, 4th, with John Smith; Mr. J. Chadwick, 5th, with Seedling; Mr. S. Lord, 6th, with John Smith. Light reds: Mr. R. Lord, 1st, 4th, 5th, and 6th, with Thomas William; Mr. B. Simonite, 2d, with Seedling (Horner); Mr. R. Gorton, 3d, with Thomas William. Heavy purples: Mr. R. Lord, 1st, with Muriel; 4th and 5th, with Zerlina; Mr. G. Geggie, 2d and 3d, with Zerlina; Mr. F. Law, 6th, with the same. Light purples: Mr. R. Lord, 1st and 4th, with Ann Lord; Mr. G. Geggie, 2d, with Mary; Mr. S. Barlow, 3d, with the same; Mr. F. Law, 5th, with the same, and 6th, with Minnie. Heavy roses or scarlets: Mr. R. Lord, 1st and 2d, with Miss Horner; Mr. J. Chadwick, 3d, 5th, and 6th, with Seedlings; Mr. J. Whitham, 4th, with Royal Visit. Light roses or scarlets: Mr. R. Lord, 1st and 3d, with Miss Wood; 2d, with L'Elegant; Mr. R. Gorton, 4th,

with Ethel; Mr. S. Barlow, 5th, with Beauty of Plumstead; Mr. B. Simonite, 6th, with Seedling.

Selfs and Fancies.—Extra class: Twelve blooms, self colours only.—1st, Mr. R. Lord; 2d, Mr. S. Barlow.

Extra class: Twelve blooms, fancies—run bizarres or any other combination, excluding selfs.—1st, Mr. R. Lord; 2d, Mr S. Barlow.

Weston-super-Mare Horticultural: *August* 19.—This Society held its yearly show on the above date in the usual place, the Grove and Rectory Fields, which are well adapted for the purpose of a large gathering, as well as being near the town. In the principal classes the competition on this occasion was well sustained, more exhibitors than ordinary putting in their appearance. In the class for twelve stove and greenhouse plants there were five groups staged, which, being well grown, and the flowering portion full of bloom, made an effective display. The fruits of the Society's work are strikingly apparent in the improved condition of the plants that are now brought out by the local exhibitors, which contrast favourably with their early efforts. The new West of England exhibitor, Mr. Lock, gr. to B. W. Cleave, Esq., Crediton, near Exeter, was again out in full force, sweeping off most of the principal prizes; his plants were well grown, fresh, and unusually full of flower. Fine-foliage plants were also well shown, but not as frequently seen present in such numbers as to give a sombre appearance to the display. In the open class for twelve stove and greenhouse, including four fine-leaved plants—1st, Mr. Lock, with a very fine collection, the best of which were Erica æmula, with the flowers literally piled together, so that from their glutinous nature they were in a dense solid mass; E. obbata purpurea, Dipladenia amabilis, Ixora Fraseri, I. Williamsii, and Stephanotis floribunda, which collectively harmonised well with their accompanying fine-leaved associates; 2d, Mr. Cypher, Cheltenham, who likewise had a fine group, noticeable in which were Allamanda nobilis, Erica McNabiana, Statice Holfordi, and Stephanotis floribunda; 3d, Mr. J. F. Mould, having, in a well managed group, Ixora Prince of Orange, very well bloomed; Erica insignis, well flowered, and some 4½ feet through. When, as in this case, the colour of this fine kind is well brought out, it is one of the very finest of all Heaths. 4th, Mr. Bloodworth, with a collection, the best of which were Eucharis amazonica, Clerodendron Balfourianum, and Ixora Williamsii. In another group, shown in the same class by Mr. Hughes, gr. to H. Pethick, Esq., was a well grown and nicely flowered example of the old Plumbago capensis, the soft blue colour of which is so effective amongst other plants. The same group contained one of the best grown and most profusely flowered specimens we have seen of Bougainvillea glabra, which possessed the additional merit of not having been subjected to the overtraining that a good many plants now shown are spoilt with. With six stove and greenhouse plants Mr. Lock was 1st, showing in an excellent collection Dipladenia hybrida, a beautiful variety, with the brightest high-coloured shade in the flowers of all the kinds in cultivation. With it was Erica Fairreana, Ixora Prince of Orange, and I. Duffii, a remarkably large-flowered, distinct-looking species of comparatively recent introduction; 2d, Mr. Cypher, who staged a well managed set of plants; 3d, Mr. J. F. Mould, having amongst others Dipladenia Brearleyana, in good condition, and the brilliant red flowered Erica cerinthoides; in another group competing in this class, contributed by Mr. Brown, was a good specimen, profusely bloomed, of Physianthus albens, a white-flowering evergreen climber, well worth cultivating, but rarely seen. Fine-leaved plants.—First honours for six went to Mr. Lock, who had large examples in very good condition; 2d, Mr. Cypher; 3d, Mr. Rye, gr. to J. Derham, Esq. Ferns.—In the class for six, Mr. Lock took the lead with a handsome half dozen, in which was Microlepia hirta cristata, Davallia polyantha, D. Mooreana, and Gleichenia rupestris glaucescens, all in fine order; 2d, Mr. S. Brown. Six Adiantums.—These were well shown by several exhibitors, Mr. Lock here again taking 1st with large examples in fresh condition, the best of which were A. cardiochlæna, A. trapeziforme, A. concinnum latum, and A. Farleyense; 2d, Mr. Hughes, who also had pretty plants. Six hardy Ferns.—1st, Mr. S. Brown; 2d, Mr. Lock. Lycopodiums.—With these Mr. Lock took the lead, staging medium-sized fresh plants, sufficiently varied in appearance; 2d, Mr. W. J. Mould, gr. to E. E. Bryant, Esq. Fuchsias.—Here Mr. Brown was a long way ahead, with tall pyramids, very well flowered; 2d, Mr. Bowen. Single new plant.—1st, Mr. Cypher, with Croton Thomsoni; 2d, Mr. Lock. Petunias.—1st, Mr. Brown, who had double varieties nicely bloomed. Cockscombs were finely shown: 1st, Mr. Pain, gr. to W. Ash, Esq.; 2d, Mr. Lewis, gr. to J. E. Cole, Esq. Six Coleus.—1st, Mr. S. Brown. Six Liliums.—1st, Mr. S. Brown. Six Achimenes.—1st, Mr. Hughes. Zonal Pelargoniums.—1st, Mr. S. Brown; 2d, Mr. Bowen. Six tricolor Pelargoniums.—1st, Mr. S. Brown.

In the amateurs' division, with six stove and greenhouse plants Mr. Lock came in 1st again, with well bloomed examples, the best of which were Ixora Prince of Orange, and Erica tricolor Wilsoni; 2d, Mr. W. J. Mould, in whose group was a nicely flowered plant of Erica Eweriana. Fine-leaved plants.—With six Mr. Rye, gr. to J. Derham, Esq., took the lead, staging, amongst others, nice examples of Croton Weismanni, C. majesticus, and Areca Baueri; 2d, Mr. Lock, whose collection contained Anthurium Thibautianum and Croton Prince of Wales. Achimenes.—The plants of these shown in this division were much superior to those competing in the open class. 1st, Mr. Lane, gr. to F. Taylor, Esq., with six beautifully flowered plants; 2d, the Rev. Clifton Mogg. Six Ferns.—1st, Mr. Lock; 2d, Mr. W. J. Mould. Six Adiantums.—1st, Mr. Pain; 2d, Mr. Loveless, gr. to Sidney Hill, Esq. Six hardy Ferns.—1st, Mr. J. P. Capel; 2d, Mr. Pain. Zonal Pelargoniums were nicely grown and well flowered. With six Mr. S. J. Sayce was 1st; 2d, Mr. Lewis. Four double varieties.—1st, Mr. Lewis; 2d, Mr. Pain. Gloxinias.—1st, Mr. Lock; 2d, the Rev. Clifton Mogg. Single specimen plant.—1st, Mr. Lock, showing a medium-sized example of Ixora Williamsii, profusely flowered; 2d, Mr. Pain.

Cut Flowers.—Of these there was a large quantity, collectively in good condition. Roses were more numerous, and in better order than the advanced season and the extreme dryness of the weather would have led any one to expect. The winning stand of twenty-four varieties, three blooms of each, consisted of an even lot of flowers, with a fair admixture of Teas, all in nice order; these were from Mr. Mattock, Oxford; 2d, Messrs. Cooling, Bath, who also put up a nice lot; 3d, Mr. W. G. Grant. Twelve Tea varieties, single blooms.—1st, Mr. Mattock, with a good dozen; 2d, Messrs. Cooling. Twenty-four Dahlias.—1st, Mr. Hill, Ashton. Twelve varieties, single Dahlias, three blooms of each with buds and foliage.—1st, Mr. Walters, Bath; 2d, Messrs. Cooling. Twenty-four Gladiolus.—1st, Mr. Dobree, with a nice lot of spikes; 2d, Mr. S. Brown. Asters were beautifully shown. With twenty-four quilled varieties, 1st, Mr. Hopkins, gr. to Mrs. Kinglake, putting up a very good lot; 2d, Mr. Hooper, Bath. Twenty-four French varieties were also very well done, 1st, Mr. Walters; 2d, Mr. Hooper. Twelve Roses (amateurs).—1st, Mr. Carpenter, gr. to S. P. Budd, Esq.; 2d, Mr. W. G. Grant. Twelve Dahlias (amateurs).—1st, Mr. H. C. Meagel; 2d, Mr. Pearce, gr. to Mrs. Crowther. Twelve single Dahlias (amateurs).—1st, Mr. H. C. Mayell; 2d, Mr. Truckle, gr. to T. Carr, Esq. Twelve quilled Asters (amateurs).—1st, Mr. Hopkins; 2d, Mr. Catley, Bath. Twelve French Asters (amateurs).—1st, Mr. Catley; 2d, Mr. Burgess. Twenty-four bunches of cut flowers.—1st, Mr. Lock; 2d, Mr. Howe, Clifton. Twelve bunches of cut flowers (amateurs).—1st, Mr. Lock; 2d, Mr. Rye. Hand bouquet.—1st, Mr. Cypher; 2d, Mr. Hookings, Clifton. Hand bouquets (amateurs).—1st, Mr. Spry, gr. to Mrs. Prideaux; 2d, Mr. Hookings. Stand of fruit and flowers.—1st, Mr. E. T. Hall, with a nice arrangement. Stand of flowers.—1st, Mr. Hookings; 2d, Mr. Pain.

Fruit.—Of this there was a nice display, hardy kinds being more plentiful and better than could have been expected. With eight dishes, Mr. Rye was 1st, his collection included Muscat of Alexandria and Black Hamburgh Grapes, Royal George Peaches, Rivers' Orange Nectarines, a Melon, Cherries, Apples, and Pears; 2d, Mr. Iggulden, gr. to the Earl of Cork, Marston House, Frome, his best dishes being Black Hamburgh and Muscat of Alexandria Grapes, a Blenheim Orange Melon, and Brown Turkey Figs; 3d, Mr. Davey, gr. to J. Carver, Esq., Hereford. Three bunches of Black Hamburgh Grapes.—1st, Mr. Iggulden, with nicely finished examples; 2d, Mr. E. T. Hall. Three bunches of black Grapes, not Hamburghs.—1st, Mr. Daffurn, gr. to Mrs. Walker, with nicely finished Madresfield Court; 2d, Mr. Iggulden; 3d, Mr. E. T. Hall, both showing the same excellent sorts. Three bunches of Muscat of Alexandria.—1st, Mr. Cooper, with nicely-coloured, even examples; 2d, Mr. Goddard, gr. to R. H. Symes, Esq.; 3d, Mr. Shelton, gr. to W. K. Wait; Esq. Three bunches of white Grapes, not Muscats.—With these Mr. Smith, gr. to Mrs. Morris, was 1st, staging Foster's Seedling, good bunches, and well finished; 2d, Mr. Crossman. Peaches and Nectarines were beautifully shown. With a dish of the former, 1st, Mr. Holland, gr. to Mrs. Temperley, having Royal George, fair-sized, even fruit, beautifully coloured; 2d, Mr. Iggulden, with good examples of Barrington. Dish of Nectarines.—1st, Mr. Reed, gr. to F. J. C. Parsons, Esq., who had Pitmaston Orange in nice order; 2d, Mr. Trotman, gr. to H. O. Wills, Esq. Apricots.—1st, Mr. Marsh, gr. to J. Austin, Esq., with a good dish of Moorpark; 2d, Mr. Howe. Figs.—1st, Mr. T. T. Knyfton; 2d, Mr. W. Fear. Green-fleshed Melon.—1st, Mr. W. Pain; 2d, Mr. Bloodworth. Scarlet-fleshed Melon.—1st, Mr. Iggulden; 2d, Mr. George. *T. B.*

Basingstoke Horticultural: *August* 19.—The eighth annual exhibition of this Society was held in the grounds of Goldings (kindly lent by S. Field, Esq.) on Tuesday, the 19th inst. The show, taken altogether, was a capital one, and the attendance of visitors was good. The three large marquees—one for the exhibits of ladies, amateurs, and artisans, and the other two for those gentlemen's gardeners—being crowded between the hours of four and seven o'clock. The Society is fortunate in having so many donors of special prizes residing in the district, and the donors are to be congratulated, not only for the keen competition, but also upon the excellence of the individual exhibits put up in competition for their liberal awards. The Fuchsias were as fine as any we have seen this year, and did great credit to the grower, Mr. T. Russell. Stove plants, both foliage and flowering, and Ferns, were shown in good condition, as also were fruit and vegetables; the Potatos being plentiful, clean, and even. But in the matter of "putting up" collections of vegetables a little more taste should be shown on future occasions. Clean roots fringed with green Parsley, correctly named, and neatly arranged, always look better than those slovenly put up. The following are the awards of the judges:—Six distinct stove and greenhouse plants in flower.—Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, was 1st, showing a large balloon-shaped Clerodendron Balfourianum, Plumbago capensis, &c.; Mr. Russell, gr. to T. Pain, Esq., Audley's Wood, Basingstoke, being a good 2d, with, amongst others, a fresh well-flowered Allamanda Hendersoni, Eucharis amazonica, and Ixora Dixiana. For a like number of foliage plants Mr. Wills was 1st, with fresh, well coloured plants of Alocasia metallica and A. Lowii, Croton Queen Victoria, &c.; 2d, J. Dauncey, gr. to B. Stone, Esq., Buckfield Park, Sherfield. For the best single specimen stove or greenhouse plant Mr. N. Kneller, gr. to Wyndham T. Portal, Esq., Malshanger, Basingstoke, and Mr. T. Russell, were placed equal 1st, the former showing a fairly well flowered variety of Cattleya, and the latter a grandly flowered Fuchsia Charming, standing about 8 feet high and 5 feet through at the base; 2d, Mr. Wills, with Aphelexis macrantha purpurea. Mr. Wills was 1st for six Achimenes, and Mr. N. Kneller was 2d. For six exotic Ferns Mr. Wills was again 1st, his best plant being Davallia Mooreana; 2d, Mr. T. Weaver, gr. to W. W. B. Beach, Esq., M.P., Oakley Hall, Basingstoke, the competition being very close. Mr. N. Kneller was 1st for eight hardy Ferns; Mr. Tripp, gr. to S. Field, Esq., Goldings, Basingstoke, was 2d; Mr. Wills being awarded an extra prize in this class. In the class for six Fuchsias there was only one entry, consisting of Princess Victoria, Beauty of Wilts, Alexandria (lights), Captain Nero, Elegans, and Charming (darks), which were really grand specimens of good cultivation, being about 8 feet high, 5 feet through at the base, fresh and profusely flowered, and for which Mr. Russell was awarded the 1st prize and Highly Commended. There was also only one entry in the class for six Pelargoniums (zonals and doubles), and a 1st prize was awarded to Mr. R. Lye, Sydmonton Court, Newbury. Mr. Wills had the best six decorative plants, and Mr. B. Tripp the 2d best.

Cut Flowers.—Mr. Durbidge, gr. to Rev. C. Eddy, Bromely, Andover, had the best twelve Roses (distinct), and Mr. F. W. Flight, Twyford, Winchester, the 2d best. Mr. R. W. Munday, Basingstoke, was 1st for twelve Dahlias, and Mr. T. Russell 2d.

Fruit.—For a collection of six dishes of fruit (distinct), Pine excluded.—1st, Mr. Best, gr. to C. W. Caute, Esq., The Vyne, Basingstoke, with black and white Grapes, fairly good dishes of Peaches and Nectarines, Plums and Melons; Mr. Kneller, of Malshanger, being 2d, showing black and white Grapes, Apricots, Cherries, Apples, and Plums; and Mr. T. Osmond, gr. to Major R. P. Warren, Worthing House, Basingstoke, 3d. Mr. F. Kneller was 1st with Black Hamburgh Grapes, having three good bunches of that variety; 2d, Mr. Best, and Mr. N. Kneller 3d. For a like number of bunches of any black Grape other than Black Hamburgh there was only one entry, viz., Mr. Best, who secured 1st prize with good-sized and well finished bunches of Black Prince. In the corresponding class for white Grapes, Mr. F. Kneller was 1st, with Muscat of Alexandria; Mr. T. Russell 2d, and Mr. Best 3d. Mr. W. Thompson, gr. to Captain Boland, Down Grange, Basingstoke, had the best green-fleshed Melon, Mr. N. Kneller the 2d best, and Mr. Best the 3d best. And Mr. T. Weaver secured 1st place in the corresponding class with a good fruit of Blenheim Orange; Mr. N. Kneller 2d, and Mr. Thompson 3d. The last named exhibitor was 1st for six Peaches, with fine fruits of Noblesse; Mr. G. H. Richards, gr. to the Earl of Normanton, Somerley House, Ringwood, being a good 2d, with the same variety; and Mr. J. Dauncey a good 3d. In the corresponding class for Nectarines, Mr. Best was 1st, Mr. Richards 2d, and Mr. Dauncey 3d. Mr. Best was again to the front for three dishes of dessert Apples; Mr. N. Kneller 2d, and Mr. R. Lye 3d. And for a like number of culinary Apples, Mr. N. Kneller obtained 1st place, being followed closely by Mr. T. Weaver, and Mr. Ilott, gr. to Major Allfrey, Wokefield Park, Basingstoke, in that order. In the class for six dessert Pears the prizes were awarded to Messrs. N. Kneller, F. Kneller, and G. Best, in the order in which their names appear. Mr. Richards secured 1st place for three dishes of Plums, distinct; Mr. Dauncey 2d, and Mr. N. Kneller 3d. Mr. Dauncey had the best dish of Morello Cherries, and Mr. N. Kneller the 2d best. For the best dish of six Apricots the prizes went to Mr. Richards and Mr. N. Kneller, in that order.

Vegetables.—For a collection of twelve distinct kinds of vegetables Mr. N. Kneller was awarded the 1st prize, Mr. R. Lye the 2d, and Mr. Richards the 3d; and for twelve bulbs of spring-sown Onions Mr. Lye obtained 1st, Mr. N. Kneller 2d, and Mr. Thompson 3d. Mr. Richards was 1st for a brace of Cucumbers, Mr. Dauncey 2d, and Mr. Best 3d.

Special Prizes.—A number of special prizes were given by ladies and gentlemen residing in the neighbourhood of Basingstoke, to be competed for by gentlemen's gardeners. Foremost among these were those offered for a group of miscellaneous stove and greenhouse plants, to occupy a space of 10 feet by 8 feet, quality with effect to be the leading feature. 1st (£5 5s., given by Mrs. W. W. B. Beach), Mr. F. Kneller; 2d (£2 2s., given by H. Harris, Esq.), Mr. T. Weaver; 3d (£1 1s., given by Messrs. R. T. & J. Barrett), Mr. E. Wills.

In the class for twelve plants, in or out of bloom (open), Mr. Wills was 1st (£5 5s., given by the President, S. Portal, Esq.): these were Cycas revoluta, Latania borbonica, Statice profusa, and Bougainvillea glabra, &c.; 2d (£2 2s., given by A. Basset, Esq.), Mr. J. Dauncey. For six Coleus, distinct, 1st (£1 1s., given by Mr. W. Wadmore), Mr. G. Best, with pyramids 5 feet high, and well coloured; 2d (10s. 6d., given by Dr. Greenwood), Mr. N. Kneller; 3d (5s., given by Messrs. Paget & Son), Mr. R. Lye. For twenty-four varieties of cut Roses, 1st (£1, given by Wyndham S. Portal, Esq.), Mr. Darbridge, gr. to the Rev. C. Eddy, with a nice

fresh even lot of blooms, one of which—A. K. Williams—secured the special prize given by the rev. gentleman for the best single Rose bloom in the show; 2d (5s., given by Mr. G. Hooper), Mr. R. H. Munday; and in the class for six Roses, distinct, to be grown in Hampshire, 1st (10s., given by Rev. C. Eddy, who also gives the 2d prize, 5s.), Mr. F. W. Flight; 2d, Mr. Dauncey.

Messrs. John Laing & Co., Forest Hill, London, offered 15s., 10s., and 5s. for six distinct tuberous Begonias (to be named from their catalogue); there were only two entries—namely, Messrs. Best and Dauncey, who obtained the awards in that order. For eight distinct kinds of fruit.—1st (£2 2s., given by the Society), Mr. F. Kneller, whose best dishes were his Black Hamburghs, Peaches, and Nectarines—Mr. Weaver being a very good 2d (£1 1s., given by W. H. Bailey, Esq. Potatos were largely shown, and remarkably good. For twelve varieties, nine tubers of each, Mr. Ilott secured the 1st (£2 2s., given, as also the 2d, £1 1s., given by the Society), with a clean, even lot; Mr. Dauncey was 2d; and Mr. Best 3d (10s. 6d., given by Mr. E. J. Stephens).

In the classes open to gentlemen employing not more than one gardener and an assistant, for the best collection of twelve plants in pots.—1st, Mr. W. Thompson; 2d, Mr. Tripp. For the best six kinds of fruit there was only one entry, viz., Mr. Thompson, who was awarded a 1st prize for his collection. Mr. Tripp was 1st for a collection of eight distinct kinds of vegetables, Mr. Thompson 2d, and Mr. Durbidge 3d. For the best collection of twelve stove and greenhouse plants, prizes (£2 2s. and £1 1s.) given by the Mayor of Basingstoke (Captain May).—1st, Mr. Tripp, with a nice fresh lot of plants; 2d, Mr. Thompson, also with a nice lot. Mr. Thompson was 1st in the class for twelve bunches of cut flowers, distinct (1st prize, 21s., given by Dr. Greenwood); and Mr. Tripp 2d (10s., given by Messrs. Paget & Son).

AMATEURS.—For six stove and greenhouse plants Mr. Budd was 1st, Mr. H. Allen 2d, and Mr. W. Wadmore 3d; and for six Fuchsias Mrs. J. Portsmouth, Basingstoke, 1st; and Mr. H. Allen, of the same town, 2d. Mr. C. J. Jacob, Basingstoke, was 1st for a like number of Balsams, Mr. Wadmore 2d, and Mr. H. Owen 3d. The last-named exhibitor was 1st for six hardy Ferns, and Mr. J. Owen 2d.

FRUIT.—For a collection of fruit, six distinct kinds, Mr. J. B. Soper was 1st, Mr. W. Wadmore 2d. Mr. E. Glanville had the best Melon. Mr. H. Allen and Mr. W. Wadmore were respectively 1st and 2d for six Pears, and for a like number of dessert Apples the prizes were awarded in the following order: — Messrs. Soper, Poulter, and H. Dunn; and for a like number of culinary Apples the prizes went to Mr. F. Budd, Rev. J. Chadwick, and Mr. Soper. Mr. H. Allen and Mr. Wadmore were the only competitors in the class for twelve Plums, and they secured the 1st and 2d prizes in that order; as also did Messrs. Soper, Budd, and J. Owen for a dish of Cherries.

Vegetables were shown largely, and were for the most part well grown.

SPECIAL PRIZES.—Mr. H. Allen offered £2 2s. and £1 1s., and Mr. H. Loe 10s. 6d., for a group of miscellaneous plants, to occupy a space of 6 feet by 5 feet, quality with effect to be the leading feature.—1st, Mr. H. Allen, with a creditably arranged group of nicely grown plants; 2d, Mr. F. Budd. For twelve varieties of hardy herbaceous cut flowers, 1st (10s. 6d., given by Mr. W. P. Stark), Mr. H. Allen; 2d (5s., by the same donor), Mr. A. Tapp. For a collection of twelve varieties of annuals Mr. H. Allen was awarded 1st position (10s. 6d., given by Mr. A. Sapp); and Mr. Wadmore 2d.

Table decorations, bouquets, &c. (open only to ladies).—For a stand or vase of flowers and fruit for table decoration, 1st, Miss Flight, of Winchester; 2d, Miss B. Powell. Miss Owen and Miss Poulter had the two best hand bouquets, and Mrs. Wadmore and the Misses Owen had the two best vase bouquets. For the best arranged pair of vases containing wild flowers the prizes were awarded to Miss B. Flight, Mrs. Wadmore, and Miss Owen, in that order, for very tastefully arranged vases, and which were greatly admired.

In the twenty classes devoted to the produce of artisans and labourers of Basingstoke and neighbourhood, the exhibits for the most part were remarkably good—Messrs. Sutton & Sons, of Reading; Messrs. Lodwidge & Co., Basingstoke; and Mr. H. M. Julian, of the same town, as inducements to compete, offering special prizes in this division. *H. W. Ward.*

Trowbridge Horticultural: *August* 20.—This was the thirty-fifth exhibition of this flourishing Society, certainly one of the most popular in the west of England. It was held, as usual, in the large field adjoining the railway station, an adjoining field being also brought into requisition. It was undoubtedly one of the best exhibitions the Society has yet held; the entries were very large, and the exhibits throughout uncommonly good. It was a rare representation of Wiltshire produce, for with few exceptions the leading features were all produced within a few miles of Trowbridge. For once the weather was wholly fine—it is a number of years since that rain did not fall to some extent on the show day. As usual the town was prettily decorated with plants, flowers, &c. There were several triumphal arches, and flags without number. Large numbers of people came into the town, and the exhibition proved a decided financial success.

STOVE AND GREENHOUSE PLANTS.—These were, as usual, a leading feature, and there were four entries, the 1st prize going to Mr. J. F. Mould, nurseryman, Pewsey, who had good plants of Erica insignis, E. Austiniana, a very fine specimen of the white-flowered Ixora Colei, Gloriosa superba, Allamanda Hendersoni, A. nobilis, Dipladenia Brearleyana, Clerodendron Balfourianum, and Ixora Prince of Orange; 2d, Mr. J. Matthews, gr. to W. R. Brown, Esq., Trowbridge, whose best specimens were Bougainvillea glabra, Ixora aurantiaca, Erica Exquisite, E. Marnockiana, and Allamanda nobilis; 3d, Mr. G. Tucker, gr. to W. P. Clark, Esq., Trowbridge, who had, among others, good examples of Plumbago coccinea, Allamanda nobilis, and Stephanotis floribunda. In the amateurs' class for six plants Mr. J. Haden, gr. to H. Pocock, Esq., Trowbridge, was 2d, with Ixora Williamsii, Allamanda nobilis, A. Hendersoni, Stephanotis floribunda, Rondeletia speciosa Brilliantissima, and Bougainvillea glabra, being beaten by Mr. G. Tucker, who had a very nice fresh lot, consisting of Ixora Williamsii, I. coccinea superba, a seedling Dipladenia in the way of amabilis, Stephanotis floribunda, Allamanda Hendersoni, and Bougainvillea glabra. Mr. Tucker was also 1st, with three plants, staging capital examples of Dipladenia Brearleyana, Statice profusa, and Allamanda Hendersoni; 2d, Mr. J. Matthews, with Allamanda Hendersoni, Ixora coccinea, and Rondeletia speciosa major. In the class for a specimen plant displaying superior cultivation the best was Cattleya Loddigesi, with two flower-stems, bearing five excellent flowers each, shown by W. Syme, gr. to G. Gouldsworth, Esq.; Mr. Mould coming 2d with Cycas revoluta.

ORNAMENTAL FOLIAGED PLANTS.—In the class for nine plants Mr. J. F. Mould was 1st, with fine examples of Croton Andreanus, C. Warreni, C. Sunset, and C. Queen Victoria, all well coloured; Cycas revoluta, Gleichenia rupestris, G. Mendeli, Dracæna Goldieana, and D. regina; 2d, Mr. W. C. Drummond, nurseryman, Bath, who had good examples of Latania borbonica, Cycas revoluta, Thrinax elegans, Croton Queen Victoria, C. Weismanni, and Dracæna Lindeni, in capital form.

FERNS.—These are always a leading feature at this show, and being shown in collections of fifteen plants make a fine display. On this occasion Mr. Geo. Tucker was 1st, with a very good lot of fair-sized specimens, their characters well developed, among them being Gymnogramma peruviana cristata, G. sulphurea, G. decomposita, and G. Laucheana, Neottopteris nidus-avis, Adiantum Farleyense, A. cuneatum, A. gracillimum, A. concinnum latum, Davallia canariensis, D. Mooreana, and others of equally fine character; 2d, Mr. G. Cole, gr. to A. P. Stancomb, Esq., Trowbridge, with a very good lot, the following of fine character:—Dicksonia squarrosa, Gymnogramma Laucheana, G. peruviana argyrophylla and G. chrysophylla, Cheilanthes elegans, Davallia Mooreana, Adiantum Farleyense, several other handsome Maidenhairs, &c. Three other collections competed.

COLEUS.—These were a fine feature, and especially the well developed bushy plants shown by Mr. J. Matthews, to which the 1st prize was awarded, the sorts being Lady Dacre, Cannell's Lovely, Mrs. J. Simpson, Mrs. Sherriff, Duchess of Teck, and Sanatorim, the leaves large and finely marked. Some other good plants were shown, mainly of pyramidal shape, the sorts generally similar to those just named.

FUCHSIAS.—As is usual, these were shown in remarkably fine condition; some said they were the best specimens ever seen at Trowbridge. They were of large size and finely grown and bloomed. Mr. J. Lye, gr. to the Hon. Mrs. Hay, Clyffe Hall, Market Lavington, was 1st with six varieties, having Final, Doels' Favourite, and the Hon. Mrs. Hay, dark; and Arabella, Mrs. Bright, and Beauty of the West, light varieties. 2d, Mr. G. Tucker, with specimens only just inferior to the foregoing, having Load-me-Well, Charmer, Bountiful, and Doels' Favourite, dark; Arabella and Emily Doels, light. Mr. H. Pocock, gr. to J. P. Haden, Esq., Trowbridge, was equal 2d, with Bountiful, Charming, and Doels' Favourite, dark; and Arabella, Maggie, and Beauty of Wilts, light. Another collection was shown by Mr. J. Matthews, and this was very much better than the best plants we are accustomed to see at provincial shows. Mr. Lye also had the best four plants, staging Henry Brook and Duke of Albany, dark; Star of Wilts and Emily Lye, light. 2d, Mr. H. Pocock, with Elegance and Doels' Favourite, dark; Rose of Castille and Mabel, light. 3d, Mr. G. Tucker. In the nurserymen's classes Fuchsias were poor, the 1st prize for six specimens being withheld, the 2d going to Mr. W. C. Drummond.

MISCELLANEOUS PLANTS.—These included Caladiums, Heaths, of which there were a few nice plants, Achimenes, Gloxinias, Begonias, and new plants. The best new plant was Dieffenbachia Jenmanni, the bright green leaves having transverse bars of white: this was shown by Mr. H. Clack, gr. to C. E. Colston, Esq., Roundway Park, Devizes; Mr. J. F. Mould being 2d, with Croton Thompsoni. A very good lot of tuberous-rooted Begonias came from one exhibitor, and an extra prize as well as a Certificate of Merit was awarded to Mr. J. L. Graham, Trowbridge, for an excellent lot of seedling Begonias, double and single. Petunias were very finely shown by Mr. J. Lye, all charming varieties of his own raising, capitally grown and flowered; there were also good Verbenas in pots, and some finely grown and bloomed zonal Pelargoniums, together with Cockscombs. The competition in all these classes was very brisk, and one effect of it has been to ensure that all things are shown in the best condition by all sections of exhibitors.

CUT FLOWERS.—These, as usual, were admirably represented, Messrs. Keynes, Williams & Co., nurserymen, Salisbury, had a first-rate stand of twenty-four Dahlias, including William Spofforth, Mrs. Cannell, William Rawlings, Buttercup, Constancy, Statesman, Mr. P. Wyndham, Burgundy, Herbert Turner, Prince of Denmark, Mr. Stancomb, John Wyatt, Prince Bismarck, Julia Wyatt, Imperial, Mrs. Dodds, Mandarin, Mr. Gladstone, a lovely pale flower; Cardinal, Mr. Foreman, Lord Chelmsford, and Seedlings; 2d, Mr. Thomas Hobbs, Lower Easton, Bristol, whose best blooms were Sir Garnet Wolseley, Pioneer, Senator, Mr. Gladstone, Constancy, John Standish, Vice-President, Prince of Denmark, Joseph Green, Mary Nesbit, and Henry Walton. In the class for twelve varieties, Mr. George Humphries, Kingston Santley, Chippenham, was 1st, with fairly good flowers, his best blooms being Mr. G. Harris, John Ashby, William Rawlings, Charles Lidgard, Goldfinder, and Georgiana; 2d, Mr. Geo. Horsell, Bathwick. With twelve fancy varieties, Messrs. Keynes & Co. were again 1st, staging very fine blooms of Gaiety, Rebecca, James O'Brien, Rev. J. B. M. Camm, John Forbes, Miss Annie Melsome, a beautiful white tipped variety on a yellow ground; Chorister, Frederick Smith, John Saunders, Professor Fawcett, Parrot, and Mons. Chauvière. 2d, Mr. George Humphries, whose best flowers were Mrs. Saunders, Egyptian Prince, John Lamont, Polly Sandell, Fanny Sturt, and Florence Stark. The best seedling Dahlia was Fancy General Gordon, clear yellow flaked with pale red: very bright and effective, good centre, petal, and outline. In addition to the money prize awarded in this class, a First-class Certificate of Merit was also given to this flower. The best twelve single Dahlias also came from Messrs. Keynes & Co., and comprised very good blooms of Mauve Queen, Negress, Althea, Evening Star, Defiance, Hero, John Cowan, Paragon, and Bertha. 2d, Mr. A. A. Walters, florist, Bath, with White Queen, Defiance, Beacon, Distinction, Terra Cotta, Imogene, and Mauve Queen, as his best flowers. In addition Messrs. Keynes & Co. set up stands of the scarlet and white Cactus Dahlias, and also bunches of charming bouquet Dahlias, not for competition.

ROSES.—These were wonderfully well shown for the season and time of the year. With twenty-four varieties, single blooms, Messrs. G. Cooling & Son, nurserymen, Bath, were 1st with Clémence Joigneaux, Felicien David, Red Gauntlet, Comtesse de Sereneyi, Marie Baumann, Captain Christy, Marquis de Castellane, Duke of Connaught, La France, Comtesse d'Oxford, Gloire de Dijon, Charles Darwin, Earl of Pembroke, and Dupuy Jamain as the leading blooms. 2d, Mr. J. Mattock, nurseryman, New Headington, his leading flowers being Mad. Pitord, Baroness Rothschild, Star of Waltham, Xavier Olibo, Devienne Lamy, Prince Arthur, Maréchal Niel, Pierre Notting, Duke of Albany, Anna Olivier, and Baron Gonella. Mr. Mattock had the best twelve trebles, staging good examples of Madame Eugenie Verdier, Xavier Olibo, Louis van Houtte, Marie van Houtte, Marie Baumann, Innocente Pirola, Catherine Mermet, and A. K. Williams. 2d, Messrs. G. Cooling & Son, with Marie Verdier, La France, A. K. Williams, Duke of Teck, Général Jacqueminot, Madame Eugenie Verdier, and Comtesse d'Oxford. 3d, Messrs. Cross & Steer, nurserymen, Salisbury. In the amateur class for twelve Roses the competition was so close that Mr. J. Davis, Wilton, and Mr. G. Campbell, gr. to W. T. P. Budd, Esq., were placed equal 1st; Mr. Thomas Hobbs being 2d. Mr. Budd had the best six blooms.

MISCELLANEOUS FLOWERS.—Cut spikes of Gladioli were remarkably well shown, Mr. J. Wheeler, nurseryman, Warminster, being 1st with a fine lot, such as Omar Pacha, Dr. Lindley, James Watt, Nobilis, Mrs. Randall, Mrs. Matthews, &c.; Mr. W. T. Daley, nurseryman, Yeovil, was 2d, also with a good lot. Asters were wonderfully well shown for the season, Mr. A. A. Walters, of Bath, taking the lead with some grand varieties, both quilled and flat-petalled. Hollyhocks were very good indeed, and so were Verbenas.

TABLE DECORATIONS.—In the fruit tent were the table pieces composed of fruit and flowers, and all staged were very good, the best arrangement coming from Mr. H. S. James, gr. to A. Laverton, Esq.; Mr. M. Hockings being 2d. Mr. James also had the best centre-piece without fruit, Mr. Hockings being again 2d. Mr. Wakeman had the best bouquet—a very good one indeed; Mr. W. C. Drummond being 2d. There were also memorial wreaths, button-holes, and collections of wild flowers collected in the neighbourhood of Trowbridge—all very good indeed.

FRUIT.—The fruit tent was less attractive than usual on this occasion, owing to the absence of Mr. Thomas King, of Devizes Castle Gardens, who did not show on this occasion, in consequence of probable changes in the proprietorship of this charming demesne, and who has for years past taken high honours with fruit. On this occasion the best collection came from Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, who was far away 1st, with excellent examples of Black Hamburgh and Foster's Seedling Grapes, Bellegarde and Royal George Peaches, Hunt's Tawny and Downton Nectarines, Jargonelle Pears, Morello Cherries, Conqueror of Europe and Best of All Melons—a well balanced lot; 2d, Mr. W. G. Fisher, Batheaston, who had fine Black Hamburgh Grapes, Peaches, Pears, Pines, Apricots, Nectarines, Plums, &c.; and Mr. James Hall 3d. Mr. H. S. James had the best two bunches of black Grapes, staging well finished Black Hamburghs; Mr. Wakeman being 2d. Mr. Wort had the best two bunches of white Grapes, staging Buckland Sweetwater; Mr. H. Applegate coming 2d with the same variety. Melons, Peaches, Nectarines, Apricots, Pears, Apples, Cherries, and other fruits were all well shown, culinary Apples being a leading feature.

Vegetables.—It is impossible in a limited space to detail the excellent exhibition of Vegetables seen on this occasion, probably one of the very finest of the year. Vegetables are shown by all classes, including market gardeners, and they were as fine in quality throughout as they were numerous. In the class for a collection of nine varieties of vegetables, there were something like a dozen collections, and the judges must have had considerable difficulty in selecting the best out of so much that was good. Generally the collections were shown in raised round baskets, the contents neatly set up, and among them were very fine Cauliflowers, Tomatos, Artichokes, Onions, Marrows, Peas, Broad Beans, Carrots, Turnips, Potatos, &c. Everything was shown clean and in the best condition, and all the exhibitors at fully understand the art of staging to the best Trowbridge, gardeners and cottagers alike, appear to advantage. One of the most interesting sights was the class for a basket of various kinds of Potatos shown by cottagers. Generally they were shown in huge flat boxes, the various sorts placed in lines on their ends and kept carefully covered up before being exposed to view for the judges. In one box I counted something like thirty-four distinct varieties, averaging from six to ten tubers each, and generally of large size and excellent quality. The leading varieties in this collection were Queen of the Valley, White Elephant, Reading Hero, Covent Garden Perfection, Prizetaker, Purple Ashleaf, Woodstock Kidney, Vicar of Laleham, Hundredfold Fluke, Reading Russet, Beauty of Hebron, Wonderful Red Kidney, Red Emperor, Schoolmaster, Scotch Blue, Porter's Excelsior, Matchless, Manhattan, First and Best, and Scammel's Glory. There were several classes for single dishes of Potatos, with large quantities in each. Among the best samples were Vicar of Laleham, Radstock Beauty, Blanchard, International Kidney, Lye's Favourite, Beauty of Hebron, Red Emperor, Reading Russet, Woodstock Kidney, Ashleaf, Grampian, and Pride of America. Carrots were a study, because so handsome and rich in colour; the Intermediate and Long Surrey types were especially fine. Parsnips were long, symmetrical, and very handsome. One could hardly have imagined such Peas could have been produced so late in the season, as fresh-looking and covered with the delicate bloom one sees early in July. The varieties were Telephone, Sutton's Reading Hero, Stratagem, Veitch's Perfection, Duke of Albany, Culverwell's Giant Marrow, Ne Plus Ultra, British Queen and Dr. Maclean. Dwarf French Beans, Cabbages, Turnips, and Onions were as perfect as one could well desire to see them: the highest quality prevailed throughout.

Miscellaneous Exhibits.—Messrs. Keynes & Co. staged a number of bunches of pompon Dahlias, among them such fine sorts as Darkness, Dora, Peasant Girl, Fanny Weimar, Royalty, Golden Green, Coquette, Northern Light, White Aster, The Khedive, Sappho, Guiding Star, and Isabel, also some very fine blooms of crimson and white Cactus Dahlias. Messrs. Cross & Steer, nurserymen, Salisbury, had boxes of cut flowers of Clove Carnations, The Governor, Lady Ashhurton, and Gloire de Nancy—all excellent white varieties of great value for cutting from. *A Correspondent.*

Hastings and St. Leonards Floricultural and Horticultural: *August* 20.—The annual exhibition of this flourishing Society was held on the above date, and the committee of management have every reason to congratulate themselves on the successful issue to which they have brought this year's exhibition. This Society has usually held the show in the Warrior Square Gardens, which are undoubtedly well situated for visitors, but far too limited for an extensive display combined with a comfortable promenade. On the suggestion of one or two members of the committee, application was made for and consent readily obtained to hold this year's show in the Alexandra Park Gardens. These grounds are, perhaps, rather removed from the busy and fashionable parts of the town, but are more picturesque and in every way suited for a flower show. In the formation of the Alexandra Park Gardens, every advantage had been made of most of the natural surroundings; the grounds extend for a considerable distance up a pretty valley with well clothed hills on either side, affording excellent space in the lower ground for ornamental sheets of water. Doubts were expressed by some as to whether the distance would deter many visitors from attending, but as the afternoon wore on these were all dispelled, and the gate money, we have heard, has exceeded any previous year's takings. The show on this occasion was exceedingly strong in stove and greenhouse flowering plants, not merely from one or two of the principal growers, but from many rising exhibitors in the district. We never remember to have seen a better or more fresh lot of flowering plants staged at any show, even in the early summer. Larger specimens would be found at the metropolitan and other extensive exhibitions, but a better cultivated collection could hardly be brought together than was to be seen in competition for the prizes offered in the four classes provided by the schedule on this occasion. For eight plants in flower Mr. Gilbert was 1st, with an unusually good lot, carrying an abundance of bloom, Erica æmula, Statice imbricata var. Gilbertii, Dipladenia amabilis, Allamanda nobilis, Bougainvillea glabra, and Rondeletia speciosa major, all being fine specimens. 2d, Mr. Portnall, gr. to Sir A. Lamb, Bart., Beauport, near Hastings, who staged a lot that run the other close, consisting of Dipladenia splendens, very fresh; Lapageria rosea, with fine blooms; Clerodendron fallax, having ten spikes; whilst in the 3d prize collection was an exceedingly well bloomed Kalosanthes coccinea, with fine heads of bloom. In the class for six plants there were two excellent collections, the 1st prize being taken by Mr. Dennis, gr. to C. Woodroofe, Esq., Silverhill, amongst his plants being Vallota purpurea in unusually fine health, with nearly fifty spikes of extra strength, and individual blooms very superior, and a grandly coloured and well grown plant of Kalosanthes coccinea superba, with a freely flowered Bougainvillea glabra. 2d, Mr. J. Green, The Gardens, Oakwood, Ore, in whose collection was another well done Kalosanthes and Clerodendron Balfourianum, very fresh. Two more classes limited to gardeners and amateurs also brought forth plenty of competition, Messrs. Dennis and Portnall both showing well in these—Dipladenia boliviensis, in the latter grower's collection of six, being a capital plant; Mr. Dennis again having strong plants of Bougainvillea glabra and a Kalosanthes, both in good condition. For eight fine-foliage plants.—1st, Mr. Gilbert, with Brahea filamentosa, very healthy and fresh; Kentia Forsteriana being good plants, Dicksonia antarctica having a clean head of fronds; Phormium tenax variegatum, and a pretty plant of Croton Johannis were his best plants, and making a good collection. 2d, Mr. Portnall—in this class staging a lot of robust growing plants that promised to do much future service; 3d, Mr. Dennis, his lot having a remarkably fine plant of Areca sapida in most robust health. Mr. Gilbert was again 1st with eight Ferns, staging fine plants of Adiantum Farleyense, A. tenerum, and Balantium culcita. In a smaller lot of plants that took the 3d prize was an unusually well-done plant of Adiantum concinnum, which, as seen in this case, was most attractive. Collections of six plants, foliage and flowering, were also shown; the chief exhibitors, whose names have been already given, took the lead here also. Specimen plants, both for foliage and for flower.—1st, Mr. Gilbert; in the former case with a splendid specimen of Cycas revoluta, and in the latter class with his variety of Statice, well flowered. A good plant of Cattleya crispa, having seven spikes, but not a first-class variety, took the 2d prize in the same class. Fuchsias were shown in excellent condition, the plants being in nearly every case well furnished with flowers and foliage down to the pot. From Mr. Portnall, who took 1st place, came good examples of Mrs. Lye and Alba-coccinea. Zonal Pelargoniums formed a most attractive feature in the large marquee, and likewise brought out good competition. For double kinds.—1st, Mr. Gilbert, with dwarf sturdy plants, well flowered; Candidissima plena, a fine white; Madame Thibaut, Madame Leon Dalroy and E. V. Raspail being the best. For single sorts Mr. Portnall was 1st, with very fioriferous examples; Emperor, a dark scarlet, with immense trusses, was very fine in this collection. In the class for six Ericas three collections were shown, the plants being generally of medium size, but in excellent health and well flowered—1st, Mr. Gilbert. The arrangement of the plants in the large tent is worthy of notice, the Fuchsias being the only plants of any size that were placed on stages. On one side of these were arranged the fruit shown in the open classes, and on the other some small plants, thus forming a narrow line down the centre. Around the sides were grouped the other plants in classes already noticed—a fine effect was thus obtained from each end of the tent. In another marquee were the classes containing plants in competition for prizes offered in the division open to amateurs and gardeners only; these were in nearly every case well filled up with good examples of cultivation.

The Fruit classes, especially in the first division, were well filled, and contained many meritorious examples. For a collection of eight dishes, 1st, Mr. Goldsmith, of Hollanden, his strong points being black and white Grapes, Williams' Bon Chrétien Pears, and Brown Turkey Figs. In the class for black Grapes Mr. Allen, gr. to Sir Thomas Brassey, K.C.B., Normanhurst Court, took the 1st prize, with three splendid bunches, fine in berry and well finished; 2d, Mr. Goldsmith, with good examples. In white Grapes Muscat of Alexandria was shown of extra good colour, the hot weather having evidently suited the finishing up of this kind. Mr. Johnstone, gr. to the Marchioness of Camden, and Mr. Allen took the prizes in the order named. In any black class, Black Prince, from Mr. Paine, gr. to R. W. Weeks, Esq., Tunbridge Wells, was an easy 1st. For Nectarines three of Mr. Rivers' raising took the prizes. Humboldt, from Mr. Portnall, was 1st—these were fine fruit; Lord Napier, from Mr. Goldsmith, was 2d; and a dish of Victoria won the 3d prize. In Peaches a fine dish of Noblesse took the 1st prize, these being shown by Mr. Hilton, of Silverhill. Lord Suffield Apples, from Mr. Gilmour, The Gardens, Seacox Heath, Hawkhurst, were fine samples of their kind. The Irish Peach in the class for dessert Apples, from Messrs. Woollard, Cooksbridge, near Lewes, took the 1st prize. Tomatos were very finely shown by Mr. Gilmour and Mr. Barham, twelve from the latter grower weighing collectively 6 lb. 14 oz., Stamfordian being shown in each instance.

Collections of Vegetables were exhibited in remarkably good condition, as also were Potatos; for the former Mr. Foster, of Ore, was 1st, with a good assortment; in the latter Porter's Excelsior was finely shown by Mr. Gilmour, and Lapstone by Mr. Sutton, gr. to W. B. Young, Esq., were an excellent dish of clean tubers. The committee wisely encourage exhibits from cottagers, and the produce shown bore evidence of superior cultivation in nearly every case.

Table decorations were provided for in two classes, Mrs. Gilmour taking 1st in that open to ladies only; whilst Mrs. Bishop, of Croydon, took a corresponding position in the open class with three stands of very light and well finished arrangement, Mr. Gilbert following closely with a selection of choice flowers, securing the 1st position as well with a pretty bouquet. The same exhibitor was also 1st with a box of twenty-four varieties of cut flowers, in which Heaths and other flowers of superior quality were strongly represented. For cut Roses Mr. Slaughter, of Steyning, took three 1st prizes, showing Tea-scented kinds in very good condition. Other flowers were not strongly shown in any of the cut flower division; with this exception all departments were remarkably well represented. *J. H.*

Shrewsbury Horticultural: *August* 20 *and* 21.—This important Society has this year added another to its long list of successful exhibitions. As those who have had an opportunity of seeing the shows held here are aware, the committee from the first provided an unusual amount of attractions external to the extensive display of plants, flowers, fruit, and vegetables, which go to make up the horticultural exhibition, and which, it is scarcely needful to say, could never alone have attracted the vast crowds of visitors that for two days throng the grounds, and thus provide the promoters with the means of yearly adding to the attractions, which, we understand, are to be still further increased in the horticultural department another year—a wise proceeding, the result of which will doubtless be an accession of still more distant exhibitors. In extent the exhibition was similar to what it has been now for several years, the liberal prizes of £25, £20, and £15, offered for twenty plants, brought out three exhibitors, whilst the other leading classes for stove and greenhouse plants, Palms, Ferns, Heaths, &c., were well represented. Zonal Pelargoniums, shown in fairly natural form, not twisted and tied down in the unsightly way that has done much to render unpopular no inconsiderable number of the best plants in cultivation, are here always forthcoming in unusual condition. One other matter deserving of mention is the way in which the staging arrangements are here carried out, not alone in disposing of the plants in a manner that gives the best effect, but the competing collections are so defined that the judges have no difficulty in making out each.

In the open class for twenty stove and greenhouse plants, half of which must be in bloom, Mr. Cypher, Cheltenham, was well in front with a fine collection, noticeable in which were Erica Austiniana, nearly 5 feet through; Allamanda nobilis, the best deep yellow of all the Allamandas; Rhododendron Duchess of Edinburgh, bearing thirty large, highly coloured trusses of bloom—this is one of the most telling of greenhouse plants for decorative use, as well as for exhibiting, that can be grown for this time of the year; with these was a finely bloomed Stephanotis, Clerodendron Balfourianum, large and full of flower—associated with a good lot of fine-foliaged plants they make up a telling group; 2d, Mr. Tudgey, Waltham Cross, who had some good flowering specimens, amongst them being Erica Eweriana superba, a fine bush 5 feet in diameter, nicely bloomed; E. Aitoniana, Anthurium Scherzerianum, with large spathes; along with Crotons and other fine-leaved plants. Mr. Roberts, gr. to E. C. Glover, Esq., Leek, was 3d, with a creditable group, the best of which were Dipladenia splendens, D. amabilis, and a large bush of the pure white Tabernæmontana coronaria flore-pleno; with which were some well-grown Palms. Nine stove and greenhouse plants, flowering and fine-foliaged.—1st, Messrs. Pritchard & Sons, nurserymen, Shrewsbury, who, in a nice collection, had a medium-sized Ixora coccinea, bearing fine heads of flower; Allamanda Schottii and Lapageria alba, nicely bloomed; with Kentia Fosteriana and other ornamental-leaved kinds; 2d, Mr. Thurtle, gr. to J. L. Burton, Esq., Longner Hall, who had a pretty group, in which were well flowered plants of Bougainvillea glabra and Plumbago capensis; 3d, Mr. J. Farrant, gr. to Mrs. Juson, Monklands. Cape Heaths.—These were shown in nice condition. 1st, Mr. Cypher, for six, medium-sized specimens of Erica æmula, E. MacNabiana, E. Irbyana, E. Shannoni, E. ampullacea vittata, and E. Fairreana; 2d, Mr. Tudgey, who amongst others had here another large specimen of E. Eweriana, well flowered; E. insignis, and E. Hartnelli; 3d, Mr. Roberts, whose best plants were E. jasminiflora alba, and E. Marnockiana. For nine Ferns.—1st, Mr. Cypher, who had a nice group in fresh condition; 2d, Mr. Thurtle, who also had a well grown collection. Six Ferns: these also were nicely shown. Mr. Farrant was 1st, his best plants being Cyathea medullaris, Dicksonia antarctica, and Adiantum cardiochlæna; 2d, Mr. Lambert, gr. to Colonel Wingfield; 3d, Messrs. Pritchard & Sons. Six hardy Ferns.—1st, Mr. Harding, with a nice half-dozen; 2d, Mr. Burr. In this class several collections were staged, consisting wholly or in part of newly made up potsful of plants, which, as a matter of course, did not receive any award. Dracænas.—With six Mr. Lambert took the lead, staging large plants, the best of which were D. Baptisti, D. Guilfoylei, and D. Hendersoni; 2d, Mr. Roberts, with smaller but nicely grown examples; 3d, Mr. Shephard, gr. to the Misses Bannerman. Caladiums were large and well furnished with healthy foliage. The 1st prize for six was awarded to Messrs. Pritchard & Sons; 2d, Mr. Farrant; 3d, Messrs. Pritchard & Sons, all having well grown plants. Begonias.—1st, Mr. Shephard; 2d, Mr. Oakley, gr. to the Rev. J. H. E. Charter. Coleus.—Of six Mr. Shephard was the only exhibitor, taking 1st, with tall pyramidal plants. Palms.—For the best six, 1st, Mr. Cypher, with a very fine lot, containing Pritchardia pacifica, Kentia Belmoreana, and K. Canterburyana; 2d, Mr. Tudgey, also having a very good half-dozen, medium in size; 3d, Mr. Roberts. Fuchsias were indifferently represented, both as to numbers and quality, Mr. H. Owen being the only exhibitor of six varieties, and taking the 1st prize. Zonal Pelargoniums, six double varieties.—With these Messrs. Oldroyd & Son, Shrewsbury, were the winners of both 1st and 2d prizes, their best specimens being candidissima, Asa Gray, Sanspareil, Madame Thibaut, and Wonderful; 3d, Messrs. Pritchard. Six single zonals.—

Here again Messrs. Oldroyd & Son were 1st and 2d, with large, healthy plants, profusely flowered; 3d, Messrs. Pritchard. Three double Pelargoniums (amateurs).—1st, Mrs. L. Burd; 2d, Mr. H. Owen. Four Petunias (amateurs).—1st, Mrs. L. Burd; 2d, Mr. G. J. Fox. Three Begonias (amateurs).—1st, Mr. H. Owen; 2d and 3d, Mrs. L. Burd. Three Fuchsias (amateurs).—1st, Mr. H. Owen; 2d, Mrs. L. Burd. Four Ferns (amateurs).—Here Mr. J. Brown, Bridgnorth, took the 1st, Mr. H. Owen the 2d prize. Dinner-table plants were very well shown, light, airy, and not too large.

Groups of plants arranged for effect were a conspicuous feature in one of the principal tents, Messrs. Pritchard & Sons winning 1st and 2d prizes with nicely arranged groups, in which few flowering plants were used, the requisite colour being obtained by coloured leaved plants.

CUT FLOWERS.—Roses were in fair condition. For twenty-four single trusses, 1st, Messrs. Perkins & Sons, Coventry; 2d, Messrs. F. & A. Dickson, Chester. Eighteen Roses, single trusses.—1st, Mr. Barrington, Ludlow, with a nice stand; 2d, Mr. S. Garner. Thirty-six Dahlias.—1st, Mr. W. Shaw, with nice flowers, moderate in size; 2d, Mr. E. Wright. Twenty-four Dahlias.—1st, Mr. W. Shaw; 2d, Mr. E. Wright. Twelve single Dahlias, three blooms of each.—1st, Messrs. Jones & Sons; 2d, Mr. A. Myers. Thirty-six spikes of Gladiolus.—1st, Mr. W. Shaw. Eighteen Gladiolus.—1st and 2d, Mr. Lambert. Bride's bouquet.—1st, Mr. Cypher, who had a beautiful example; 2d, Messrs. Jones & Sons. Ball bouquet.—1st, Messrs. Perkins & Sons. Stand of cut flowers.—1st, Messrs. Jones & Sons, with a light, elegant arrangement. Bride's bouquet (amateurs).—1st, Mr. J. Townsend. Ball bouquet (amateurs).—1st, Mr. J. Townsend, Jun.

FRUIT.—For a collection of nine dishes, Mr. Purser, gr. to J. Watson, Esq., Berwick House, Shrewsbury, was 1st, his best being Muscat of Alexandria and Black Hamburgh Grapes, Peaches, Nectarines, and Apricots; 2d, Mr. Lambert, whose collection contained Black Hamburgh and Muscat of Alexandria Grapes, and a fine dish of Barrington Peaches; 3d, Mr. Kennedy, gr. to Sir C. R. Boughton. Six bunches of black Grapes, three varieties.—With these Mr. Wallis, gr. to the Rev. W. Sneyd, Keele Hall, Staffordshire, took the lead, having Black Hamburgh, Black Alicante, and Muscat Hamburgh, all in nice condition; 2d, Mr. Milner, gr. to the Rev. J. D. Corbet, who also had Black Hamburgh, Black Alicante, and Muscat Hamburgh. Three bunches of black Grapes.—1st, Mr. Lambert, who had nice bunches of Black Hamburgh, well finished; 2d, Mr. Beattie, with Gros Guillaume; 3d, Mr. Purser, with Black Hamburgh. Four bunches of white Grapes, in two varieties.—1st, Mr. Boddey, gr. to Viscount Boyne, Burwarton Hall, with nicely furnished Muscat of Alexandria and Royal Vineyard; 2d, Mr. Wallis, who staged Muscat of Alexandria and Duke of Buccleuch, the last with large berries, and free from the least speck; 3d, Mr. Milner. Three bunches of white Grapes.—1st, Mr. Purser, with Muscat of Alexandria, well coloured; 2d, Mr. Boddey, who also had the same variety. Two bunches of black Grapes (amateurs).—1st, Mr. R. B. Phillips, with Black Hamburgh; 2d, Mr. Lea. Two bunches of white Grapes (amateurs).—1st, Mr. Lea, who had good bunches of Foster's Seedling; 2d, Mr. G. Burr, with Muscat of Alexandria. Dish of Peaches.—With these Mr. E. Wright took the lead, having excellent Barringtons; 2d, Mr. Wallis, with Galande, beautifully coloured; 3d, Mr. Lambert. Dish of Nectarines.—1st, Mr. Daws, gr. to F. St. B. Slade, Esq.; 2d, Mr. Wallis; 3d, Mr. Kennedy. Dish of Apricots.—1st, Mr. Daws; 2d, Mr. Milner. Twelve Plums, light coloured.—1st, General Jenkins; 2d, Mr. Hardie, gr. to W. St. J. Hazeldine, Esq. Twelve Plums, dark coloured.—1st, Mr. Farrant; 2d, Mr. Purser. Green-fleshed Melon.—1st, Mr. T. M. How; 2d, Mr. Purser. Scarlet-fleshed Melon.—1st, Mr. Pearson, gr. to Lord Berwick, Attingham Hall; 2d, Mr. H. Owen. Dish of Cherries.—1st, Miss E. Coles; 2d, Mr. Edwards, gr. to Sir F. C. Smyth, Acton Burnell.

The Devon and Exeter Horticultural: *Aug.* 22.—The summer exhibition of this Society was held in Exeter, on the public grounds of Northenhay, kindly lent for the occasion by the Mayor and Town Council. The weather was all that could be desired throughout the day. The exhibits were pronounced superior as regarded plants, fruit, and vegetables, to anything seen at a previous exhibition of this Society. Many new competitors came forward, and from a distance, which says much for the returning popularity of the Exeter meetings. The glorious sunshine, of which we have had an abundance this summer, had clothed the fruit with so much colour that the Peaches, Nectarines, Apples, &c., that adorned the tables of fruit, presented a most handsome display rarely witnessed. The silver cups, two of them value £5 5*s.* each, were the means of attracting many competitors in the fruit classes; the Grapes shown being of quite unusual excellence. Mr. Locke, gr. to B. W. Cleave, Esq., Newcombes, Crediton, carried away 1st prize in most all the classes for stove and greenhouse plants—his specimen plants, without exception, being remarkably healthy and skilfully grown. We were glad to notice a few rising plant growers, who on this occasion staged excellent specimens, which says much for the future of the Society's exhibitions being well represented. Messrs. Lucombe, Pince & Co., as is their custom, again favoured the Society with the loan of a grand collection of plants occupying a stage nearly 100 feet in length. Beautiful Palms, of such kinds as Kentia Fosteriana, Latania borbonica, Seaforthia elegans, Cocos Weddelliana, Cycas revoluta, &c., formed the background, their graceful foliage overhanging specimens of Allamandas in variety, Stephanotis, Dipladenia Brearleyana, exceptionally well flowered; Ixora Colei being especially well flowered. Orchids in variety, and Ferns, both stove and greenhouse varieties, interspersed. Boxes of pompon and single Dahlias, Phloxes, and Niphetos Roses were also staged in fine condition by the firm. Messrs. Veitch & Son contributed a choice collection of plants and cut flowers. Some boxes of cut flowers of double Begonias were magnificent examples of the perfection this class of plants are now made to produce; their boxes of Dahlias and Roses were very fine. The photographs of the rockwork which the firm have executed in different parts of the country occupied a prominent position in this collection. Messrs. Curtis, Sandford & Co. exhibited, not for competition, boxes of Niphetos and Maréchal Niel in splendid form; also boxes of Teas in variety, the best being Marie van Houtte, Prince Prosper d'Aremberg, Red Safrano, Madame Lambard, and C. Mermet. Mr. Walters exhibited nearly twenty boxes of Roses in variety, also of great merit—almost as fine blooms as in the early part of the season; the Maréchal Niel box was really grand.

Open classes for cut flowers.—Twenty-four Roses, distinct.—Messrs. Curtis, Sandford & Co., of Torquay, were 1st, with a capital lot of blooms, considering the season being so much against them; 2d, Captain Christy, Sidmouth. Forty-eight Dahlias, double, distinct.—1st, Mr. J. Nation, Taunton; 2d, Curtis, Sandford & Co. Forty-eight Gladioli, distinct.—1st, Mr. S. Dobree, with a splendid lot of fresh blooms. Twenty-four bunches cut blooms, distinct.—1st, Mr. Rowland, gr. to W. Brock, Esq., Parker's Well House, Exeter; 2d, Mr. G. Locke.

For ten stove and greenhouse plants in flower Mr. Locke staged a grand lot, a magnificent and profusely flowered Dipladenia Brearleyana, with Ericas æmula, good; tricolor Wilsoni and Fairreana; Ixora Duffii and Williamsi—the last-named grandly flowered; Allamanda Hendersoni, Dipladenia amabilis, Stephanotis, and Clerodendron Balfourianum. This collection was placed 1st, and richly deserved the distinction. Mr. Teed, gr. to Mrs. Ensor, The Bungalow, Topsham Road, Exeter, was placed 2d, with a very creditable lot of plants, conspicuous being his beautifully flowered Ixora Williamsi. For six stove and greenhouse plants in flower Mr. Rowland took 1st. Mr. Locke also took 1st for nine stove and greenhouse foliage plants. Included in this collection were Alocasia Thibautiana and intermedia, Cycas revoluta, Crotons Williamsi, splendidly coloured, and Weismanni, Areca lutescens, Latania borbonica, Encephalartos villosus ampliatus—unfortunately this season throwing up three spikes of flowers instead of an additional whorl of leaves, otherwise this plant would have been a grand feature in this collection. Mr. Locke was likewise awarded the 1st prize for the following subjects:—For nine Lycopods, for twelve British Ferns, for specimen stove plant in bloom, for specimen greenhouse plant in bloom, Erica obbata purpurea, 5 feet in diameter; for stove or greenhouse foliage plant, this being a fine specimen Gleichenia speluncæ 6 feet in diameter; for specimen Lycopodium, and for specimen stove Fern, with Davallia Mooreana, very fine. In Mr. Locke's collection of stove and greenhouse Ferns a Nephrolepis davallioides furcans, 8 feet in diameter, was splendid, as also a specimen each of Gleichenia rupestris glaucescens, and Davallia Mooreana, nearly the same proportions; a fine Cyathea dealbata, and Adiantum trapeziforme. Mr. Locke also took the £5 cup given by the exhibitors, for a micellaneous group of plants arranged for effect, on a stage 20 by 5 feet: the centre plant was a beautiful specimen of Cocos Weddelliana; other Palms, of smaller sizes, of Phœnix, Cocos, Geonomas, were used very effectively among the flowering plants, as also the fine-leaved Eulalia japonica variegata. Vallotas, Eucharis, and Gloxinias were among the principal flowering plants used; these were raised to allow of a groundwork of Ferns, Adiantum cuneatum principally. The whole made up a very skilful and effective display. Mr. Rowland was placed 2d, noticeable in his collection was a Cocos Weddelliana, a fine specimen, of distinct habit from any other ever seen by the writer, of most graceful and drooping habit: his collection comprised similar plants to the first. Mr. Rowland was also awarded 1st for six stove and greenhouse foliage plants, with fine specimens of Crotons Andreanus and Disraeli, and Cycas revoluta. Mr. Teed took 1st prize for a miscellaneous group of plants arranged on a stage 10 feet by 5 feet. His display included plants of Cocos and Geonomas, small Croton angustifolius, Amaryllis, Ixoras, Vallotas, Eucharis, Ericas, and Bougainvillea, with pots of Dactylis glomerata variegata and Isolepis, arranged around the front.

In the classes for cut flowers, confined to amateurs, Mr. Nation and Mrs. Hart were placed 1st and 2d respectively in the classes for twenty-four Dahlias, double, twelve fancy Dahlias, and twelve single varieties distinct. For twelve Juarezi or Cactus Dahlia, Mr. J. H. Morris was 1st. For twelve Roses, distinct, Captain Christy was 1st, Mr. Selway 2d.

FRUIT CLASSES.—Six bunches of Grapes, distinct varieties, 5 guinea Silver Cup, presented by the ex-Mayor (S. Jones, Esq.).—1st, Mr. Pike, gr. to the Rev. H. Clark, Exmouth; he had splendid examples of Black Hamburgh, Black Alicante, Muscat Hamburgh, Muscat of Alexandria, Duchess of Buccleuch, and Madresfield Court. Mr. Seeward, gr. to Sir H. Davie, Creedy Park, Crediton, 2d, with good fruit; Mr. Geeson, gr. to Lord Haldon, Highly Commended. For collection of fruit, ten dishes.—Mr. Iggulden, gr. to Earl of Cork, 1st, with splendid Madresfield Court and Black Hamburgh Grapes, Barrington Peaches, Jargonelle Pears, Moor Park Apricots, Brown Turkey Figs, Pine-apple Nectarines, Early Orleans Plums, and Blenheim Orange Melon. Mr. Bull, gr. to Sir Redvers Buller, 2d; a very fine Smooth Cayenne Pine told well in his collection. Mr. Powell, gr. to the Earl of Devon, 3d. One Pine-apple.—1st, Mr. Bull. Three bunches of Black Hamburgh Grapes.—1st, Mr. Teed, very fine bunches of good colour; 2d, Mr. Street, gr. to Col. Walrond (the President of the Society). Three bunches of Muscat of Alexandria.—1st, Mr. Barnes, gr. to T. C. Daniels, Stoodleigh Court, Tiverton, with very fine fruit; 2d, Mr. Geeson. Three bunches any other sort, black.—1st, Mr. Benmore, with Lady Downe's variety, in good condition. Three bunches any other sort, white.—1st, Mr. Benmore, with Buckland Sweetwater; 2d, Mr. James, gr. to Sir John Walrond, with Foster's Seedling. Nine Peaches, one sort.—1st, Mr. Underdown, gr. to Sir John Kennaway, with Veitch's Dymond; 2d, Mr. Sedgely, gr. to Lord Coleridge; equal 2d, Mr. James. Nine Nectarines.—1st, Mr. Powell, Downton variety; 2d, Mr. Leach, gr. to John Drew, Esq., Kenton. Melon, white or green flesh.—1st, Mr. Southey, gr. to Lieut.-Colonel Saville, Dawlish; 2d, Mr. James; 3d, Mr. T. Turner. Scarlet-fleshed Melon.—1st, Mr. Bull; 2d, Rev. L. T. Potter; 3d, Mr. Street. Nine Apricots,—1st, Mr. Locke; 2d, T. Rowe; 3d, Mr. Mairs, gr. to Sir J. Shelley. Nine Figs.—1st, Mr. C. Gidley. Nine Apples, dessert.—1st, Mr. Teed; 2d, Mr. G. Benmore; 3d, Mr. J. H. Pinder, all Irish Peach in the prize collections. Nine Apples, kitchen.—1st, Mr. Underdown; 2d, Mr. T. Rowe; equal 3d, Captain Greatwood and Mr. E. A. Sanders, Lord Suffield variety being that invariably staged, and in large numbers. Twelve Plums, light coloured.—1st, Rev. F. Yarde; 2d, Mr. G. Benmore. Twelve Plums, dark coloured.—1st, Mr. Lang, gr. to Lord Poltimore; 2d, Mr. Seeward. 1 lb. of Cherries.—1st, Mr. James; 2d, Mr. Powell. 1 lb. of Red Currants.—1st, Mr. Powell, with La Versaillaise; 2d, Mr. Solman. 1 lb. of White Currants.—1st, Mr. Powell; 2d, Rev. L. F. Potter. 1 lb of Gooseberries.—1st, Mr. James; 2d, Mr. Solman. 1 lb of Raspberries.—1st, Rev. L. F. Potter.

VEGETABLES.—The collection of twelve kinds of vegetables for which the prize of £3 was offered by Lucombe, Pince & Co., drew forth very strong competition. Mr. Leach secured 1st prize, his collection comprising Duke of Edinburgh Cucumbers, International Kidney Potato, very fine Autumn Giant Cauliflower, Veitch's new Intermediate Carrot (a decided acquisition among Carrots), Long White Marrows, Turnips, Tomatos. Scarlet Runners, very fine Giant Madeira Onions, Telephone Peas, some very excellent Sulham Prize Celery. Equal 2d, Mr. E. Sparkes and Mr. A. Barnett; 3d, Col. Troyte. Collection of six kinds of vegetables.—1st, Mr. Barnes; 2d, Mr. W. Gibbings; 3d, Mr. Sedgely. Collection of Salad.—1st, Col. Troyte; 2d, Mr. James.

Table decorations of cut flowers confined to ladies.—1st, Miss Hariman; 2d, Mrs. Cove; 3d, Miss Sims. Wildflower decorations.—1st, Miss Osmond; 2d, Mrs. A. Maxwell; 3d, Miss C. M. K. Maxwell. *D. C. P.*

Reading Horticultural: *Aug.* 21.—This, though called the autumn, is in reality the summer show of the Society, and on this occasion the permanent show grounds within the Abbey ruins were crowded with exhibits of plants, fruit, and flowers, while a supplementary tent was necessary to accommodate the large number of vegetables shown in competition for the handsome special prizes offered by Messrs. Sutton & Sons, Mr. C. Fidler, and Messrs. Webb & Sons. It was one of the best exhibitions held for many years, and the entries were so numerous that considerable difficulty was experienced in finding space for the many subjects. As usual, the Forbury Gardens were open to visitors, and they are now in great beauty, under the superintendence of Mr. W. Phippen, who also arranges the exhibits in the Abbey ruins.

STOVE AND GREENHOUSE PLANTS.—In the class for nine varieties, Mr. J. F. Mould, of Pewsey, was 1st, with the collection shown at Trowbridge on the previous day; 2d, Mr. Hale, gr. to C. H. May, Esq., Devizes, who had good examples of Allamanda Hendersoni, A. nobilis, Dipladenia amabilis, D. Brearleyana, Statice purpurea, Bougainvillea glabra, and Ixora Dixiana; 3d, Mr. Wills, gr. to Mrs. Pearce, Southampton. In the class for four plants, Mr. W. Lees, gr. to Mrs. Marsland, White Knights, Reading, was well ahead with fine examples of Bougainvillea glabra, Ixora Williamsii, Cassia corymbosa, and Rondeletia speciosa; 2d, Mr. Mortimer, gr. to Major Storer, Purley Park. The best example of a specimen stove or greenhouse plant was a fine example of Lilium speciosum roseum, carrying many spikes of flower. This came from Mr. Bridge, gr. to J. F. Hall, Esq. The best specimen new or rare plant was a fine example of Croton Eyrei, a spiral form of C. angustifolius, shown by Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury; Mr. Mould coming next with Croton Thompsoni. Other flowering plants comprised Lilies, L. tigrinum splendens, and the double variety, L. auratum, and L. speciosum, all very well grown. Cockscombs were very fine, and Balsams also, indeed the latter are always very good at Reading. Achimenes were in good condition, the best six plants coming from Mr. Mortimer, who had Frau Brunnow, Ambrose Verschaffelt, longiflora major, violacea, coccinea, and Margaretta; Mr. Wills was 2d.

ORNAMENTAL-FOLIAGED PLANTS.—In the class for six plants there was an excellent competition, and Mr. Wills, gr. to Mrs. Pearce, Bassett, Southampton, was placed 1st, with admirably grown examples of Cycas revoluta, Alocasia metallica, A. Lowi, Latania borbonica, Croton Queen Victoria, and Dasylirion acro-

trichum ; 2d, Mr. Mortimer, gr. to Major Storer, Purley Park, with a very good Croton Weismanni, Alocasia Thibautiana, A. macrorhiza variegata, Pandanus Veitchii, and one other. Two equal 3d prizes were awarded to Messrs. Mould and Hale.

Palms.—Mr. Wills also had the best three Palms, staging capital examples of Kentia Fosteriana, Areca lutescens, and Verschaffeltia splendida ; 2d, Mr. Elliott, gr. to J. Hibbert, Esq., Maidenhead who had Latania borbonica and Cocos Weddelliana, very good.

Ferns.—In the class for six specimens Mr. Mortimer was 1st, with a good lot, consisting of Alsophila australis, Dicksonia antarctica, Adiantum cardiochlæna, A. cultratum, Davallia Mooreana, and D. bullata ; 2d, Mr. Wills, whose leading plants were Dicksonia antarctica, Microlepia hirta cristata, and Davallia Mooreana ; 3d, Mr. Hale. In the class for four Ferns Mr. W. Lees was 1st, with excellent examples of Adiantum gracillimum, A. Farleyense, Gymnogramma pulchella, and Asplenium bulbiferum ; 2d, Mr. Durman, gr. to J. W. Workman, Esq., with smaller but nice clean specimens.

Fuchsias.—These were shown much better than we have seen them at Reading for some time past. Mr. G. Hale, gr. to C. H. May, Esq., The Elms, Devizes, was 1st, with an excellent lot of plants, but damaged by reason of the long journey ; the varieties being Miss Lye, charming, Doels' Favourite, and Vainqueur de Puebla. 2d, Mr. Bright, gr. to P. Karslake, Esq., with Mrs. Bright, The Hon. Mrs. Hay, Mrs. T. King, and Mrs. King. Two equal 3d prizes were awarded.

Groups Arranged for Effect.—These are always a prominent feature at Reading, and on this occasion as many as eight were staged. Mr. W. Phippen, Oxford Road Nursery, was a good 1st, with a group showing excellent taste both in the selection and arrangement of the plants. Mr. W. Lees and Mr. Wills were equal 2d ; Mr. Woolford, gr. to A. Palmer, Esq., Reading, and Mr. Sumner, gr. to J. H. Millard, Esq., Reading, being equal 3d. Three extra prizes were also awarded, so effective a features did these groups make.

Some very good specimens of Coleus were staged both by Mr. Mortimer and Mr. Sumner, well-grown and nice bright-looking plants. Mr. Mortimer was 1st and Mr. Sumner 2d with zonal Pelargoniums, the 1st prize lot showing excellent management ; Messrs. Wills and Ashby were to the fore with variegated-leaved varieties. Mr. Sumner was the only exhibitor of tuberous-rooted Begonias, a very creditable lot, of good quality. Mr. Wills had the 1st prize for a good lot of Selaginellas though they were not up to the mark of the extra fine specimens seen at the Reading shows a few years ago. Mr. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, had the best six table plants—a well-balanced and effective collection, followed very close by Mr. Phippen.

Cut Flowers.—Dahlias.—In the class for eighteen blooms Mr. J. Tranter, an amateur cultivator, of Upper Assenden, Henley-on-Thames, was in excellent form, being 1st, with capital blooms of Mrs. Gladstone (new), a perfect light Dahlia, of great delicacy and beauty—awarded a First-class Certificate of Merit ; Prince of Denmark, Ovid, Rev. J. B. M. Camm (self), James Vick, Revival, William Rawlings, Burgundy, Modesty, J. N. Keynes, Joseph Green, Sunbeam, &c. 2d, Messrs. J. Cheal & Son, Crawley, Sussex, whose best flowers were George Rawlings, Constancy, Alexander Cramond, John Wyatt, Christopher Ridley, and Sunbeam. Mr. Tranter also had the best twelve fancy varieties, the leading blooms being Grand Sultan, John Lamont, Queen Mab, Summertide, Mrs. N. Hall, and Flora Wyatt ; 2d, Messrs. J. Cheal & Son. The last-named had the best twelve bunches of single Dahlias, staging a remarkably good lot, consisting of Edith, White Queen, Negress, Juno, Formosa, a rich orange-scarlet seedling—awarded a First-class Certificate of Merit ; Paragon, Acquisition, Pantaloon, Lucy Ireland, Rosebud, &c. 2d, Mr. Godfrey, gr. to A. C. Rothery, Esq., Bagshot, with a good lot of flowers, but unnamed.

Roses.—The best eighteen varieties came from Messrs. J. Cheal & Sons, who had nice bright blooms of Emile Hausberg, François Michelon, Alfred Colomb, Abel Carrière, Beauty of Waltham, Madame Victor Verdier, Duke of Connaught, Reynolds Hole, Maréchal Niel, and Sénateur Vaisse, &c. 2d, Mr. Gardener, gr. to Miss Watson Taylor, Headington, Oxford, who had nice flowers of Madame Eugénie Rivier, Etienne Levet, La France, A. K. Williams, Charles Lefebvre, Duchess of Bedford, Boule d'Or, and Marie van Houtte. Mr. Gurden also had the best twelve varieties, consisting of A. K. Williams. Dupuy Jamain, Innocente Pirola, Marie van Houtte, La France, Baroness Rothschild, and Marie Finger, &c. ; J. S. Strange, Esq., Aldermaston, 2d ; and R. C. Mount, Esq., Ealing, 3d.

Miscellaneous Flowers.—Mr. Phippen had the best nine herbaceous Phloxes, closely followed by Mr. Gurden. Mr. Wills had the best dozen blooms of French Asters : Mr. Phippen taking the 2d place. Mr. Elliot had the best twelve German quilled Asters ; Mr. Munday, nurseryman, Basingstoke, taking 2d prize. Cockade Asters were somewhat poor. Mr. E. Jones, nurseryman, Henley-on-Thames, was 1st with good spikes of Gladioli, Mr. Phippen being 2d. Some excellent double Zinnias were shown by Mr. Munday, Mr. Elliott being a good 2d. Mr. Phippen's eighteen bunches of flowers were very good indeed, mainly hardy specimens, but fine bunches admirably set up ; Mr. Clark, Moor Park, Farnham, being 2d with a bridal bouquet, also with button-hole bouquets. Mr. Phippen was awarded 1st prizes for excellent exhibits.

Table Decorations.—These are always a charming feature at Reading, and three most elegant pieces are shown for relatively two prizes. On this occasion Miss Phillips, Abbots Walk, Reading, was 1st ; Miss Phippen, 2d, and Miss Hathaway, Calcot, 3d. The three vases of wildflowers were charmingly done, Miss N. Cole, Crown Street, Reading, being 1st ; Miss Howes, Reading, 2d ; and three other prizes were also awarded to ladies. The best basket of sweet-scented flowers came from Miss Phippen, Mrs. Wells, Reading, being 2d.

Mr. T. S. Ware, of Tottenham, sent, not for competition, stands of single and double Dahlias. Messrs. James Veitch and Son, Chelsea, several boxes of beautiful Roses, and Messrs. J. Cheal & Sons, cut blooms of Dahlias and hardy flowers.

Fruit.—The exhibition of fruit at Reading is always looked forward to with considerable interest by gardeners and others about the district, and on this occasion it was very attractive and good in all respects. There was an excellent competition in the class for eight dishes, Mr. Goodman, gr. to C. Hammersley, Esq., Bourne End, being placed 1st with excellent Alicante and good Foster's Seedling Grapes, but a little overripe ; Dagmar Peaches, Spencer Nectarines, both excellent in colour and size ; Pears, Plums, Melons, and Figs. 2d, Mr. Wells, gr. to E. Ravenshill, Esq., Winkfield, with fair Black Hamburgh and white Muscat Grapes, a good Melon, Apricots, Peaches, Plums, and Morello Cherries ; equal 3d, Mr. Howe, gr. to Sir R. Sutton, and Mr. Cakebread, Rayner's Penn, the former having fair Black Hamburgh and Muscat Grapes, very good Pine, Nectarines, Melons, Cherries, &c. In the class for six dishes, Mr. Ashby, gr. to W. Fanning, Esq., who for years past has maintained an excellent reputation as a fruit grower, was 1st with very good Black Hamburgh and Muscat Grapes, Stirling Castle Peaches, Pine-apple Nectarines, Melon, and Figs—a very good lot ; 2d, Mr. J. Turton, gr. to John Hargreaves, Esq., Maiden Erleigh, with unfinished white Muscat and fair Madresfield Court Grapes, Early Louise Peaches, Elruge Nectarines, Melon, and Pears ; 3d, Mr. Booker. There was a capital display of Black Hamburgh Grapes shown in three bunches, and here Mr. Ashby maintained his old superiority, setting up very large bunches, the berries good, but not quite perfect in their colouring ; 2d, Mr. Osborn, gr. to the Rev. H. G. Palmer, Sonning, with smaller bunches, a little better coloured ; 3d, Mr. Howe, who had well finished bunches, a little small in the berry. With three bunches of black Grapes, any other kind, Mr. Ashby was 1st, with very good Madresfield Court ; Mr. Lockie, gr. to Lord O. Fitzgerald, Oakley Court, Windsor, 2d, with well coloured Alnwick Seedling ; and Mr. Wells 3d, with Cooper's Black, the bunches nicely coloured. Mr. Ross, gr. to C. Eyre, Esq., Wilford Park, had the best three bunches of white Muscats, staging very good examples of Bowood ; 2d, Mr. Ashby, with Muscat of Alexandria ; 3d, Mr. Cakebread, Rayner's Penn, with the same, but a little unripe. In the class for any other white Grape a somewhat weak exhibition appeared. Mr. Lockie was placed 1st, with Buckland Sweetwater, wanting in finish ; Mr. Wells being 2d, with smaller bunches of the same a little better coloured.

Peaches were largely and finely shown. Mr. Mortimer was 1st, with good Royal George ; Mr. Ashby being 2d, with only just inferior specimens of the same variety ; Mr. Osborn coming 3d, with good Noblesse. Mr. Goodman had the best six Nectarines, staging excellent Milton ; Mr. Osborn coming 2d, with Pitmaston Orange ; and Mr. Ashby 3d, with Victoria. The best dish of Nectarines came from Mr. Read, gr. to F. Wilder, Esq., Purley Hall ; Mr. Wills being 2d ; both with fine Moor Park Melons. Figs, Plums, dessert and culinary Apples, &c., were all well shown for the season.

Messrs. Carter & Co., Holborn, London, offered special prizes for the best brace of Model Cucumber ; Mr. Lockie being 1st, and Mr. Mortimer 2d, with excellent fruit. The same firm offered prizes for the best brace of Blenheim Orange Melon, Mr. Lockie and Mr. Mortimer taking the same positions in this class also.

Vegetables.—These were a fine feature ; they were numerously shown and the quality exceptionally good, the handsome special prizes offered by Messrs. Sutton & Sons, Messrs. Webb & Sons, and Mr. C. Fidler, bringing in each case a spirited competition. Messrs. Sutton & Sons' prizes were for nine distinct varieties of Potatos, nine tubers of each, and there were eleven collections. Mr. Ilott, gr. to Major Allfrey, Wokefield Park, Ascot, was 1st, with finely finished examples of Vicar of Laleham, International, Prizetaker, Woodstock Kidney, Reading Russet, Life Guard, a handsome kidney, blotched red and white ; First and Best, Fifties, Annie, and Adirondack. 2d, Mr. Ross, with a fine lot ; 3d, Mr. Elliott. Mr. C. Fidler, Potato merchant, Reading, also offered prizes for nine dishes of Potatos, and here Mr. Ross was 1st, with an excellent lot, consisting of Mr. Bresee, First and Best, M.P., a seedling in the way of Climax ; Fillbasket, Prizetaker, Vicar of Laleham, Reading Russet, Fenn's Perfection, and Princess of Wales. 2d, Mr. Elliott ; 3d, Mr. Ilott. Eight collections competed. Messrs. Webb & Son's special prizes brought ten collections of six dishes of vegetables, Mr. N. Kneller, gr. to M. Portal, Esq., Basingstoke, being 1st, with Giant Rocca Onion, International Kidney Potato, Cauliflowers, Carrots, Ne Plus Ultra Peas, and Beans ; 2d, Mr. Howe, with a very good lot also ; 3d, Mr. Lockie.

Tomatos, Potatos, Cauliflowers, &c., were all very finely shown, the highest quality being characteristic of the exhibits generally.

Obituary.

Henry Bohn.—The death, in his 89th year, of Mr. Henry Bohn is announced. He will be longest remembered as a publisher, to whose insight and energy students of almost all departments of literature and science owe a deep debt of gratitude. He was the means of placing within their reach scores and hundreds of volumes, to which otherwise they could have had no ready access, if access at all. Mr. Bohn was a Fellow of the Royal Horticultural Society in its palmy days, and at one time took great and active interest in its proceedings, and he was to the last a valued supporter of the Gardeners' Royal Benevolent Institution. Warm-hearted and impulsive, his feelings were generous and sympathetic. A man of taste and wide knowledge his appreciation was keen and singularly varied. As a horticulturist his garden at Twickenham was chiefly remarkable for the large collections of hardy deciduous shrubs and Conifers got together to a large extent in consequence of his connection with the Royal Horticultural Society and his friendship with the late Mr. Gordon, to the second edition of whose *Pinetum* Mr. Bohn contributed a valuable appendix of popular names, and a series of references to coloured plates.

—— Charles Rylance.—We regret to announce the death of Mr. Charles Rylance, in his seventy-third year, which occurred on the 20th inst. at his residence, Bold Lane Nursery, Ormskirk, Lancashire. By industrious habits he, early in life, saved enough to purchase a small piece of land, which enabled him to carry on the business he had so much at heart—that of a nurseryman. He began by growing Cucumbers in frames covered with oiled paper (instead of glass), all of which he made himself. After a little time he saved enough to buy a small greenhouse, then he commenced growing plants, and exhibiting them at the local shows, especially show and fancy Pelargoniums. He was also a great lover of florists' flowers, especially the Dahlia, for which he has obtained hundreds of prizes. We understand that at the time of his death he had no less than 4000 prize cards, including 2250 1st prizes, as well as a Silver Cup for a collection of flowers in 1870, a Bronze Medal for a collection of cut flowers obtained in 1874, and later on a Gold Medal for British Ferns in 1879 at Manchester, not to mention other awards. Mr. Rylance attended the Liverpool markets for over half a century, and was the first to introduce the "round bunch," or bouquet of flowers, to that city. He was a devoted naturalist from his boyhood, and by shooting, stuffing, and casing specimens of the feathered tribe found in the neighbourhood he raised means to help him on in gardening. He was a self-made man throughout, and never served an apprenticeship to any business, yet he could turn his hand to anything. When he became fully established at Lydiate he soon found the place too small for his increasing business, so he bought the present nursery—then a field. There he carried on business on a larger scale, increasing year by year, and it was always his aim to add some little building every year—either outhouse or greenhouse—all of which he planned himself, and taught his own men to do the greater part of the work. To the last he remained a most entertaining companion, delighting to dwell on his early triumphs and referring with pride to the hundreds of prizes he had obtained at distant and local shows, and to the numerous cases of stuffed birds and insects that adorned his sitting-rooms, which of themselves formed quite a little museum. He was a shrewd and honest man of business, and was hence held in high respect by his professional brethren. Mr. Rylance was never married, but he had several nephews and nieces, who lived with him, and some of whom, we understand, may perhaps keep on the business.

The Weather.

London : *Atmospheric Pressure.*—During the week ending August 23, the reading of the barometer at the level of the sea decreased from 30.09 inches at the beginning of the week to 29 96 inches by 3 P.M. on the 17th ; decreased to 29 89 inches by 3 P.M. on the 19th, increased to 30 28 inches by 9 A.M. on the 21st, decreased to 30.08 inches by 3 P.M. on the 23d, and was 30.14 inches by the end of the week.

The mean reading of the barometer for the week was 30.06 inches, being 0.04 inch higher than last week, and 0.08 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 84°.5, on August 17 ; the highest on the 19th was 71°. The mean of the seven high day temperatures was 78°.1.

The lowest temperature was 51°.5, on the 20th ; on the 18th the lowest temperature was 57°. The mean of the seven low night temperatures was 54°.9.

The greatest range of temperature in one day was 28°.5, on the 17th ; the smallest was 16°.5, on

the 19th. The mean of the seven daily ranges was 23°.2.

The mean temperatures were—on the 17th, 69°.5, on the 18th, 67°.2; on the 19th, 61°.7; on the 20th 62°; on the 21st, 62°.7; on the 22d, 66°.1; and on the 23d, 67°.4; and these were all above their averages by 8°.3, 6°.2, 0°.8, 1°.2, 2°, 5°.4, and 6°.7 respectively.

The mean temperature of the week was 65°.2, being 2°.9 lower than last week, and 4°.4 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 149°, on the 23d. The mean of the seven daily readings was 133°.3.

The lowest reading of a minimum thermometer with its bulb placed on grass was 41°.5, on the 20th. The mean of the seven readings was 44°.

Rain.—0.07 inch fell on the 19th.

ENGLAND: *Temperature.*—During the week ending August 23 the highest temperatures were 84°.5, at Blackheath, 82° at Truro and Liverpool; the highest at Brighton and Preston 75°, at Bradford 76°.4. The general mean was 79°.5.

The lowest temperatures were 44° at Truro, 44°.1 at Nottingham, 44°.8 at Wolverhampton; the lowest at Sunderland was 53°, at Liverpool 52°.4, at Brighton 52°. The general mean was 48°.6.

The greatest ranges were 38° at Truro, 36°.7 at Nottingham, 35°.1 at Wolverhampton; the smallest ranges were 23° at Brighton, 24° at Sunderland, and 25° at Preston. The general mean was 30°.9.

The mean of the seven high day temperatures was highest at Leeds, 78°.6, at Blackheath 78°.1, at Hull 77°.7; and was lowest at Sunderland, 70°.5, at Preston 71°.1, at Bradford 71°.8. The general mean was 74°.3.

The mean of the seven low night temperatures was highest at Preston, 56°.4, at Brighton 56°.2, at Liverpool 56°; and was lowest at Wolverhampton, 49°.1, at Nottingham 50°.5, at Truro and Sheffield 51°.7. The general mean was 53°.6.

The mean daily range was greatest at Nottingham, 25°.4, at Hull 25°.3, at Wolverhampton 25°; and was least at Preston 14°.7, at Sunderland 15°.7, at Bradford 16°.4. The general mean was 20°.7.

The mean temperature was highest at Blackheath, 65°.2, at Leeds 64°.9, at Hull 63°.3; and was lowest at Wolverhampton, 59°.9, at Bristol 60°.7, at Sunderland 61°.1. The general mean was 62°.2.

Rain.—The largest falls were 0.29 inch at Bolton, 0.27 inch at Nottingham, 0.26 inch at Truro; the smallest falls were 0.01 inch at Hull, 0.05 inch at Sheffield, 0.07 inch at Blackheath. The general mean fall was 0.15 inch.

SCOTLAND: *Temperature.*—During the week ending August 23 the highest temperature was 78°.2, at Leith; at Greenock the highest was 72°. The general mean was 75°.2.

The lowest temperature in the week was 45°.7, at Dundee; at Aberdeen the lowest temperature was 49°.1. The general mean was 47°.3.

The mean temperature was highest at Aberdeen, 61°.8, and lowest at Greenock, 60°.3. The general mean was 60°.9.

Rain.—The largest fall was 0.40 inch, at Glasgow, and the smallest fall was 0.01 inch, at Leith. The general mean fall was 0.14 inch. No rain fell at Edinburgh.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, AUGUST 27, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
	In.	In.	°	°	°	°	°	°			In.
Aug. 21	30 05	+0 24	72 0	55.0	17.0	62.7	+ 2	52.9	70	W.	0 00
22	29 97	+0 15	81.0	53 5	27.5	66.1	+ 5	54.8	68	E.	0 00
23	9 94	+0 12	83.0	56 5	26.5	67 4	+ 6	56.7	68	W.	0 00
24	29 87	+0 04	86.0	53.0	33 0	69.6	+ 9	0 51.9	53	E. to E.S.E.	0.00
25	29 87	+0.04	67 0	53 5	13 5	58 3	— 2	53 1	85	N.W.	0 02
26	29.93	+0 08	80.0	48 0	32.0	53 3	— 7	48 2	83	N.W.	0.00
27	29.73	—0 1	58.0	40 0	18 0	53 3	— 7	46 3	76	N W	0.33
Mean	29.91	+0 08	72 4	52.8	19 6	61.5	+ 1	52.1	72	N.W	0 35

Aug. 21.—Mist from early morning till noon. Fine afternoon, cloudless at night.
— 22.—Very fine day and night.
— 23.—Dense fog in early morning till 8 30 A.M. Very fine day and night.
Aug 24.—Very fine day and night.
— 25.—Rain in early morning. Dull day. Fine and clear at night.
— 26.—Very fine morning. Dull afternoon and night.
— 27.—Dull morning, rain began to fall at 3 P.M. and continued till midnight.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

CYCLAMENS FLOWERING ALL THROUGH THE SUMMER: *H. F. R.* It is unusual for these tubers to do so when not unduly excited. They flower when planted in peat beds in half-shady situations, or when kept in pots till July, when seed is formed that ripens in August and September. Presumably your tubers are several years old. You could repot them soon, allowing them to start into growth very gradually. A trifle of bottom-heat would help them, but the present high temperature of all glass structures is enough for them as regards top-heat.

FERNS: *S. W.* 1, Adiantum tenerum; 2 and 3, Blechnum occidentale.

FUCHSIA EXONIENSIS: *W. Divers.* The flowers sent are those of Fuchsia exoniensis, and differ from F. corallina in many points, F. corallina having a deep purple-coloured corolla and more reflexed sepals, and being a deep crimson, and long in the tube; F. exoniensis deep pink tube and sepals, with light-purplish corolla.

INSECTS: *Camjee.* The bacon beetle (Dermestes lardarius), in various states.—*Anon.* Larva and small, fat, inert animals from Nunthorpe are the caterpillar and wingless females of the common Vapourer Moth, which is of a reddish brown colour, now flying about plentifully in search of his unwieldy partner.

LOBELIAS, HERBACEOUS VARIETIES: *T. S. B.* The best are Queen Victoria and Cardinalis. The foliage is crimson, and blooms scarlet. They require a soil rich in humus, and at the same time moist.

MUSHROOMS: *E. V. Liphook.* The fungi sent appear to be true Mushrooms, but they were in a bad condition when they reached this office, and soddened with moisture. Your plants may belong to a bad variety, or possibly your mode of culture is not right.

NAMES OF FRUITS: *H. M. H. Apples*: 1, Edmund Jupp; 2, Irish Peach.

NAMES OF PLANTS: *W. F.* Meillotus arvensis.—*J. T. S.* Datura stramonium, used in cases of asthma: poison.—*D. P.* 1, Ophiopogon, not recognised; 2, Amaryllis vittata.—*W. H. K.* 1, Eutoca viscida; 2, Verbascum nigrum; 3, Solidago virgaurea; 4, Kerria japonica.—*J. G. W.* 1, Spartium junceum; 2, Adiantum cuneatum; 3, Campanula pulla, white var.; 4, Eccremocarpus scaber.—*E. Marsh.* Both varieties of Tradescantia zebrina. The Selaginella we cannot name from so poor a specimen.

NERIUM OLEANDER: *G. W. Byns.* A white form of Nerium Oleander, not recognised. The French raise these in great numbers from seed, and there is much variety in colour and form.

INTELLIGENT READERS, PLEASE NOTE:—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

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CATALOGUES RECEIVED.

SUTTON & SONS, Reading—Descriptive Bulb List.
PAUL & SON, Cheshunt, N.—Hardy Herbaceous Plants.
F. AND A. DICKSON & SONS, 106, Eastgate Street, Chester—Dutch Bulbs.
CARTER & Co., High Holborn, London, W.C.—Bulbs, Winter and Spring Flowers.
WATKINS & SIMPSON, Exeter Street, Strand, London, W.C.—Flower Roots and Bulbs.
CARTER, PAGE & Co., 53, London Wall, E.C.—Roses.
J. MATHEWS, Weston-super-Mare—Pottery, &c.
JOHN KENNARD, Swan Place, Old Kent Road, S.E.—Soils and Sundries.
EDMUND P. DIXON, Hull—Bulbous Roots, Strawberries, &c.
DOBIE & MASON, 66, Deansgate, Manchester—Flower Roots.
WEBB & SONS, Stourbridge—Bulbs.
J. R. THYNE, Glasgow—Bulbs, &c.
STRIKE & HAWKINS, Stockton-on-Tees—Bulbs.
JAMES DON, Nottingham—Dutch Bulbs.
HARTLAND, Cork—A Little Book of Daffodils.
JAS. COCKER & SONS, Aberdeen—Dutch Bulbs.
W. SMITH & SONS, Aberdeen—Dutch Bulbs.
EMIL LIEBIG, Dresden—Azaleas, Camellias, Ericas, Roses.

COMMUNICATIONS RECEIVED—R. D—C. W. D.—F. O. B.—J. T.—W. J. J.—W. B.—Protherce & Morris.—W. W.—G. N. (with thanks).

Markets.

COVENT GARDEN, August 28.

SUPPLIES heavy; trade dull. The heaviest consignments from the Continent ever known are now reaching us, causing a depressed feeling all round. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6–	4 0	Melons, each	1 0–	1 6
Figs, per dozen	1 0–	1 6	Pine-apples, Eng., lb.	6 0–	..
Grapes, per lb.	0 6–	3 0	Peaches, per doz.	2 0–	10 0
Kent Filberts, lb.	0 6–	..	Plums, ½-sieve	4 0–	9 0
Lemons, per case	10 0–	14 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0–	4 0	Horse Radish, bund.	3 0–	4 0
Asparagus, English, per 100	3 0–	5 0	Lettuces, Cabbage, per doz.	1 6–	..
Aubergines, each	0 4–	..	— Cos, each	0 2–	..
Beans, French, lb.	0 4–	..	Marrows, each	0 2–	..
Beet, per doz.	1 0–	..	Mint, green, bunch	0 4–	..
Cabbages, per doz.	1 0–	1 6	Mushrooms, p. baskt.	1 0–	2 0
Carrots, per bun.	0 6–	..	Onions, per bunch	0 6–	..
Cauliflowers, English, dozen	3 0–	4 0	— Spring, per bun.	0 6–	..
Celery, per bundle	1 6–	2 6	Parsley, per bunch	0 9–	..
Cucumbers, each	0 6–	1 0	Peas, English, quart	1 6–	..
Endive, French, per dozen	2 6–	3 6	Radishes, per dor.	1 6–	..
Garlic, per lb.	0 6–	..	Small salading, per punnet	0 4–	..
Herbs, per bunch	0 2–	0 4	Spinach, per strike	2 0–	..
			Tomatos, per lb.	1 0–	..
			Turnips, new, bun.	0 8–	..

POTATOS.—Kent Regents, 80*s.* to 100*s.*; Kent kidneys, 70*s.* to 100*s.*: Champions, 70*s.* per ton. Trade heavy.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0–	4 0	Marguerites, 12 bun.	3 0–	6 0
Arum Lilies, 12 blms.	3 0–	6 0	Mignonette, 12 bun.	1 0–	4 0
Asters, 12 bunches	3 0–	6 0	Pelargoniums, per 12 sprays	0 6–	1 0
Bouvardias, per bun.	0 9–	1 0	Pinks, various, 12 bunches	2 0–	6 0
Calceolaria, 12 sprays	0 4–	1 0	Primula, double, bun.	1 0–	1 6
Carnations, 12 bun.	2 0–	6 0	Pyrethurm, 12 bun.	2 0–	6 0
Cornflower, 12 bun.	2 0–	4 0	Rhodanthes, 12 bun.	4 0–	6 0
Dahlias, 12 bunches	3 0–	6 0	Roses (indoor), doz.	1 0–	4 0
Eucharis, per doz.	2 0–	5 0	— (outdoor), 12 bun.	2 0–	6 0
Forget-me-not, 12 bunches	2 0–	6 0	— coloured, doz.	4 0–	9 0
Gardenias, 12 blms.	3 0–	6 0	Stephanotis, 12 spr.	2 0–	4 0
Gladiolus, various, 12 bunches	6 0–	12 0	Stocks, 12 bunches	3 0–	6 0
Heliotropes, 12 sp.	0 6–	1 0	Sweet Peas, 12 bun.	1 6–	4 0
Lapageria, white, 12 blooms	2 0–	3 0	Sweet Sultan, 12 bun.	2 0–	4 0
— red, 12 blooms	1 0–	2 0	Tuberoses, per doz.	0 6–	1 0
Lavender, 12 bun.	6 0–	8 0	White Jasmine, bun.	0 6–	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	24 0	Foliage Plants, various, each	2 0–	10 0
Arbor-vitæ (golden), per dozen	6 0–	18 0	Fuchsias, per doz.	3 0–	6 0
— (common), dozen	6 0–	12 0	Heliotrope, doz.	3 0–	6 0
Asters, per dozen	3 0–	6 0	Hydrangea, per doz.	9 0–	18 0
Begonias, per doz.	4 0–	12 0	— paniculata, doz.	12 0–	24 0
Bouvardia, dozen	9 0–	18 0	Lilium longiflorum, per dozen	6 0	18 0
Calceolarias, per doz.	4 0–	9 0	— lancifolium, doz.	6 0–	18 0
Chrysanth., dozen	4 0–	6 0	Marguerite Daisy, per dozen	8 0–	12 0
Cockscombs, doz.	2 6–	4 0	Mignonette, per doz	3 0–	6 0
Coleus, various, doz.	2 0–	4 0	Myrtles, per doz.	6 0–	12 0
Cyperus, per dozen	4 0–	12 0	Palms in variety, each	2 6–	21 0
Dracæna term. doz.	30 0–	60 0	Pelargoniums (show), per dozen	4 0–	9 0
— viridis, per doz.	12 0–	24 0	— scarlet, per doz	2 0–	6 0
Erica, various, doz.	9 0–	18 0	Petunias, per dozen	3 0–	6 0
Euonymus, various, per dozen	6 0–	18 0	Rhodanthes, p. dozen	4 0–	6 0
Evergreens, in var., per dozen	6 0–	24 0	Solanums, dozen	9 0	15 0
Ferns, in var., dozen	4 0–	18 0			
Ficus elastica, each	1 6–	7 0			

SEEDS.

LONDON: *August 27.*—The seed market to-day, as is usual at this time of the year, was exceedingly quiet. Some new samples of red Clover seed, both English and Continental, have been shown, but no business has resulted. In Trifolium incarnatum there is no change. New white Mustard is now offering. Rape seed keeps extremely firm. Winter Tares are in good supply; values have now steadied themselves. Seed Rye continues scarce. Blue Peas find buyers at last week's quotations. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

HAY.

Tuesday's Whitechapel Market report states that the supplies were larger, and meadow hay rather lower in price than last reported. Quotations:—Prime old Clover, 95*s.* to 120*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 115*s.*; best meadow hay, 80*s.* to 98*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 36*s.* per load. On Thursday a rather large supply was on offer. The trade was quiet but weak.—The Cumberland Market report states that trade was dull, at the following quotations:—Prime old Clover, 100*s.* to 112*s.*; inferior, 60*s.* to 75*s.*; prime old hay, 80*s.* to 92*s.*; new, 70*s.* to 84*s.*; and straw, 30*s.* to 36*s.* per load.

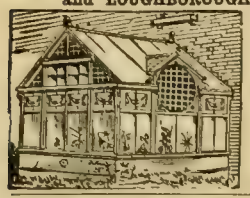
POTATOS.

The Borough and Spitalfields Markets reports state that the supply was good, the demand moderate, and prices easier. Quotations:—Kent kidneys, 80*s.* to 100*s.*; ditto Regents, 86*s.* to 90*s.*; Essex Shaws, 60*s.* to 75*s.*; Early Rose, 80*s.* to 90*s.*; Magnum Bonums, 75*s.* to 90*s.*; Hebrons, 90*s.* to 110*s.*—The imports into London last week consisted of 84 bags and 46 barrels from Boulogne.

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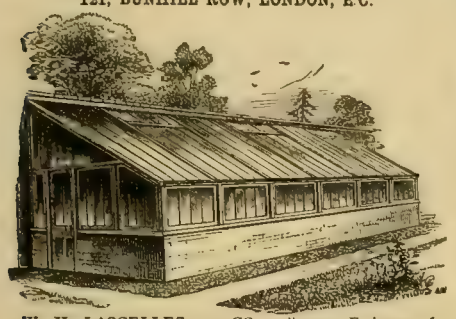
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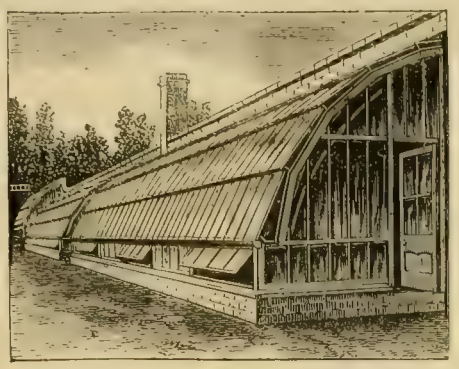
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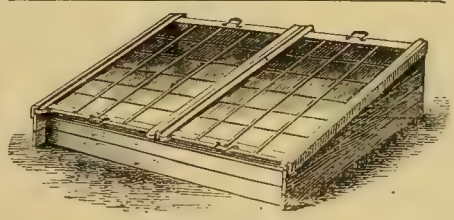
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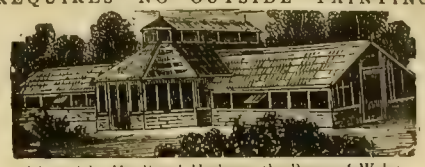
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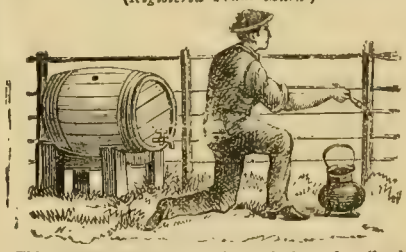
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UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

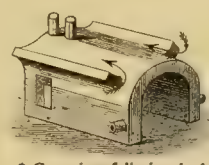
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D, 26 in.	500 ,,	9	10 0
E, 28 in.	600 ,,	10	15 0
F, 32 in.	700 ,,	12	5 0
G, 36 in.	850 ,,	13	15 0
H, 42 in.	1000 ,,	15	10 0
I, 48 in.	1250 ,,	17	5 0
J, 54 in.	1600 ,,	19	10 0
K, 60 in	2000 ,,	22	10 0

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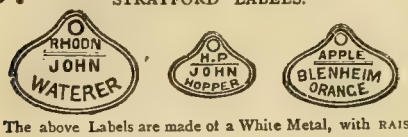
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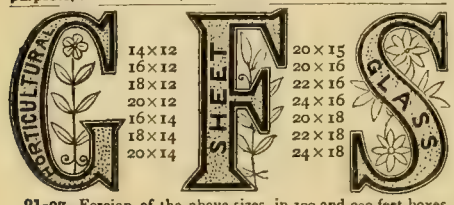
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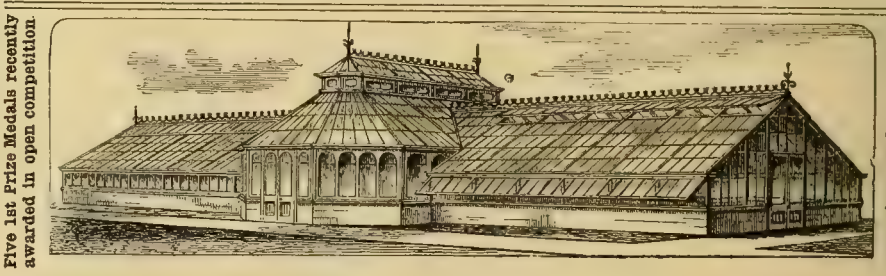
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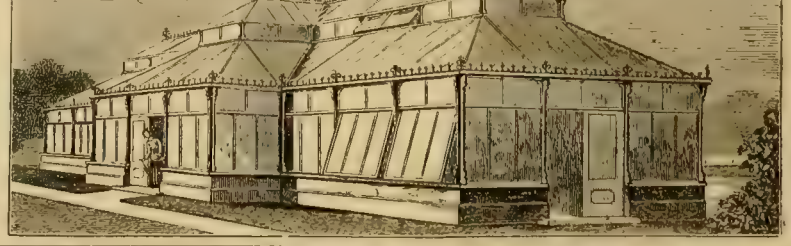
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 30, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 558.—Vol. XXII. { New Series. } SATURDAY, SEPTEMBER 6, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. Post-free, 5½d.

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Notice.

THE GARDENERS' CHRONICLE

FOR

NEXT SATURDAY, SEPTEMBER 13,

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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Brockley, S.E.
SHORT NOTICE.—MONDAY NEXT.

ABSOLUTE SALE. By order of the Trustee in Bankruptcy, without the least reserve. — *Re* E. Denson & Co. In Liquidation.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Foxberry Road, Brockley, S.E., near the Brockley Station, on MONDAY NEXT, September 8, at 12 o'Clock precisely, the whole of the GREENHOUSE PLANTS, including about 5000 Maidenhair Ferns, 2000 Palms of sorts, Dracænas, Gardenias, and a variety of other STOCK, UTENSILS in TRADE, and EFFECTS.

Now on view. Catalogues had on the Premises, of A. W. BLUNT, Esq., Accountant, 14, Queen Victoria Street, E.C.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Friday Next.
MASDEVALLIA HARRYANA, a grand importation.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Shuttleworth, Carder & Co. to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, Sept. 12, at half-past 12 o'Clock precisely, a magnificent importation of MASDEVALLIA HARRYANA from the same district as the former importations, and from which so many fine varieties have flowered; COMPARETTIA MACROPLECTRON, PILUMNA FRAGRANS var. NOBILIS, ODONTOGLOSSUM CRISPUM (Alexandræ) of the very best type, CATTLEYA MENDELII, C. CITRINA, EPIDENDRUM VITELLINUM MAJUS, &c., together with about 100 lots of ESTABLISHED ORCHIDS, including several very fine pieces.

On view morning of Sale, and Catalogues had.

Great Horticultural Sale Week.
IMPORTANT NOTICE to NURSERYMEN and FLORISTS.

MESSRS. PROTHEROE AND MORRIS beg to call special attention to the following SALES of HEATHS and other PLANTS, all of which have been arranged to take place the same week.

Their Sales for this particular week will comprise in the aggregate nearly 8000 lots, and have been arranged in this manner to enable country buyers to attend them all during the one visit to London.

Offices and Auction Rooms, 67 and 68, Cheapside, E.C.

Lee, Kent, S.E.
GREAT ANNUAL TRADE SALE.
To commence punctually at 11 o'Clock, in consequence of the unusually large number of 1140 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. B. Maller, to SELL by AUCTION on the Premises, The Burnt Ash Nursery, Lee, Kent, S.E., adjoining the Lee Railway Station on TUESDAY, September 16, at 11 o'Clock precisely, 20,000 Winter-blooming HEATHS, beautifully grown, and well set with bloom-buds, and which are unsurpassed in the Trade, comprising :—

15,000 Erica hyemalis	7000 Solanum capsicastrum, well berried
3,000 ,, gracilis	2000 Adiantum cuneatum, gracillimum, and Pacotti
1,000 ,, caffra	1000 Cyclamen persicum
Large quantities of ventricosa, grandinosa, melanthera, and others	1000 Ampelopsis Veitchii
Thousands of Erica hyemalis in small pots, for growing on	6000 Bouvardias, including the double white and red Alfred Neuner, and President Garfield
1000 Epacris	2000 Genistas
1000 Decorative Palms	
1000 Grevillea robusta	

Maréchal Niel and other dwarf ROSES; 600 PASSION-FLOWERS, English grown; AZALEAS and CAMELLIAS, double white PRIMULAS, extra strong; STEPHANOTIS, HOYAS, GARDENIAS, and other Stock.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B. The Auctioneers desire to call attention to this Annual Sale. The Stock is in unusually fine condition, as in previous years, and intending purchasers are invited to inspect it.

Lea Bridge Road Nurseries, Leyton, E.
UNRESERVED SALE. EXPIRATION of LEASE.
GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS and other PLANTS, by order of Mr. John Fraser.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lea Bridge Road Nurseries, Leyton, E., close to Hoe Street railway station, on WEDNESDAY, September 17, at 11 o'Clock precisely (in consequence of there being upwards of 1100 lots), without reserve, many thousands of winter-blooming and other HEATHS, remarkably well grown, including hyemalis, gracilis, hybrida, candidissima, Parmentiera rosea, persoluta alba, and others; EPACRIS of the choicest kinds, 1500 AZALEA INDICA, 2000 CYCLAMEN PERSICUM, 1000 GENISTA FRAGRANS, 400 Double White PRIMULAS, in 40 and 48 pots; Tea-scented and Noisette ROSES, SOLANUM CAPSICASTRUM in berry, several hundreds of well-grown CAMELLIAS, well set with bloom; CLEMATIS INDIVISA LOBATA, and other GREENHOUSE CLIMBERS; 1500 early flowering CHRYSANTHEMUMS, 200 Maréchal Niel and other ROSES, from 7 to 10 feet; a large quantity of fine plants of AMPELOPSIS VEITCHII, a variety of GREENHOUSE PLANTS, fine healthy young plants of LAPAGERIA ALBA and ROSEA SUPERBA, a beautiful lot of about 300 ARAUCARIA EXCELSA, CLEMATIS JACKMANNI, a splendid lot of variegated IVIES, and other stock.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tottenham, N.
GREAT ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS, by order of Mr. John Maller, to commence punctually at 11 o'Clock, there being upwards of 1200 lots in one day.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Brunswick Nursery, Tottenham, N., close to White Hart Lane Station, Great Eastern Railway, on THURSDAY, September 18, at 11 o'Clock precisely, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in No. 48 and 32-pots, and fit for immediate sale, consisting of 20,000 WINTER BLOOMING HEATHS, beautifully grown and abundantly set with flower, including ERICA HYEMALIS, GRACILIS CAFFRA, ASSURGENS, WILMOREA, and other best kinds.

5000 remarkably well berried Solanums	4000 Tree Carnations, best varieties
1000 handsome Palms	1000 Epacris
5000 Bouvardias	4000 Genistas
1000 Grevillea robusta	2000 double white Primulas
5000 well-grown Ferns	

500 Ficus elastica, 1000 Euphorbias, 500 Myrtles, large Azaleas and Camellias for cutting, 1000 Acacias in variety, many thousands of small Ericas, Genistas, and Ferns for growing on, Euonymus ovatus aureus in pot, and many thousands in stores, Shrubs for potting, and other Stock.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the stock is in first-rate condition, the Ericas being especially well set for flower.

Sidcup, Kent, S.E.
GREAT TRADE SALE
Of WINTER-BLOOMING HEATHS and other PLANTS, comprising probably one of the largest Stocks ever offered in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longland's Nursery, Sidcup (about ten minutes' walk from Pope Road Station, South Eastern Railway), on FRIDAY, September 19, at 11 o'Clock punctually, in consequence of there being upwards of 1000 lots,

40,000 WINTER-BLOOMING HEATHS,

which are particularly well grown and beautifully set with flower, consisting of

15,000 Erica hyemalis	4000 Genistas
10,000 ,, gracilis	3000 Solanums, well berried
5,000 ,, persoluta alba	2000 Adiantums
5,000 ,, Cavendishi	2000 Cinerarias
5,000 ,, ventricosa	1000 Double Primulas

and other Stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—Messrs. Gregory & Evans in announcing this, the first of their Annual Sales, beg to call the attention of the Trade to their unrivalled Stock of ERICA HYEMALIS, GRACILIS, ADIANTUMS, &c., as advertised above, the whole being in unusually fine condition. The Stock will be offered in extra large lots and an inspection is invited.

Brixton.
Five minutes' walk from Loughborough Junction Station, and only 2½ miles from the City or West End.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Dowling to SELL by AUCTION, on the Premises, the Swiss Nursery, Angel Road, Brixton, on THURSDAY, September 25, at 12 o'Clock precisely, the beneficial INTEREST in the LEASE of the NURSERY, comprising Half an Acre of Ground with 7 Greenhouses, held for an unexpired term of nearly Forty Years at a quit-rent of only 15. per annum. Also the Interest in the Agreement for Lease of piece of GARDEN GROUND, situate in Alington Place, with 3 Greenhouses. Immediately after the Sale of the Leases will be offered in suitable lots the whole of the GREENHOUSE PLANTS, large Camellias and Azaleas, Shrubs, UTENSILS in TRADE, the remaining HOUSEHOLD FURNITURE, and other items.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Brighton.—Preliminary Notice.
By order of the Executors of the late Mr. Thomas Killick.
IMPORTANT CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Dyke Road, Brighton, on WEDNESDAY and THURSDAY, October 8 and 9, the whole of the remarkably well grown NURSERY STOCK, 15,000 Dwarf Roses, AGRICULTURAL IMPLEMENTS, HOTICULTURAL REQUISITES, three HORSES, and the HOUSEHOLD FURNITURE and effects.

Further particulars will appear.

N.B. The valuable FREEHOLD BUILDING ESTATE TO BE SOLD. Particulars of the Auctioneers.

Preliminary Notice.
The well known collection of ORCHIDS, formed by Oscar Lamarche, Esq., of Liege.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Oscar Lamarche, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., EARLY IN OCTOBER, his entire COLLECTION of ORCHIDS, which enjoys a reputation probably unequalled on the Continent.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6721.)
LARGE and VALUABLE IMPORTATIONS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 11, a superb lot of ODONTOGLOSSUM SCEPTRUM, in fine condition; a large lot of CATTLEYA IMPERIALIS, LÆLIA ELEGANS, ODONTOGLOSUM EDWARDI, CATTLEYA INTERMEDIA, PESCATOREAS, CATTLEYA ELDORADO SPLENDENS, in fine masses; a large lot of CATTLEYA SUPERBA, and many other ORCHIDS.

On view morning of Sale, and Catalogues had

Thursday Next.—(Sale No. 6721.)
15 Cases of ORCHIDS from Brazil, Burmah, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, at half-past 12 o'Clock precisely, a grand Importation of LÆLIA PURPURATA, SOPHRONITES GRANDIFLORA, CATTLEYA INTERMEDIA, C. LEOPOLDI, C. GRANDIS, ONCIDIUM CRISPUM, DENDROBES of sorts, CŒLOGYNES, CYMBIDIUMS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6721.)
SACCOLABIUM, supposed new species.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 11, an importation of a grand SACCOLABIUM, probably a hybrid between S. giganteum and S. violaceum. Sepals and petals pure white, spotted with purple; lip very large, and of a beautiful purple. The plants are in splendid health. Also twelve good plants of PHALÆNOPSIS SCHILLERIANA, and twelve ditto P. AMABILIS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6721.)
Distinct Looking LÆLIA, with Leaves 20 Inches Long and 4 Inches Wide.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 11, a fine importation of an extraordinary large leaved LÆLIA in fine condition.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6721).
ESTABLISHED ORCHIDS, STOVE and GREENHOUSE PLANTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 11, at half past 12 o'Clock precisely, the small COLLECTION of ORCHIDS formed by Alexander Gillespie, Esq., of Weybridge, comprising Dendrobium moniliforme, Cattleya Mossiæ superba, C. velutina, Lælia species with yellow flowers, Anguloa Clowesii, Peristeria elata, &c. And a small Collection of STOVE and GREENHOUSE PLANTS, including a few choice Camellias and Azaleas, &c.

On view morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his NEXT SALE of ORCHIDS in Flower will take place on THURSDAY, September 18. Gentlemen desirous of entering plants for this Sale, will please send particulars of same not later than THURSDAY NEXT.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Valuable Specimen Orchids.

MESSRS. SMITH AND DEWAR beg to intimate that they are honoured with instructions to OFFER by AUCTION, on THURSDAY, September 18, at 12 o'Clock, within 79, George Street, Edinburgh, the whole of the important and valuable

COLLECTION of SPECIMEN ORCHIDS,

from Newbattle Abbey Gardens.

The plants are all in splendid health and condition, and include amongst others several fine specimen Vandas, including the Dalkeith tricolor and Veitch's suavis, and a fine variety of Vanda cœrulea; grand specimens of Cœlogyne cristata, Dendrobium fimbriatum, oculatum giganteum (magnificent variety), grand specimen, with over forty bulbs and twenty new growths: also Dendrobiums densiflorum and Wardianum, Masdevallia Veitchiana, Lindeni, Harryana, Chimæra (true), Chimæra Backhousiana, Wallisi, bella, &c.; also many fine Odontoglossums, Alexandræ, Pescatorei, Andersoniana, Sanderianum, &c.; Cypripediums, Cattleyas, Lælias, &c.

Catalogues now ready and will be forwarded on application to Mr. PRIEST, Gardener, Newbattle Abbey, or to the Auctioneers.

Pope's Grove, Twickenham,
Within five minutes' walk of Strawberry Hill Railway Station, and a short distance from the River Thames, Bushey Park, Hampton Court, and Richmond.

MR. J. N. GOATLY is favoured with instructions to SELL by AUCTION, at the "King's Head" Hotel, Twickenham, on TUESDAY, September 9, at 2 for 3 o'Clock, in Two Lots, valuable FREEHOLD BUILDING LAND, fully ripe for immediate development, having a splendid frontage of 375 feet to Pope's Grove, and an average depth of about 115 feet, and suitable for the erection of Villa Residences, for which there is a great demand. There is a choich plantation of Fruit Trees in full bearing along the rear of this lot. Also about 1½ Acre of a FREEHOLD enclosed FRUIT GARDEN, with a variety of Choice Trees thereon, having an entrance with a frontage to Pope's Grove of 50 feet, well suited for a Nursery, Florist's, &c., or for the erection of a Private Residence where any one desires spacious grounds.

May be viewed at any time prior to the Sale, and particulars and conditions of Sale obtained at the "King's Head" Hotel, Twickenham; of W. G. SLACK, Esq., Solicitor, 38, Guildford Street, Russell Square, London, W.C.; and of the Auctioneer, Twickenham Green.

MESSRS. GREGORY AND EVANS'
GREAT SALE OF ERICAS
will take place on FRIDAY, September 19,
when the following first-class goods will be offered by
MESSRS. PROTHEROE & MORRIS :—

15,000 HYEMALIS in 60-pots.
6,000 GRACILIS, in 60-pots.
5,000 PERSOLUTA ALBA.
5,000 MELANTHERA.
6,000 CAVENDISHII, in 60-pots.
5,000 VENTRICOSA.
6,000 VENTRICOSA COCCINEA, in 60-pots.
6,000 VENTRICOSA MAGNIFICA, in 60-pots.
12,000 GENISTA, in 60-pots.
3,000 SOLANUM.
2,000 ADIANTUM.
1,000 Double PRIMULA.
2,000 CINERARIAS.

CATALOGUES will shortly be issued.
Longlands Nursery, Sidcup.

Preliminary.

SALE of an IMPORTANT COLLECTION, comprising Several Thousand Choice and Rare ESTABLISHED ORCHIDS, in first-class condition; and a large number of IMPORTED PLANTS.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from the Executrix of the late Mr. George Toll, deceased, to SELL by AUCTION, on TUESDAY and WEDNESDAY, September 9 and 10, at their large rooms, 45, Princess Street, Manchester, a Finely Selected Lot of Good ORCHIDACEOUS PLANTS. Catalogues are in course of preparation.

For further particulars apply to Messrs. S. SIMPSON AND SON, Solicitors, 15, Southgate, King Street West; or to the Auctioneers, 45, Princess Street, both of Manchester.

Melbourne Nursery, Anerley.

Lately occupied by the General Horticultural Company.

MESSRS. MEAKIN, MAY AND MAY will SELL or LET by AUCTION, at the Mart, Token-house Yard, E.C., on TUESDAY, September 23, at 2 o'Clock, the above valuable FREEHOLD PROPERTY, covering over 2 Acres, and having Greenhouses and Conservatories (over 20,000 feet of glass), Engine, Furnaces, Manager's House, &c., all in working order. Excellent frontages to main roads.

Particulars, Plans, and Conditions at the Mart, of Messrs. JESSOPP AND SON, Bedford; and of the Auctioneers, 111, Anerley Road, Anerley.

Waltham Cross, N.

MR. J. TYDEMAN will SELL by AUCTION, on TUESDAY, September 23, at 2 o'Clock sharp (unless a suitable offer is previously made for the Whole Collection), at the Nurseries, Waltham Cross, a VALUABLE COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, the property of Mr. E. Tudgey, of the "Exotic" Nurseries, Waltham Cross (late of Worcester), and sold in consequence of his giving up Exhibiting, including well grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnicomas, Dracophyllums, Stephanotis, Allamandas, Clerodendrons, Franciscæas, Rondeletias, Specimen Palms, Anthuriums, Crotons, &c. This well-known collection has taken first prizes at the London and Provincial Shows, viz.:—Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in the country. Also two Exhibition Plant VANS, in good repair.

Full particulars of Mr. J. TYDEMAN, Auctioneer and Valuer, Waltham Cross, N.

Eccleston Nursery, Prescot.

IMPORTANT SALE of excellent NURSERY STOCK, HOLLIES, RHODODENDRONS, AUCUBAS, ANDROMEDAS, YEWS, LIME TREES, CAMELLIAS, CONIFERÆ, and other valuable productions, which have been transplanted within three years.

MESSRS. ARTINGSTALL AND HIND are instructed by Mr. John Stead, to SELL by AUCTION, on WEDNESDAY, September 24, at 12 o'Clock prompt, at Eccleston Nursery, Prescot, Lancashire, about 3000 valuable EVERGREENS and SHRUBS.

The whole may be inspected one week prior to Sale, and Catalogues obtained from Mr. STEAD, or now on application to the Auctioneers, 45, Princess Street, Manchester.

Kent.

FOR DISPOSAL, a thoroughly genuine and very old-established NURSERY and FLORIST'S BUSINESS, part Leasehold and part Freehold, with a good Market Connection. Terms moderate, and can be arranged.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

FOR SALE, upon easy terms, a FREEHOLD NURSERY, of about 3 acres of excellent Land, planted at convenient distances with Standard Fruit Trees in bearing. Abundant supply of Spring Water, several Greenhouses and Pits, heated with Hot Water. An 8-roomed Villa-like Dwelling-cottage, Seed Shop, Stable, &c. No opposition for miles round, and in present hands 19 years.

Further particulars of Messrs. DUNN AND SOMAN, Estate Agents, Royal Kentish Buildings, Tunbridge Wells.

Somerset.

To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD, by Private Contract, with early possession, the Old-established BUSINESS (of over 150 years, and only changed hands three times) of a NURSERYMAN, SEEDSMAN, and FLORIST, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Princes Street, Yeovil.

The Merriott Nurseries comprise 27 acres of excellent Land, completely stocked with splendid young, valuable, and saleable Fruit; Coniferous, Forest, and Ornamental Trees and Shrubs; and well stocked Greenhouses, &c.

The Residence, Offices, Stabling, Manager's Villa, and Cottages, and a portion of the Nursery Grounds, are the proprietor's Freehold, and may be Purchased or taken on Lease.

The small Hendford Nursery is well stocked, and is provided with newly erected and conveniently-fitted Greenhouses, and other Erections adapted for the business. These Premises may also be purchased or taken on Lease.

The age and state of health of the Proprietor alone induce him to retire, and he will be prepared to Sell on advantageous terms.

The Yeovil Branch Business could be taken separately if so desired, or the whole affair in its entirety which would in the latter case afford an excellent opportunity for Partnership.

For further particulars and cards to view, apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or, to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.—June, 1884.

To Market Gardeners and Others.

TO LET, furnished, large and commodious BEDROOMS, centrally situated in Covent Garden.

Apply to X., 34, Wellington Street, Covent Garden, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

New Illustrated Catalogue.

JOHN MATTHEWS, Royal Pottery, Weston-super-Mare, having issued a New Illustrated CATALOGUE of Terra Cotta Vases, &c., begs to intimate that all previous ones are withdrawn from this date.—August 25, 1884.

Price List of Garden Pots, &c., Illustrated Catalogue, 1s. 6d.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

DAFFODIL, or GARDEN NARCISSUS.—Our Collection of these charming and fashionable flowers includes all the finest sorts in cultivation at moderate prices.

☞ Awarded a Banksian Medal for our exhibits of Narcissus 1883 and 1884) by the Royal Horticultural Society. "A fine display was made by Messrs. Collins & Co. with various kinds of *the finest Daffodils*."—*The Garden*, March 24, 1884.

Special quotations for large quantities to naturalise.

CATALOGUE of above and other Bulbs, with over 100 illustrations,

COLLINS BROS. AND GABRIEL, Bulb Growers and Importers, 39, Waterloo Road, London, S.E.

To the Trade only.

E. H. KRELAGE AND SON, NURSERYMEN, SEEDSMEN, and FLORISTS, Haarlem, Holland.—The Wholesale CATALOGUE (No. 374A) of Dutch Flower Roots and Miscellaneous Bulbous and Tuberous-rooted Plants for 1884 and 1885, is now ready, and may be had free on prepaid application by Nurserymen, Seedsmen, and Florists. The Catalogue, although giving only an extract of the collections, forms a pamphlet of 48 pages 8vo, in two columns, and is doubtless one of the most complete sent out for this speciality. The collections of every description of the establishment are in the most desirable excellent condition.

NARCISS and DAFFODILS.—A fine Collection of all the leading sorts, including most of the new and newer varieties.

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

SNOWDROPS. For grand new varieties, a great advance on the old sorts,

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

LILY OF THE VALLEY. Two new varieties, with much larger bells, and more vigorous habit.

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

NOW READY.

CARTERS' CATALOGUE

OF

BULBS AND ROOTS

OF

Winter and Spring Flowers.

Gratis to intending Purchasers.

ROYAL SEEDSMEN BY COMMAND,

237 and 238, High Holborn, London.

TREES for AUTUMN PLANTING.

FOX and GAME COVERT PLANTS.

SEEDLING and TRANSPLANTED FOREST TREES.

ORNAMENTAL TREES and SHRUBS.

RHODODENDRONS and Ghent AZALEAS, well set with flower-buds.

APPLE TREES, Standard, 24s. per dozen, £7 10s. per 100.

Priced LISTS of each on application to W. MAULE AND SONS, The Nurseries, Bristol.

Sow Now for Early Flowering in Spring.

ROEMER'S Superb Prize PANSY SEED. ☞ The best Pansy Seed in the World. ☜

FANCY VARIETIES, saved from named flowers, splendid, mixed, 10s. per ounce, 6d. per packet.

SHOW VARIETIES, saved from named flowers, splendid, mixed, 5s. per ounce, 6d. per packet.

FANCY and SHOW VARIETIES, fine, mixed, 3s. per ounce, 3d. per packet.

ASSORTMENT of 18 splendid distinct varieties, containing each 1 packet, 3s.

CAREFULLY SAVED only from named Exhibition Flowers, of all varieties, splendid, mixed, highly recommended, 2s. per 1000 seeds, 6d. per packet.

GIGANTIC-FLOWERED SHOW VARIETIES, new and distinct, flowers up to 4 inches in diameter, 6s. per 1000 seeds, 1s. 6d. per packet.

My Pansy gained the First Prize at the Exhibition at Berlin, 1884.

For separate sorts see CATALOGUE, forwarded post-free on application

FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

EVERGREEN HEDGES.

ARBOR VITÆ, American, 2 to 3 feet, 6s. per doz., 30s. per 100; 3 to 4 feet, 8s. per doz., 50s. per 100; 4 to 5 feet, 10s. per doz

CUPRESSUS LAWSONIANA, 2 to 3 feet 6s. per doz., 40s. per 100; 3 to 4 feet, 10s. per doz., 80s. per 100; 4 to 5 feet, 18s. per doz., 120s. per 100.

HOLLIES, Green, 9 to 12 inches, 12s. per 100; 12 to 15 inches, 16s. per 100; 15 to 18 inches, 3s. per doz., 20s. per 100; 1½ to 2 feet, 9s. per doz., 50s. per 100; 2 to 2½ feet, 12s. per doz, 80s. per 100; 2½ to 3 feet, 21s. per doz.; 3 to 4 feet, 30s. per doz.; 4 to 5 feet, 42s. per doz.

THUIA LOBBII, 3 to 4 feet, 15s. per doz., 100s. per 100; 4 to 5 feet, 18s. per doz., 130s. per 100; 5 to 6 feet, 24s. per doz, 160s. per 100.

The above are all well grown, have been recently transplanted, and will remove with safety.

JNO. JEFFERIES AND SONS, Royal Nurseries, Circencester.

Rhododendrons.

ISAAC DAVIES AND SON in offering the above, beg to state that their stock of the following is finer this year than it has ever been, and they do not remember a season when their Plants were so thickly covered with flower-buds.

RHODODENDRONS, hybrid seedlings, various colours, fine bushes, 3 to 4 feet, 30s. to 40s. per dozen; 2½ to 3 feet, 18s. per dozen, £7 per 100.

" selected hybrid seedlings, with colour labelled on each plant, fine bushes, 2½ to 4 feet, 24s. to 36s. per dozen.

" choice named kinds (including many beautiful varieties of our own raising), fine bushy plants, 1½ to 3½ feet, 30s., 40s., to 60s., per dozen.

* Over 90 in every 100 of the above well set with buds.

RHODODENDRONS, mixed hybrid seedlings, in great variety of colours, and from early and late strains, nice bushy plants, 15 inches high, 50s. per 100.

" seedlings from our choicest and newest kinds, each variety kept separate, and can be supplied in a fair proportion of each, bushy plants, 9 to 12 inches high, 30s. per 100.

Plants suitable for Potting.

RHODODENDRONS, hybrid seedlings, of various colours 1½ to 2 feet, green, bushy plants, all covered with buds 15s. per dozen, £5 per 100.

" PRÆCOX, good bushy plants, covered with buds, 12s. to 18s. per dozen.

AZALEA MOLLIS, seedlings, from three or four of the best varieties, distinct light and dark colours, each kept separate, nice bushes, five to ten buds on each, 9s. per dozen, 50s. per 100.

" PONTICA, bushy plants, well budded, 6s., 9s. to 12s, per dozen.

" DAVIESII, beautiful trusses of white sweet-scented flowers, best of all for forcing, fine plants, well-budded, 24s. to 36s. per dozen.

" AVALANCHE, pure white sweet-scented flowers, very compact and bushy growing plant, nice plants, well-budded, 2s. 6d. each, 24s. per dozen.

ANDROMEDA FLORIBUNDA, nice bushes, a mass of flower-buds, 12s. per dozen.

PERNETTYA SPECIOSA (our own variety), quite hardy, berries pink when ripe, well berried plants, 12s. per dozen.

SKIMMIA JAPONICA, well established (twelve months) in pots, very green, and thickly covered with berries, large and well formed plants, 18s. to 24s. per dozen.

Our CATALOGUE of our own Novelties and General Nursery Stock will be ready in the course of a week.

All goods free on rail, but a small charge will be made for package. Cash or reference from unknown correspondents.

Ormskirk, Lancashire

STRAWBERRIES—STRAWBERRIES.—Purchaser's selection, strong runners from ground, 3s. 6d. per 100: our ditto, 2s. 6d. per 100; 500 for 10s. 6d. Plants in 2½-inch pots, 12s. 6d. per 100; in 5-inch pots, 25s. per 100. All the principal sorts grown, including British Queen, Dr. Hogg, Jas. Veitch, Keens' Seedling, President, Sir C. Napier, Sir J. Paxton, Stirling Castle, Vicomtesse H. de Thury, and thirty other varieties. Catalogues on application,

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

THE following are offered from Surplus Stock. All the plants are in good condition. Prices for large or small quantities on application, as under, or an offer for the lot would be entertained. General List of Plants:—

350 Dracænas, sorts, 6 in. to 48 in.; 500 Ferns, sorts; 100 Coleus, sorts; 100 Azalea indica, sorts; 100 Abutilons, sorts; 1000 Geraniums, sorts, Bedding; 300 Geraniums, sorts, Pot; 150 Fuchsias, sorts; 100 Stove Plants, sorts, various; 500 Greenhouse Plants, sorts, various; 30 Amaryllis, sorts; 70 Vallota purpurea, 30 Cypripedium insigne, 4 Alsophila australis, stems 2 ft. to 6 ft.; 1 Alsophila excelsa, stem 2 ft.; 6 Camellias, sorts, 6 ft. to 8 ft.; 6 Palms, sorts, 1 ft. to 6 ft; 50 Aspidistra variegata.

G. REEVES SMITH, Jun., General Manager, Aston Park Lower Grounds, Aston, Birmingham.

Notice.

To Nurserymen, Seedsmen, and Florists.—Established 1856.

LEWIS ISAACS, IMPORTER OF DUTCH BULBS, 3, Victoria Warehouses, Mansell Street, Aldgate, E.C., begs to inform his Customers and the Trade in general that he has again arrived from Haarlem, in Holland, with his annual well selected stock of Bulbs. As an advantage to the Trade only, he begs to offer his named HYACINTHS, good picked Bulbs, all true to name and colour, at an all-round price of 3d. per Bulb, in any quantity from half a dozen of a sort and upwards. The stock is on view to intending purchasers, at the above address, which is only 3 minutes' walk from Aldgate Station.

Orders punctually attended to on the same day.

Catalogues post-free on application.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN AND SON, NURSERYMEN Overveen, near Haarlem, Holland.

Intending purchasers of Dutch Bulbs are invited to read Ant. Roozen & Son's CATALOGUE for 1884, and see the large saving effected by dealing direct with the Grower. The Catalogue will be sent post-free on application to their Agents, MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, E.C.

ANEMONES. A. FULGENS, A. FULGENS MULTIPETALA. Fine bulbs of these varieties. True English-grown.

A French mixed single and double, grand strain; habit vigorous and very brilliant colours, and all kinds of Bulbs.

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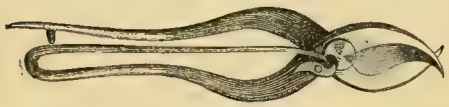
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 6, 1884.

AUDLEY END.

THE noble residence whose park the inhabitants of Saffron Walden delight to stroll in, entering it from one of their streets, is one of several great houses which were built in the reigns of the Tudors and Stuarts by the favourite Ministers of the Crown. It was built by the grandson of Sir Thomas Audley, each having been in turn Lord Treasurer of England. In those days the public money must have been smeared with bird-lime, so that a good deal of it stuck to the fingers of those who handled it. Audley End was always said to have been built with Spanish gold. It cost about £200,000—an enormous sum—which only a Lord Treasurer like the Earl of Suffolk, the builder of the vast pile, could have devoted to such a purpose. James I. remarked on seeing Audley End:—"It is too much for a king, though it may do very well for a Lord Treasurer." It was thirteen years in building, having been commenced in 1603, and here it now stands on its well chosen site on the banks of the Cam, the high road passing just beyond its gates, so that the world may see its grandeur without the least intrusion upon privacy. A noble park lies around it with the ornament and pleasure of many deer and of woods, wild Thyme, a rolling surface, and a chalk rock well covered with dry soil.

Audley End, at its completion, was the largest and most stately house in England, consisting of two great quadrangles, and although three sides of one of them, and one side of the other were demolished in 1721 and 1749 a grand house—the grandest in Essex—still remains. It was named after Sir Thomas Audley, who was made Chancellor on the fall of the great Sir Thomas More; and as Church lands then were passed about at a greater discount than those Essex clays of the present time, which don't grow Wheat and won't grow Barley, he obtained from Henry VIII., Defender of the Faith, the rich prize of Walden Abbey. A peerage followed, with the title of Lord Audley of Walden. His daughter, in due time, became his heiress, and contracted a well assorted union with the Duke of Norfolk, his Grace having married before while she was a widow, and a son by her second spouse became the Earl of Suffolk who was just now mentioned and who built Audley End in memory of his grandfather, who had so successfully worked the gold mine. By the time the Earl of Suffolk (of Suffolk House, where Suffolk Street, Strand, now is) was committed to the Tower for embezzlement; he was £40,000 in debt, in spite of his great estates and lucrative offices, and his son gladly sold Audley End to King Charles II., and here, conveniently near Newmarket as the place is, the Court was established in 1670, and at Audley End the queen frequently resided.

I must now jump to the Lords Braybrooke, descendants of Sir Thomas Audley, who have owned this property about a hundred years. The third Lord Braybrooke is known in the

literary world as the author of the *History of Audley End*, and the editor of the *Diary and Correspondence of Samuel Pepys*. In the first of these works the accomplished author described his dwelling, which is usually spoken of as one of the finest specimens of a Jacobean house, and this gave an elaborate answer to a question which is not infrequently asked—"What is a Jacobean house?"

Evelyn described this splendid house as a "mixed fabric, 'twixt antique and modern." An Italian writer speaks of its architecture as inclining to Gothic, mixed with a little of the Doric and Ionic; the house is, in fact, an example of the intermediate style between Gothic and classical, in which the great houses of England were built during the reigns of Elizabeth and James I. Turrets covered by cupolas on the roof at Audley End are well marked features of this style, and also the handsome mullioned windows, each of its three storeys having large, square mullioned windows, while each storey is separated from the other by a projecting string. There is a central hall with two two-storeyed porches, having Doric pillars, and a stone parapet of open work at the top of the wall. Lord Braybrooke tells us that the Abbey of Walden stood on that part of the east lawn which has been converted into a flower garden, where many coffins and skeletons were turned out by the labourers, with broken columns and stone mullions, intermixed with bricks and flints cemented together with mortar harder than the stone itself. The castle of the Earl of Essex, the founder of the monastery, was near this spot.

The name of Audley End is derived from its position at the extremity of the parish of Saffron Walden, and dates from about 1547, or about the commencement of Sir Thomas Audley's ownership.

All who remember the third Lord Braybrooke must retain pleasing recollections of him. The writer recalls him in the chair of the Saffon Walden Agricultural Society, aged and a little shaken, not on water, hesitating a little sometimes, but always saying exactly what he meant to say in the purest English. Some professional singers inflicted on the audience a very tiresome glee with the refrain—"In thunder, lightning, and rain," in endless iteration, and people long remembered the noble President's concluding witticism, when he hoped they would all meet again, but not "in thunder, lightning, or in rain." Like the peers who have followed him, this accomplished nobleman was much respected and very popular. He was succeeded by his eldest son, the Hon. R. C. Neville, the distinguished antiquarian, author of *Saxon Obsequies*, and other works, who, at his death in 1861, was succeeded by his brother, the present and fifth Lord Braybrooke.

When viewed from the Cambridge and London high road, Audley End mansion is seen in a strikingly beautiful light across a fine piece of smooth lawn of about 9 acres, and the small stream of the Cam, which at this part has been widened so as to form a long, slightly winding lake. The great windows lighting up the long front, broken by a portico of no great size, together with the pinnacled and domed roof, on which the green colour of copper covering the dome is distinctly visible, marks an old-world building, quite beyond the conception of the modern architect or builder. In other old Tudor houses you come across these great windows, the inheritance of a foggy, sunless land. You will also find them in just such another country as ours—Holland. There a house at the present day on its best sides is quite one-half glass.

From the window of hall and gallery some splendid views are to be obtained of the slightly hilly country surrounding the house—in the distance the towers and houses of Saffron Walden, which are far enough away to look handsomer perhaps than they are. The nearer home scenery shows a timbered hilly park beyond the river, very pleasant to look upon, with only round-headed trees, such as Beech, that does so well on the chalk here, and many Planes; these last being now, as they have been formerly, the favourite trees of the noble owners of Audley End. Eastward from the house is a long row of enormous Limes skirting a stone wall, a path to be enjoyed in June, with the bloom fully out and myriads of bees humming overhead, and grateful at other times in torrid heat or when easterly winds do blow. A few large Cedars of Lebanon are found in the gardens, their heavy far-stretching branches now supported with props, but still looking healthy in their old age, in spite of the amputations that have sometimes been found necessary after storms. Hedges of Yew abound, but they are very aged, and show their years unmistakably in bared lower branches and generally stunted growth. The chalky soil is inimical to most of the Coniferæ, so we do not find them largely used; they are short-lived generally on it.

On a hill, which boasts of a deeper soil, some nice specimens of Abies Nordmanniana, Thuia Lawsoniana, Juniperus virginiana, Sequoia, gigantea, Araucaria imbricata, were growing away in a healthy way. The flower garden properly so called, lies on the north side of the mansion, and faces an open court laid with turf, so that it is slightly removed from the walls.

An attempt is made to unite the flowers of old times, old-fashioned things, with the modern Pelargoniums, Violas, carpet bedding and beds of succulents, and arranged as they are by the head gardener, Mr. Vert, the effect is very good, and would be better in a less hot season. This year, however, some things became overblown at an early date, and others were hindered in developing their proper amount of foliage, and so left much ground bare—the effect of the excessive warmth of August and July.

The mixed herbaceous beds, that occupied four central positions in the parterre, were large of size, and were planted with Hyacinthus candicans, Gladioli, Fuchsias, Pentstemons, Tigridia pavonia and T. p. alba, Scabious, Stocks, Phygelius capensis, Campanulas, &c. The beds are likewise full—although we do not see many of them in August—of spring flowering bulbs and roots. This parterre is rather extensive, and is backed up with clumps of large shrubs that possess borders for flowers of large growing, less formal character. Here were seen many good varieties of single Dahlias, making a pretty back to the smaller subjects nearer the front of the borders. About 50,000 bedding and other plants are required annually for this flower garden. Scattered over the immense lawns are some trees seldom met with—the Kentucky Coffee tree, Gymnocladus canadensis, several Paulownia imperialis, fully grown, and at the time (August) flowering beautifully, and a tree of Alnus laciniata quite 50 feet in height, and of great spread of branches, the circumference of the bole at 1 foot above the soil being 14 feet 3 inches. The large Cedar of Lebanon which Lord Braybrook mentioned in his history of Audley End measured in November, 1834, at 1 foot from the soil, 12 feet 6 inches, and was 70 feet in height, having been planted in 1762. An Abies excelsa planted in 1774 measured 7 feet 9 inches, and was 60 feet high; a Platanus orientalis was 10 feet 10 inches, and 70 feet high, having been planted in 1770. The Cedar above mentioned is now increased to a girth of 17 feet. A common Oak planted in 1720 girthed in 1834, at 1 foot from the soil, 14 feet 4 inches, and was 60 feet high—a good growth for a little over a century. A red Cedar still standing measured 5 feet 4 inches in girth, was 35 feet high, having stood since 1783. Many trees still exist of considerable age, but many more have succumbed to storms and debility, and have been removed to make room for younger plants.

As might be supposed in a place of such long standing, the means provided for the supplying of vegetables, fruit, and flowers, are in proper harmony with its extensiveness. Well formed kitchen gardens of 8½ acres, in three compartments, all furnished with excellent walls for fruit culture, and these having a great variety of aspect, from the irregular form the gardens partake. The Apricot, Peach, Nectarine, and Plum, among stone fruit, do very well on this soil, and many good trees are to be found of these. Mr. Vert, the talented young gardener, is now doing his best to completely furnish the walls with the best of the old and new varieties, of all such kinds as require such assistance to ripen their fruit. The hardy fruit supplies are supplemented by an orchard-house 90 feet long by 20 feet wide. In this were found many kinds of Peaches, Nectarines, Plums, Figs, mostly in pots sunk in beds of soil or else planted out. Only the best sorts were seen, and all were well burdened with fruit.

An early vinery, containing plants of Black Hamburgh and Gros Maroc; a Muscat vinery, with Bowood, Ryton, and Alexandria Muscat Grapes; a late house, planted with Lady Downe's, Madresfield Court, and Black Alicante; and a cool greenhouse, planted with Black Hamburgh Grapes only, complete the tale of the Grape-houses. In addition are two Peach-houses of 36 feet in length each, and about 2600 Strawberries, of the usually approved kinds, are being grown.

The floral department receives much attention, as we saw about 600 well grown Chrysanthemums, in 250 varieties, in their flowering pots, the plants bushy, and of the healthiest appearance. These Mr. Vert will form into loosely trained natural bushes after moderate disbudding. Many Primula sinensis and P. alba plena; Salvias, such as gesneriflora, S. pseudo-coccinea, the Pine-apple perfumed sort; S. fulgens, S. Betheli, S. Bruanti, and S. Pitcherii, are grown for autumn and winter uses. A stove contained a collection of the pick of the Crotons and Dracænas, nice stuff, fit for all those varied uses in domestic decoration for which they are so suitable. A new stove to contain these plants, and others which now have to be accommodated in other structures, is being built. It is a pleasing, light building, having heated beds at the sides, and a bench in the centre, under which are two narrow troughs the length of the house, which, when kept full of water, will afford a ready means of watering. The different ranges of pits, fruit-rooms, Mushroom-houses, sheds, young men's domicile, &c., together with an extensive nursery and orchard, make the garden appointments both appropriate and very complete at Audley End.

COOL-HOUSE ONCIDIUMS.

THERE is no disguising the fact that several of the most beautiful sections of Oncidium are in most of our collections grown in too high a temperature, and that large numbers of them are annually lost in consequence. I find that many of our best growers, in spite of their repeated failures with these plants when grown in heat are very reluctant to give them a fair trial in a cool-house, and often when they do make the attempt, if the plants do not seem to be immediately benefited they are removed to the hothouse again, and when they ultimately depart this life the cause is often assigned to their short sojourn in a cold house. Such vacillating conduct is very prevalent among young Orchid amateurs, and it is to be deplored, for it most surely injures the plants and prevents the grower from gaining any experience likely to be of service to him. The proper way when a plant or section of plants is not thriving is, to carefully study the matter, form a reasonable judgment as to what is wrong with it, and what change would be beneficial; make that change, and leave the subject under treatment long enough in its new situation to be sure whether the movement was a good one or not. Oncidium Marshallianum, O. Forbesii, O. crispum, O. prætextum, O. curtum, O. Gardnerianum, O. præstans, O. dasytyle, and O. concolor, may be said to form one section, there

being a traceable affinity between their flowers when they are considered in the order in which I have placed the names, and the texture of all the species and the wrinkling of the bulbs is much the same in the kinds enumerated. Quantities of most of these plants are imported annually, the career of many of them after their arrival being very short: they are placed in heat, and seem to thrive remarkably well. In due course the strong pieces produce each a large and beautiful spike of flowers, which lasts in good order for six weeks or so, and after it is over the plant dwindles away. The smaller plants, which are not capable of producing flower-spikes, have not that effort to suffer for, and are slower to depart. Such plants when grown in heat, usually get covered with white-scale, and gradually decline, being very unsightly all the time. It has now become an established fact among a few of our best growers, that this beautiful section of Oncidium, when grown in a temperature of from 50° to 60° in winter, and in a light, airy part of the Odontoglossum-house in summer, is as easy to manage as could be desired, and that the plants thrive and keep clean in such a cool temperature. The whole of the plants of this section of Oncidium thrive best on blocks or rafts, or in shallow baskets, important features in their treatment being to keep them tolerably dry and cool all the time they are not rooting and growing, and not to leave the flower-spikes too long on the plants. They are beautiful objects in the dwelling-house when cut, and they last quite as long as if on the plants, and at the same time the plants are strengthened by their removal. If it is desired to keep the flowers in the Orchid-house, they can be cut and placed in large-mouthed closed jars of water, the spike being inserted through a hole in the cork.

Oncidium macranthum, O. serratum, and others of that section, I need say little about. After immense quantities of these had been killed with heat, O. macranthum and its allied species were found to be cold-house plants, and now it is a rare thing to find these in heat, or, being in a cold house, in an unhealth condition. These do well in pots in the Odontoglossum-house.

O. varicosum, O. bifolium, and O. holochrysum, forming another section, have not been so fortunate; the two last-named have become very rare, and I am sure that growing them too hot is the cause of it, for I have had both of the species named thrive well for years in a winter temperature of 45°—55°. But we notice the decline of O. bifolium and O. holochrysum because they have been but very little imported of late years, whereas O. varicosum has been plentifully received but in many cases only to be flowered well once and then to perish. I have no hesitation in saying that heat is the cause of the mortality, for wherever I have seen it grown with the Odontoglossum, or even a trifle warmer with the Lycastes and Zygopetalums, the specimens have been plump and clean and the pseudobulbs have increased in size every year. These three Oncidiums are cold-house plants and prefer to be grown on blocks or in baskets without much stuff about the roots and to be kept moderately dry when the growths are mature.

Oncidium bicolor, one of F. Sander & Co.'s recent introductions, is one of the most distinct and beautiful of Oncids; it is quite a cold Odontoglossum-house plant, is a very robust grower, and produces heavy spikes of bright yellow flowers, as beautiful as the best form of O. varicosum.

O. cucullatum and its varieties nubigenum, Phalænopsis, giganteum, and numerous others form a very pretty section with rose, white and crimson spotted flowers; they positively will not grow in heat, but they thrive in the most luxuriant manner when placed in the cold Odontoglossum-house. All the varieties grow well in pots in fibry peat, and require precisely the same treatment as Odontoglossum Alexandræ.

Other varieties which should be grown in a cool house are:—Oncidium incurvum, O. tigrinum, O. Batemani, O. cheirophorum, O. cruentum, O. longipes (Janeiriense), O. Limminghei, O. leucochilum, O. Harrisonianum, O. ornithorhynchum, O. phymatochilum, O. splendidum, O. superbiens, and O. zebrinum. All these in a cold house will give a much better result than they would in heat, because in the cool temperature they only attempt twelvemonths' work in a year, whereas in heat they outrun their strength, make their growth in too short a time, and have to endure a long and exhausting wait, or start another growth out of season, which cannot fail to cause a rapid decline. *James O'Brien.*

ARBORICULTURE IN SCOTLAND.

(*Continued from p.* 231).

Dundee, the scene of the forthcoming International Horticultural Show next week, can scarcely be left out of the programme, its busy streets and splendid factories bearing testimony that its merchants and traders are enterprising and prosperous. The name of Baxter will be ever held in veneration by its inhabitants, from the numerous benefits conferred on the town by the family, the Baxter Park being one of the many gifts to the public. It is well kept, and worthy of a visit; also the cemetery. The Tay bridge now building, and the ruins of the late bridge, will be objects of interest. On leaving Perth you cross the Tay, winding round the foot of the hill of Kinnoull; to the left is Kinfauns Castle, almost hidden from view by the numerous stately trees surrounding it. As you travel along the rail through the celebrated Carse of Gowrie, the hills on the left, well timbered, are the Sidlaw range; and in the Carse, between the rail and the hills, are many interesting residences and places, viz., Inchyva, Pitfour, Seggieden (Colonel Drummond Hay's), Fingask Castle—an interesting spot, with many ancient surroundings and fine old trees, well cared for by Mr. Loney, who has spent a long life here. Rossie Priory, the seat of Lord Kinnaird, midway between Inchture and Longforgan stations, is a fine, well timbered estate, the late earl taking great interest in arboriculture, in which he had the able assistance of Mr. Doig, who is well known in the district as taking a leading part in matters horticultural. The Carse of Gowrie at one time was celebrated for its orchards; these have nearly disappeared. The remains of one can be seen near Errol station. After Dundee has been visited, and before entering the Highlands, Glamis Castle, one of the oldest in Scotland, should be visited. There is a rail from Dundee to Forfar, and the most convenient way to reach it is to hire at Forfar, as the Castle is some 2 miles from Glamis station. The Earl of Strathmore is so well known as a patron of arboriculture and horticulture, being the President of the Dundee Horticultural Society, which, as we have said, holds its International Exhibition on September 11, 12, and 13. Mr. Crabbe is the forester, and Mr. George Johnston the gardener, well known as one of the most successful fruit growers of the present day. The vineries at Glamis at this season of the year, with their magnificent well finished bunches hanging so temptingly, are keenly criticised by the numerous visitors, his lordship kindly allowing any visitors to inspect the well kept gardens and grounds. The plantations and woods are numerous, and planting is largely and well carried on yearly. From Glamis the route should be to Dunkeld, *viâ* Stanley Junction. Dunkeld to the arboriculturist is one of the most interesting spots in the kingdom, as growing near the cathedral are two of the original Larches first planted in Great Britain by the Duke of Athole, figured in these columns Feb. 12, 1876, p. 209. Standing on the platform of the railway station, towering above, is Birnam Hill, now thickly covered with young trees. It must have been entirely stripped of every tree, if timbered as Shakespeare gives us to understand. Near the church of Old Dunkeld are some very fine trees, and there is one very old Oak, photographed by Messrs. J. Valentine & Son, of Dundee, and described as the last Oak of Birnam. Their photos of Scottish scenery are admirably executed and mounted, and should be purchased as *souvenirs*, especially the Perthshire scenes. Mr. Magnus Jackson, of Perth, has also a large number of photos of old and celebrated trees of the Perthshire estates, making this a special study.

Mr. John McGregor, forester to the Duke of Athole, who resides at Ladywell, Dunkeld, should be visited if any information is required as to what to see on the Athole estates, and for information as to the enormous quantities of young trees planted on the estates and ground covered, consult Mr. Hunter's *Woods and Forests of Perthshire;* this should be made a pocket companion for reference whilst visiting the numerous places mentioned. Mr. Fairgreave, gardener to the Duchess of Athole, should also be visited, as there are some very fine old trees in addition to two Larches which are near the residence of the Duchess; the kitchen garden should also be seen, being skilfully designed, and in the cathedral is an effigy of the "Wolf of Badenoch," the destroyer of one of the most beautiful buildings in Scotland, Elgin Cathedral.

Murthly Castle, the residence of Sir William Douglas Stewart, Bart., is about 3 miles from Dunkeld. There are on this domain the finest specimens and largest quantity of the newer and choicer Californian Conifers to be found in the North of Scotland. Any one interested in arboriculture by calling at the Castle, and sending in his card, and asking permission, will at once be allowed to inspect the estate. If possible, permission would be better obtained several days beforehand, when no doubt a guide would be at hand to show the most important objects. The Douglas Firs are here in abundance—we might almost say by the mile, of large size, growing very rapidly, and they have for many years produced large quantities of cones, from which seeds producing hundreds of thousands of young plants have been obtained. Leading from the Castle to the chapel is an avenue of very fine Araucaria imbricata. The last time we saw them many of them were producing cones freely; we are afraid, however, the severe winters of three or four years since may have injured them, but we hope not. Near to these are a quantity of Lawson's Cypress, &c. Memory fails to remember the numerous specimens of Conifers and other trees, and a long time could be spent here admiring the immense collection of beautiful trees, with which this fine estate is furnished. The visitor will leave Murthly feeling that only a small portion of its beauties can be seen in one visit. The new castle can be seen distinctly from the rail some half mile from the front entrance.

Leaving Murthly and Dunkeld the rail passes through finely wooded scenery, Ballinling is the junction for Aberfeldy and Taymouth Castle, a princely residence, and if time permitted a day could be well spent, the scenery being very fine from Ballinling to Taymouth. Our next halting place will be Pitlochry; a "machine" should be hired and a drive taken through the Pass of Killiecrankie—the scene of many a fray—crossing the bridge over the Tilt, and on to the Queen's View, from whence you obtain a beautiful view of Loch Tummel, and in the distance Schehallion towers. Upwards and beyond this is Loch Rannoch, some 16 miles distant. And all on the shore of Loch Rannoch is the residence of — Wentworth, Esq., who has planted largely on the moor and mountain sides. Dunalaistair, lately owned by General Macdonald but recently sold, is another fine estate. We should advise driving through the Pass of Killiecrankie to Blair Athole; numerous fine Birches will be seen about the Pass.

Blair Athole is the residence of the Duke of Athole; the Castle of Blair stands in what in the South we should term a large park, and little attempt at shrubberies or dressed grounds has been made, as they would not be in keeping with the surroundings. We are now in the midst of the immense tracts of plantations that have been made by the present Duke and his two predecessors; before this the moors, hills, and mountain sides were bare of trees. Burns, on a visit he paid to the Duke of Athole of that day, laments the absence of trees in his poem entitled, "The Humble Petition of Bruarwater," and addressed to the Duke: two verses will show the meaning of the poem—

"Would then my noble master please
To grant my highest wishes,
He'll shade my banks wi' tow'ring trees,
And bonny spreading bushes;
Delighted doubly, then, my lord,
You'll wander on my banks,
And listen mony a grateful bird
Return you tuneful thanks.

* * *

"Let lofty Firs, and Ashes cool,
My lowly banks o'erspread,
And view, deep-bending in the pool,
Their shadows' watery bed!
Let fragrant Birks in Woodbines drest
My craggy cliffs adorn;
And, for the little songsters' rest,
The close embow'ring Thorn."

Taking the rail at Blair Athole, you climb gradually up an incline through the mountain scenery, passing "Dalnaspidal" station (where trains are often snowed up in winter) to Kingussie. Some 12 miles from here is the stronghold of Cluny (Macpherson of Cluny), where still the old Highland manners and customs are kept up. From Kingussie to Boat of Garden Junction, changing for Grantown on the Speyside rail, where the Earl of Seafield owns an immense track of land, the residence being Castle Grant. The cultivation of timber is carried on here in a systematic manner, under the superintendence of

Mr. John Grant Thomson, well known in the annals of forestry. Taking the rail again to Keith Junction, you change for Fochabers. The station is about 2 miles from the town—a 'bus usually meets all trains. Gordon Castle, one of the seats of the Duke of Richmond and Gordon, situate on the Spey, one of the grandest rivers in Scotland, is now the object of interest; all arboricultural and horticultural affairs are entrusted to Mr. Webster, who will be found most kind, agreeable and communicative on all subjects connected with his profession, in which he has spent a long and zealous life; he will be able to give any information of the neighbourhood and also of the plantations, forests, &c., on the estate. Burns, who visited here, and wrote a poem highly complimentary, ends with:—

"Mildly here, without control,
Nature reigns and rules the whole;
In that sober pensive mood,
Dearest to the feeling soul,
She plants the forests, pours the flood;
Life's poor day I'll musing rave,
And find at night a sheltering cave,
Where waters flow and wild woods wave,
By bonny Castle Gordon."

(*To be continued.*)

VIOLETS.

THESE charmingly sweet flowers for the next six weeks should be growing apace if they have been planted out at the right time and under proper conditions. During such excessively hot weather as we have experienced they have not made such headway as is desirable, especially in positions much exposed. Happy have those been whose plants have enjoyed a position shaded from the hottest sunshine. I do not believe in anything like absolute shade for Violets, but I am sure generally they, and especially some of the kinds, are greatly benefited if planted in a position which is shaded during mid-day. An important point in their culture is an abundance of thoroughly decayed manure. I know some very successful Violet growers who cultivate Marie Louise and Neapolitan in very liberally manured ground, the manure consisting of three barrowloads of hotbed manure and one of leaf-soil. This is well worked under the roots, and the result may be anticipated. If this part of the business is well attended to, and abundance of water given in dry weather, what may be considered a bad position will not be of material importance. It is useless to attempt their culture unless they are well watered in dry weather; the result of drought is to prevent growth development and foster the very troublesome red-spider—a pest always ready to denude the foliage of its greenery; war to the death should be waged against it by constant syringing night and morning and during the day when clouded, and if necessary to secure its eradication employ one of the now numerous specifics, in addition to clean water. All runners should be removed from the crowns as fast as they make an appearance if the latter are to make anything like good growth, so that all the material absorbed by the roots may be assimilated for the benefit of the crowns alone. If such runners are required they can be put in a shady place in sandy soil as cuttings, and they will come in very useful for planting out next season—in the case of new varieties, of course all such runners will be reserved. I believe the best way of increasing Violets is by cuttings; these make the best crowns. The single varieties, as a rule, make excellent plants in the same season if the cuttings are put in a cold frame early in the season, say in March or April; but, as a rule, the double kinds take two seasons to produce fully developed crowns.

The method of bedding varies in different gardens; usually the plants are arranged singly in lines, but I prefer the following plan, which is practised by some of the best Kentish growers, viz., arranging the crowns in fives, one in the centre, the others at four angles, forming a square, as close together as is deemed expedient to allow the full growth of the crowns; thus arranged each five form a good clump by the autumn, which may be lifted and potted intact or planted out in the frame. Excellent crowns may be formed thus if the runners are kept pinched off, and I think the arrangement is economical as regards mulching and watering, also with manuring. *Apropos* of mulching I might just hint how important this is in the culture of Violets; a surfacing of manure gently assists them in keeping the ground cool and moist, and thus reducing the necessity of watering.

The supply of Violet flowers in winter is of paramount importance to an increasing number of gardeners. I know of several employers who always look for a small bouquet of them every morning through the winter to be found when looked for upon the breakfast table; one, a noble one, too, in particular I call to mind, who has this as his only "fad"—a sweet one by the way; but look out if the Violets are missing. After recording repeated experiments of wintering in pots and planted out I must give my opinion in favour of the latter. I think the best possible position for flowering Violets through the winter is a close pit facing south, with a bed of rich loam raised very near the glass, in which they should be planted. This pit should have a 2-inch flow and return pipe running round at the top inside to keep out frost when necessary, and prevent damping; it is not desirable to apply the artificial heat when the temperature is sufficiently high outside to keep the plants active unless there are signs of excessive dampness in the frame. Thus treated an abundant and uninterrupted supply of flowers will be enjoyed, and one can dispense with the annoying style of matting up every night, and frequently through many days, which has so frequently to be resorted to when no artificial heat is provided. Of course, potting-up has its advantages, the chief of which is the portableness of the pots; they can be arranged upon shelves in the greenhouse, or placed near the glass in additional heat, or when nicely in flower they can be removed from the pit to the conservatory stage for the sake of the delicious perfume.

The number of varieties is now large, but none excel for winter blooming the old Neapolitan and Marie Louise, the latter undoubtedly carries the palm, which it has a right to do, yet still Neapolitan is an excellent variety, and for some reasons does better in certain districts than Marie Louise. The new charming white variety of Neapolitan under the name of Comte de Brazza has not yet been fully tested; Mr. Ware, of Tottenham, claims for it all those good qualities which have made the type a favourite, and certainly that grower has produced some good flowers. Such a pure white variety with the characteristics of Neapolitan is a great desideratum, for the vaunted Belle de Chatenay is given up in "despair." Victoria Regina is a very fine single variety, superior in my opinion to the old Czar, although the latter is extensively grown, both in pots and beds; some plants of Victoria did remarkably well with me last winter. *Viola.*

BOWOOD, CALNE, WILTS.

THE fine grounds of this extensive demesne were thrown open to the public on the occasion of the recent exhibition of the Calne Horticultural Society, and thousands of persons from the surrounding district availed themselves of the opportunity to inspect the same. Owing to the absence of the Marquis of Lansdowne at the seat of Dominion, in Canada, the terrace gardens are not kept up in their wonted style; but the fruit and kitchen gardens, and the extensive pleasure grounds are well maintained by Mr. Phipps, the present gardener, and their arboreal features are of a very interesting character. The spacious park and outlying country surrounding the mansion is somewhat remarkable for its undulating surface, presenting a series of gently rising hills and deep valleys, diversified by an abundance of wood and cultivated land; but it is within the park itself this beautiful part of Wiltshire is seen to the best advantage. There is a lake of considerable extent occupying the valley below the mansion, and beyond it rises wood-crowned heights, embellished with many trees of fine proportions.

It is nearly 120 years ago that the grounds were laid out by an ancestor of the present Marquis, who it is satisfactory to know takes a deep and abiding interest in the place. There are many trees—Elm, Oak, and Beech, being numerous and very fine; Hemlock Spruce, of great age and proportions; some of the largest Stone Pines in England; splendid groups of Pinasters, Tulip trees of large size, and majestic Cedars of Lebanon; there are also Cypresses, Hollies, evergreen Oaks; indeed, lovers of trees can find very much to admire at Bowood.

The Pinetum, with its large collection of species and varieties, is now finely developed; one can only regret that so many fine specimens have become so crowded. In the sandy loam all appear to flourish. The most notable among them are Douglas Firs, a truly magnificent specimen of the glaucous Cedrus atlantica, very fine Abies nobilis, coning with remarkable freedom; Cryptomeria japonica, Sequoia gigantea, Araucaria imbricata, tall Cupressus of many types; indeed, all appear to flourish as if quite at home.

The walled-in fruit garden has within the last two or three years been entirely planted with young wall trees, that are growing into good size, and are doing well. Some of the old plant and fruit-houses are being pulled down, and are to be rebuilt. Other improvements are in contemplation, and by the time the term of office as Governor-General of Canada by Lord Lansdowne has expired, he will be able to return to his Wiltshire seat, and find that during his absence much has been done of a character to maintain its old horticultural traditions in the days when the late Mr. John Spencer made Bowood so famous throughout the country. *R. D.*

RHODODENDRON LEPIDOTUM.

ACCORDING to the historian of the Sikkim Rhododendrons, this plant affords a notable instance of the great variability of these plants. When first studying the species in their native mountains, says Sir Joseph Hooker, it appeared to him easy to distinguish, as two well marked allied species, the plant described as R. obovatum, with dark purple flowers and short leaves, and that described by him as R. salignum with lanceolate leaves and golden-yellow flowers. Further investigation led to the conclusion that neither the form and size of the leaf nor the colour of the corolla afforded any available diagnostic character, for though he never found R. salignum with purple flowers he found plenty of R. lepidotum with golden-yellow ones. A third subject of variation is the number of stamens, which in almost all the wild specimens of R. lepidotum are eight, but which in the var. obovatum, figured in the *Botanical Magazine*, t. 6450, there are ten. In the same work, at t. 4657, purple and yellow-flowered varieties are figured; and at t. 4802 a white variety is illustrated. The specimen here figured (fig. 55) we received in the course of the summer from Mr. Mangles, whose recent death leaves such a sad void in horticultural circles. In this case the flowers were purplish, deeply spotted, and with ten stamens. In any case, as will be seen from our illustration, the varieties are not only well worth cultivation, but are improved by the production of denser trusses of flowers. To what degree the present species is hardy in this country we are not able to say, but as the shrub grows at an elevation of from 8000 to 15,000 feet, it is clear that the slight amount of protection which may be necessary is not thrown away.

COLONIAL NOTES.

SUGAR PLANTING IN OUR COLONIES.—The controversies which have appeared in the *Times* on "The Labour Question in the Pacific" and "The Condition of the West Indies" should be read together, and if the various arguments which have been advanced are well weighed they should serve to place the planting interest, not only in the West Indies, but in Mauritius, Australia, and Natal, on a far better footing than it has been for years past. Planters are now beginning to know—if, indeed, they are not already aware—with what they will have to contend in the future. The beet-sugar industry still thrives, and will continue to thrive while Continental Governments are willing to place a bounty, not only on the export but on the manufacture; and it has been pretty well demonstrated of late that no Liberal or Conservative Administration would dare to put on a duty to countervail thal bounty. But because English statesmen are not prepared to alter the Free Trade policy to which this country is pledged, is that any reason why the planters in our outlying tropical possessions should be brought to ruin? The answer given by all those who know the enterprising character of our colonists and the vast resources of our colonial empire is, Decidedly not.

The West Indies undoubtedly feel the present depression in the sugar trade more than any other of our tropical colonies. But this is because the planters, hitherto enjoying every luxury, never anticipated such a decline, and have up to the present hardly been able to adapt themselves to the altered circumstances. But we are glad to say that many are beginning to see a silver lining to the dark cloud which has for some time past been hovering over them. Instead of sitting with their arms folded, they have determined to take every means to uphold the reputation of cane-

sugar in the London market. That it can be so upheld is evidenced by the fact that Demerara crystals still obtain the highest price here; and that a tiny consignment of fourteen pockets of Australian sugar from Sydney realised in the London market, on August 22, 18*s.* per cwt. This, we believe, is the first consignment of sugar received from New South Wales. Queensland has occasionally sent a few bags to Mincing Lane, but we believe the highest price hitherto obtainable for Australian sugar in London has been 11*s.* per cwt.

We often hear people say that the times for making money out of sugar in the colonies are over. There never was a greater fallacy. The consumption of sugar is now treble what it was a few years ago, and it is bound to go on increasing. In Mauritius, in Australia, and in Natal, increased attention has of late years been paid to the cultivation of sugar, with the result that all three have been largely benefited. In Queensland, in fact, sugar has risen to be the third industry of the colony, and is the only one which has induced to any extent a permanent settlement on the land. Over 20,000 tons were produced last year, the average gross value of which was taken at £25 per ton, including freight, insurance, storage, commission, and charges, while the average nett value to the planter—including all classes of sugars, and the average cost of production, taking good and bad seasons into account, and good, bad, and indifferent plantations—was £15 per ton. The yield in Natal for 1882 was 8007 tons, valued at £200,000. In both countries the returns, it is believed, would have been still greater if more coloured labour had been available. Especially is this the case in regard to Queensland, and it is hoped that the letters which have appeared in the *Times* on the coloured labour question will lead to the establishment in that colony of an effective and well-controlled system of coolie labour from India. In 1882—the last return to hand—454,753 acres were taken up on the northern coast for tropical agriculture. These lands are fit for no other purpose, and planters are anxiously awaiting to develope them by means of coloured labour and the introduction of the most modern machinery.

Looking at the sugar interest in our colonies as a whole, it is evident that the planters do not intend to hand over the sugar trade voluntarily to the Beet manufacturers, but mean to do all in their power to fight them in the different markets of the world. And they are right. There is plenty of money, if not large fortunes, to be made out of the sugar industry yet, and in the failure of one of the largest Austrian Beetroot firms, and the improvement which has set in in the London market, we believe we see the dawn of a new era of prosperity for our sugar-producing colonies. *From the "European Mail," August* 29.



FIG. 55.—RHODODENDRON LEPIDOTUM: FLOWERS PURPLISH. (SEE P. 296.)

FORESTRY EXHIBITION.

(*Continued from p.* 264.)

PERHAPS the most lasting impression left by the Forestry Exhibition will in some cases be the illustrations it gives of the beauty to be found in blocks of wood. Usually the beauty of the carving, inlaying, or artistic form, divides attention with that of the material itself: but in a slab of polished wood this beauty of texture, marking, colour, and often marble-like gloss, asserts itself; and seems but to add to the pleasure to be found afterwards in specimens of wood-work, whether for use or merely for ornament. As those who are limited to a hurried visit or two might easily, amongst the many things to be seen, miss some of the best specimens of wood, as regards mere beauty, it may possibly be of interest to mention a few of the more striking examples, scattered as they necessarily are, here and there, throughout the building.

The Redwood exhibits are sure to attract attention, as the immense section of the trunk of Sequoia sempervirens is one of the most striking objects to be seen on entering the nave; and close to it is a small table of singular beauty, with a polish like that of marble, and six polished slabs which give a good idea of the great variety to be found in the wood of this tree; which is also well shown in the panelling and cabinet (stand 13) in the adjoining south transept. On the north side of the nave, not far off, are some specimens of Oak veneers from the old Caledonian Forest. In beautiful marking and brilliant polish, these specimens compare favourably with any of the foreign woods. A large table in one of the north transepts (at the right hand entering from the nave) contains specimens of 117 British grown woods; there are over 9000 different pieces of wood. It is an interesting specimen of inlaid work.

Amongst the Cape of Good Hope exhibits (section 7) there are some woods of great beauty; amongst others the Essen-wood, Eckebergia capensis; Karree-wood, Rhus viminalis; Black Iron-wood, Olea laurifolia; "Ferblantz," a curiously grained wood; Stink-wood, Oreodaphne bullata, very dark; and Podocarpus elongata, a light yellow wood.

In the Indian section, one slab of Calophyllum inophyllum (No. 10) is 11 feet 4 inches by 4 feet 10½ inches, and 3¾ inches thick. This splendid specimen is near the north-east corner of the Indian transept. In the same corner are fine specimens from the Andaman and Nicobar Islands of the deep red "Padowk," Pterocarpus indicus. The polished slabs against the wall, and large blocks in the adjoining stand, show well its varied and very beautiful colouring. There are also specimens from the same islands of the curious "Marble-wood," Diospyros quaesita.

In stand No. 38, from Ceylon, are three Cocoa-nut boards, not large, but very interesting as specimens of Monocotyledonous stems in longitudinal and transverse sections.

The Teak logs near the upper end of the nave are amongst the most remarkable in the Exhibition, one log being of immense length. The beauty of the wood in transverse section is well shown at the upper end of one of these logs, and the varied beauty of Teak-wood is also seen to great perfection in a very high door (in the same part of the nave).

The Rock Maple, Acer saccharinum, is one of the most effective light woods. There are good specimens of it from New Brunswick, and also of the white Maple, Acer dasycarpum. Of the latter the specimens are small, but the shaded sheen through them is beautiful, and also their satin-like gloss.

In the Japanese section most specimens are unpolished, so that allowance must be made in judging of their beauty, as compared with the highly polished specimens of wood to be found in most of the other sections. But besides being one of the most interesting in the Exhibition this collection of different woods contains some of remarkable beauty. Acer palmatum, in the south transept, almost equals the American Rock Maple in the marking of the wood; and in the north-west corner of the north transept are some of the best specimens of slabs of wood in the whole Exhibition, including Sophora japonica and Phellopteris amurense, strongly resembling each other; Fraxinus mandshurica, a light satin-like wood; the Japanese Zelkowa, which looks as if it would take a fine orange tint when polished; also a curiously marked specimen of Cryptomeria japonica, but differing much in appearance from the fine section of it on the opposite stand. On the same side (class No. 4) is Cinnamomum camphora, a light-coloured wood, beautifully marked. In this north transept are various collections of small pieces of wood, the most compact being a collection in little boxes; each specimen is from ¼ inch to ½ inch thick, and 3 inches by 2 inches in size, placed side by side, so that each specimen can be taken out without displacing the others. Another collection is arranged in boxes in the same way, but the pieces of wood are about twice the size and 1 inch thick, with the bark left on at one end. A third collection is formed of triangular sections of small stems, from pith to bark about 2 inches each way, and giving about one-fourth of the circumference of the stem with the bark left on. This shows well the radial and transverse sections, and by having some specimens cut so as to show the tangential section instead of the bark (as duplicate specimens) this plan would be one of the most comprehensive, as one of the most compact, for small collections. In the same transept is a cylinder, formed of slabs of wood, and turned by handles, a convenient way of arranging a collection of specimens; each section is about 6 inches by 8 inches. Amongst the ninety-six specimens there are a few duplicates, where required, to show marked differences in the same wood.

In the section of the building parallel to the nave at the north side are some specimens of wood of much beauty. A large slab of walnut-wood, with a sideboard made from the same tree, from Otterston in Fifeshire (stand 181), shows how well this wood can be grown in Scotland. Nearly opposite, in stand 190 (at the end of the British Guiana transept), are some very curious specimens of veneer, exhibited by L. Mongenot, Paris, most curious of all being a roll of veneer of bird's-eye Maple, 340 feet long. There is a beautiful specimen of modern wood carving in some hall furniture, stand 177. A sideboard, No. 188, is made of a very beautiful piece of wood.

The octagon top for a small table, hung on the wall of the Balmoral *châlet*, shows the beauty of marking to be found in home-grown Conifers, as does the fitting up of the *châlet* itself. *C. M. Owen.*

ANTIDOTES AND DECOYS FOR WIREWORM AMONG CARROTS.

IN some gardens the pest of wireworm attains such strength as to render a crop of Carrots all but impossible. Hardly are they out of the seedleaf till this pest seizes upon them and worries them all along the lines of growth, till by the time the Carrots ought to be fit for use they are skeletonised into mere perforated ghosts of Carrots by the ravages of these pests. On such soils dressings of soot, picklings with salt, or sprinklings of paraffin oil seem alike unavailing. The more heavily the land is dressed with antidotes the more the wireworm seems to thrive. In not a few cases the wireworm has vanquished the cultivator, and the Carrot crops have to be given up. Before doing so, it would be worth while to try our decoys and distasteful mixtures.

By planting a short-topped Potato here and there, such as the old Walnut-leaved Kidney, among the Carrots, the wireworm will crowd down upon the former, and often leave the Carrots alone. The Potatos may be lifted soon after new Potatos are formed, and the whole, with their stock of wireworm, taken away bodily. Or the worms may be destroyed, and the Potatos returned to the soil among the Carrots, to act as fresh decoys, and be consumed by the worms. Or, better still, the Potatos may be buried as baits, the places where they are deposited marked by a small stake; the bulb examined twice a week, all the wireworms found in or near the Potatos destroyed, and the baits again deposited in fresh places. It is astonishing how much may be done in this way to reduce the numbers, and sometimes even to eradicate this troublesome pest. Still the labour is very considerable, and the patience and perseverance greater than many can command. Hence a better method consists in growing the wireworms out with a crop so distasteful to them that they either decamp or depart, and so far as the Carrot crop is concerned it really matters little which. It is found that Onions are such a crop, and hence in gardens where wireworms abound Carrots should invariably follow Onions. As the latter enjoy rich ground, a crop of Carrots may be taken after Onions without any additional manuring or preparation but that of deep digging or trenching in the autumn. It is found that Onions and Carrots, though both what are termed root crops, are so essentially different and distinct that this rotation is profitable as well as an antidote to wireworm.

When the latter are very bad, however, it is good practice to sow a few Onions among the Carrots; or, better still, plant a few Shallots or Garlic, as in these the Onion flavour, so to speak, is more fully developed, and they seem to make the soil more Oniony than Onions themselves. The plan answers well, the two crops needing similar treatment, and it not seldom succeeds in growing out the wireworm when all attempts at forcibly pickling or burning it out have failed. *Agricultural Economist.*

MELVILLE CASTLE,

THE seat of Viscount Melville, is delightfully situated in a level park on the North Esk, and about a mile below the village of Lasswade, which from its position on both sides of the river, its handsome church on a height to the north of the stream—its neat cottages and gardens amidst a profusion and luxuriant vegatation of ancient trees, renders this village one of the most picturesque in Scotland. Entering by the Lasswade gate the avenue commands extensive views of the valley, with its steep and rocky banks clothed with thriving plantations and covered everywhere with an undergrowth of Pteris aquilina.

The Castle is approached by three other avenues, all of which converge on the north bank of the river at a point some distance above the Castle, from which it rapidly descends towards the bed of the stream, and the park, in which the Castle stands, a neat and handsome structure, surrounded in the distance amphitheatre-like with luxuriant umbrageous trees which clothe the rocky declivities and undulated knolls on both sides of the stream. The trees consist principally of Oak, Lime, Horse Chestnut, and Beech, and other deciduous species, and from their great size must be very old. One old Oak, called "Queen Mary's Oak," is said to belong to the great Caledonian Forest, which extended from Dalkeith Park to Hamilton, and under its branches it is said Rizzio played the harp to the unfortunate Mary Queen of Scots. Although the sombre top of a Scotch Pine may be seen here and there, coniferous trees of more recent introduction have not been extensively planted until quite recently. One good specimen of Wellingtonia stands in the park east of the Castle, and two or three specimens of the Cedar of Lebanon; to the right front there is a good specimen of Araucaria between large clumps of Rhododendrons, &c.; to the west, recently planted by the Hon. Henry Dundas, is a good collection of the various ornamental species of Cupressus, Retinospora, Thuiopsis, Thuia gigantea, and Abies, such as A. nobilis, A. Nordmanniana, A. grandis, for single specimens, and are forming nice healthy compact plants; the north and south portions of the park are connected by two iron bridges across the Esk. At some distance to the east and west of the Castle, returning by the approach to where the various avenues converge, and at a considerable elevation above the park, is the entrance to the flower garden, bounded on the south by a sunk fence and good Holly hedge, neatly trimmed. On either side of the entrance gate is a small rockery, covered with alpine plants, with a broad border of ornamental shrubs, principally Rhododendrons, in front of which there is a broad walk, extending round the whole flower garden, which, with the exception of a central design in Box and a long ribbon border on the north side, is entirely in grass, the beds large, and not overcrowded; the whole has a highly artistic effect. Some of the beds along the centre were planted rather widely with the usual bedding stuff, and filled in with Gladioli, Lobelia fulgens, Hyacinthus candicans, and a few dwarf early-flowering Chrysanthemums, which combination forms a pleasing variety and tends to take off that glare so inseparable from flower gardens in general. The ribbon border, 150 yards long, is in fine flower and effective of its kind, the various colours standing distinct, and the ground covered with healthy foliage, and the whole is as neat as a new pin.

An entrance to the kitchen garden is obtained at each end of the flower garden, the bottom wall forming the northern boundary of it. The gates being so wide apart is an improvement on the ordinary way of having a central gate, as it gives the flower garden a more expansive appearance, and especially the ribbon border. The kitchen garden, some 4 acres in extent, is surrounded with high walls covered with fruit trees,

and subdivided in the usual way, and filled with the usual crops, in excellent condition. The border, continuous round the whole garden, is filled with herbaceous and florists' flowers for cutting. The top border, 12 feet broad, extending across the garden, is filled entirely with herbaceous plants, and is one of the principal features of the place, which has long been famous for its collection of hardy plants. Prominent at this season along the back rows were clumps of Lilies, such as L. testaceum, with bright heads of nankeen flowers; L. chalcedonicum, with its bright scarlet massive heads; L. candidum, with noble spikes of pure white, interspersed at intervals along the border, and lighting up the whole. Alternating with these are Spiræa palmata, S. venusta, which flowers freely here, Galega officinalis alba, covered with its neat racemes of pure white flowers; Monarda didyma, which from its deep crimson heads should be more extensively cultivated. Œnothera Fraseri; Œ. riparia, both yellow and effective; Œ. marginata, which opens its large pure white sweet scented flowers in the evening, should be in every garden; Chelone barbata, with tall spikes of Pentstemon-like flowers, and bright scarlet Alströmerias flower freely, and are found to be quite hardy. Lychnis viscaria plena with bright rose-colour spikes, L. chalcedonica plena, tall with scarlet heads, with numerous varieties of Delphiniums in various shades of blue. The front row is all dwarf, and contains some choice things which thrive remarkably well without the aid of rock or stone. Among the flowering kinds at this season were Campanula isophylla and C. isophylla alba, C. rotundifolia alba, C. garganica, Mimulus cupreus Brilliant, a bright showy variety; Linaria pallida, and Androsace lanuginosa.

The early summer as well as the spring flowering plants are past, but the border is so arranged for general effect that when one plant goes out of flower another is ready to take its place. The plants are not over-tied but left to form neat compact bushes, healthy and clean, as is everything else about the place. Facing this border and at the top of the garden is a long range of hothouses with a large span-roofed plant-house in the centre; on either side are long ranges of lean-to vineries and Peach-houses, the latter doing better here than anywhere in the Lothians. Some of the earlier houses were cut, but sufficient were left to show how well they thrive, the plants being, indeed, pictures of health. The late vinery, which is filled with Lady Downe's, Alicantes, and a few Gros Colmar, is 90 feet long, and has a fine crop just colouring, and is to those interested in fruit culture under glass worth seeing. The subsoil is gravelly, and Mr. Mackinnon attributes his undoubted success to the annual top-dressing with rotten manure and the copious supplies of water he gives to Vine and Peach alike. Along the paths is a continuous row of large Gloxinias in a mass of bloom, which helps to light up the fruit house. The plant-house or conservatory, the roof of which is covered with Tacsonias and Fuchsias grown as climbers, contains, besides good specimens of Camellias, large Palms, Dracænas, Yuccas, and a remarkable fine plant of Cordyline indivisa and Dasylirion longifolium.

Behind the north wall is a 2-acre space laid out in grass, with a plant-stove and Fern-house in the centre. In the stove, besides the usual occupants, is a nice healthy lot of Orchids, the roof being covered with Allamanda Hendersoni, Stephanotis, and Passiflora racemosa. In the Fern-house are good specimens of Adiantums, Davallias, Gynogrammas, &c., interspersed with the various kinds of Selaginella. To the east of the stove are long ranges of pits for bedding plants, &c., with a large gravel space in front for holding Chrysanthemums, &c., during the growing season. Between the stove and Mr. Mackinnon's house, which is in the north-west corner, is a grass space, in which beds are cut and filled with Carnations and a good collection of H.P. Roses. A raised border behind is filled with Tea Roses, which, notwithstanding their tender nature, are doing well, and flowering profusely. Behind this border is a range of lean-to houses, one filled with Heaths and other hard-wooded plants, among which were good examples of Boronia elatior, Pimeleas, Pleromas, Tetratheca, &c. Among the Heaths, which are healthy, were good plants of Erica eximia superba, E. Lindleyana, E. Aitoni superba, E. persoluta alba, 4 feet through; and E. Bowieana. Along the front of the stage, quite at home, were nice pots and pans of Nertera depressa covered with its neat coral-red berries, and also Primula obconica and P. floribunda, both of which flower continuously. Leaving the garden, which does credit to Mr. Mackinnon's management, and following the north bank of the Esk, by an approach of over 1 mile in length, some splendid examples of Oak and Beech are to be seen with an undergrowth of green Bracken in all the gullies towards the river, through which vistas good views of the scenery are obtained. The Edinburgh and Dalkeith roads are reached through a handsome gateway. *Robertson Munro, Abercorn Nursery, Mid-Lothian.*

BULBS.

VARIETIES IN BULBS.—There are many different sorts of bulbs, as any one may see who compares that of an Onion or a Hyacinth with that of a White Lily, that of a Snowdrop or a Tulip with that of an Amaryllis. It forms no part of our plan to describe all these varieties in detail, though we strongly recommend the young gardener to examine the mode of growth of bulbs of various kinds at various stages, as a valuable means of gaining an insight into the course of plant-life. Here we can only point out the main circumstances upon which the variations depend, and suggest some of the inferences that may be drawn as to the nature of bulbs, the work they do, and their appropriate treatment. Speaking generally, they consist of a number of leaf-scales, enclosing or wrapping round a central growing point; and so far they exactly correspond with the buds. Like many buds, they contain not only the rudiments of leaves, but the beginnings of the flowers; like many buds also, they often contain the germ, not only of the next season's growth, but of that of subsequent ones also; or, at least, they contain growing points of different generations.

The individuality or independence which has been already mentioned as one of the characteristics of ordinary buds, is much more marked in that modification of a bud which we call a bulb. Indeed, a bulb, as a rule, constitutes the whole of the plant; but it may be merely the terminal bud of an underground stem or branch, and hence, though there is usually no difficulty in defining a bulb, there are sometimes cases in which it is difficult or impossible to draw a line of demarcation between it and other structures like buds—tubers, root-stocks, &c. The differences between bulbs and buds depend on the fact that while the bud is usually one of many connected together by a common branch or stem, the bulb itself may, and often does, constitute the entire plant, and for the most part, though not exclusively, it is subterranean in its mode of growth.

From our present point of view, however, the great distinction lies in the different nature of the scales. The bud-scales, as we have seen, serve to protect the young growing point within from undue cooling or radiation, and from drying up by loss of moisture from the interior; but they do not serve as store-organs, and the growing point, as it lengthens into a shoot, derives little or none of its supplies of water or food from the scales. Their purpose fulfilled, they are cast off, and are of no further use, unless it be to restore to the soil some of the earthy ingredients derived from it, and of which they contain considerable quantities. In the case of the bulb it is quite different—whether the scales wrap round the growing point, as in the Onion or the Hyacinth, or whether each individual scale only covers a portion of the bulb, as in the Lily, just as a single tile or slate covers its portion of the roof. In both cases the scales are filled with food accumulated in the past season, and intended for use in a future one, after an interval of rest. When a Hyacinth or other bulb commences to grow it uses the food stored up in its own tissues, and does not—for some time, at least—derive much, if any, nourishment (save perhaps water) from the water or soil in which it is placed. A due supply of water may be necessary to help in the solution of the nutritive matter and insure its easy transport to the points where it is most needed. It is this necessity for an abundant supply of water which leads gardeners to recommend the bulbs intended to be grown in glasses to be put in a dark place, and in a warm cupboard, before they are exposed to the light. The object of this is to aid the development of the roots, and by their means to secure a supply of water to facilitate the subsequent steady uninterrupted growth of the leaves and of the flower-stalk.

So far as the flowers are concerned, their growth depends more upon the amount of food stored up in the bulb the season previous than it does upon any supplies obtained this present season.

The production of flowers is, however, not the only work the bulb has to accomplish. New bulbs have to be formed, and fresh stores accumulated in them, and to fulfil these ends aright leaf-action must be proportionately vigorous. This subject of leaf-action will have to be treated of further on; we allude to the subject now incidentally to protest against the barbarous practice of some "jobbing" gardeners ignorant of their craft, and of amateurs exercising no thought, of cutting off the foliage from the bulbs—or, what comes to the same thing, from the "corms" of their Crocuses. Every leaf should be left on so long as it is capable of doing efficient work. When its work is coming to an end—when the sere and yellow leaf appears—then is the time to remove it. This is the indication that the bulb is going to rest, and that rest may effectually be secured by "lifting,"—*i.e.*, digging up—the bulbs, drying them off, and keeping them as the Dutch bulb-growers do, in a dry place, under a uniform temperature, so that nothing shall stimulate growth till the desired time. It may be objected that in Nature the bulbs are not dug up and treated in this way, and that is of course true. The same object is, however, attained in a different way. For the most part these bulbous plants are natives of hot dry climates, where, during the growing season, there is abundant rain and genial warmth. Exposed to these conditions, the bulb grows, flowers, and makes provision for the future. Then comes a hot dry season; the leaves shrivel, the surplus water evaporates, and the bulb goes to rest till reawakened in the following season by the rain. In colder climates the diminishing heat of autumn insures the gradual going to rest of the bulbs; frost puts a stop to growth altogether, and the bulb remains dormant till spring rains or melting snow afford sufficient water, in combination with sufficiently increased temperature, to start the bulb once more into growth.

There are other bulbs, however, in which the course of events is different; such, for instance, are the evergreen bulbs, like those of Crinum or Eucharis. Here there is no such marked intermission of growth; the leaves do not wither periodically, and growth is relatively, at least, continuous. Such bulbs are mostly natives of tropical or equatorial climes, where throughout the year there are continuous moisture and continuous high temperature, with comparatively little fluctuation of climatic conditions. It is clear that to dry up such bulbs would be to weaken, probably kill them; hence their roots should always be kept moist, and a period of *comparative* rest secured by lowering the temperature and diminishing, but not entirely withholding, the water supply.

THE BULB AND THE FLOWER.—The variations in bulb-conformation are, as already stated, numerous, but in this place no further mention need be made of them, except it be to point out the different positions of the flowers. In some bulbs, like those of the Onion or of the bulbous Irises, or Snowdrop, the primary growing point of the bulb ends in the production of a flower or a head of flowers; consequently any further growth in that particular direction is put a stop to, and any subsequent growth, if it occur at all, must be from below the point. [A Tulip affords another illustration of the same kind. If a bulb be taken up in summer after the flowering is over, and when the leaves are commencing to wither, and it be cut down through the centre, the following appearances may be seen. In the centre is the lower part of the stalk which has borne the flowers. From the lower part of this stalk emerge the roots. On either side of the central column may be seen one or more plump new buds, destined to continue the growth next season. These buds originate from the base of the central column or stem, in the axil of one or other of the scales—in fact, in precisely the same way as before explained in the case of axillary buds. Outside these new buds may be seen two or three scales now dry or rapidly shrivelling, which are the outer scales of the original bulb.

In this case, then, the original bulb flowers, makes provision for the future, and then dies. The Tulip of the present year is, therefore, not the same bulb as that of the year preceding, but a direct descendant from it.

The Amaryllis, Hyacinth, and Narcissus have bulbs of a different character. In them the primary growing point does not end in a flower, but remains as a vegetative structure. The flower-stalks here are truly axillary structures, coming off from the sides of the

bulb. As the older scales at the outside and base of the bulb dry up and die, new growth takes place in the terminal growing point, and so in this case the bulb of the present year is the direct continuation of that of the year preceding. Vegetation is carried on by the renewed growth of the same original growing point, but axillary growth also takes place, for in general not only the flower-stalk, but numerous lateral "offsets," will be produced from such bulbs, and, indeed, it is by such means that bulb-growers multiply their stock. Mention has also previously been made of adventitious buds, and of buds whose dormant activity is called into life by injury to the main stem. Bulbs often supply illustrations of this phenomenon, and one means of multiplying bulbs of the Hyacinth is to scoop out the lower part of the bulb, or to cut it across in various directions. Along the edges of the wound a vast number of small bulbils are formed, at first consisting of scales only, but which after two or three years' growth produce flowers in the ordinary way.

Another point may be alluded to as having a bearing on practical cultivation, and that is the difference in the leaves of the bulbs and the alternation of form and office which they present. It is hardly necessary to say that the scales of a bulb and the true leaves are essentially the same, the one being merely a modification of the other. The position, origin, and arrangement of the organs in question would suffice to prove their identity, were it not rendered even more obvious by the fact that the base of the leaf is often fleshy, the free end foliaceous, thus presenting both phases in one and the same organ. Ordinarily, however, there is an alternation of growth. First the bulb-scales are formed; these are depôts of food-stores derived and accumulated from the leaves of the parent bulb; then the true leaves appear within the scales, they lengthen, and in their turn acquire and elaborate food for the next generation of bulbs. In the Hyacinth, and bulbs of that character, there are, from what has been said, numerous generations of leaves, first scaly, and acting as food-stores, next leafy, and acting as food-getters and food-formers. In the Tulip, on the other hand, owing to its mode of growth, there are but two generations of leaves—the first scaly, the next leafy—and then there is an end to the growth of the plant so far as that generation is concerned. The subsequent alternations of scale and leaf manifest themselves not in the primary bulb, which wears itself out in the production of flowers and succession buds, but in those secondary buds.

We have here illustrated two phenomena of plant-growth, which are repeated in other organs, but to which we desire to call attention here on account of the very marked manner in which they are manifested. These two phenomena are—(1), the alternate production of modifications of the same organs, these modifications being adapted to serve distinct purposes; and (2), the "indefinite" and "definite" modes of growth respectively. We shall see later on that where the main flower-stalk ends in a flower (as in the Tulip), there is no further growth at the end of that stalk; growth there is arrested or defined by the production of a flower; but where the growing point at the extremity of a stem does not end in a flower, growth in length goes on "indefinitely."

The remarks made as to the nature and mode of growth of bulbs apply, with slight modification, to other underground organs acting as storehouses of food or starting-points of growth, such as "corms," "tubers," "root-stocks," or "rhizomes," and the like. Indeed, although in most cases it is easy to give satisfactory definitions of these organs, yet they sometimes run one into another in such a way that accurate definition becomes impossible. These are matters, however, which do not greatly concern us from the point of view of practical cultivation. If only the general principles of their growth, and of the work they have to do, be grasped, the varied details of their conformation may be left to the botanist. We may, however, fitly allude to some of the commoner and best-known forms above mentioned. *Cassells' Popular Gardening.*

(To be continued.)

THE FARLEIGH DAMSON.—This is an astonishing annual bearer; the fruit is small, produced in thick clusters, of fine quality preserved. Some idea of the value of this as a market variety may be gathered from the fact that one Kentish grower alone sent 3000 bushels to market, which realised 14*s.* per bushel. This sort is largely planted to protect under-fruit, and is the most lucrative fruit tree grown. As they can be planted 15 feet apart, an acre would require 193 trees. The annual sale of this Damson is, in Mr. Bunyard's nursery alone, from 10,000 to 15,000 trees.

AN APPLE MOTH.

IN a late number of this journal we published a description and figure of a beautiful little moth which does much mischief to Apples, by boring, whilst in the caterpillar state, into the heart of the fruit. It was well known to Linnæus, and was described by him under the name of Tortrix [Carpocapsa] pomonella. A more extended and popularly written account of its life history was given in the *Letters of Rusticus*, pp. 85 and 86, from which it appears that it feeds on the fruit of the Pear as well as on the Apple.

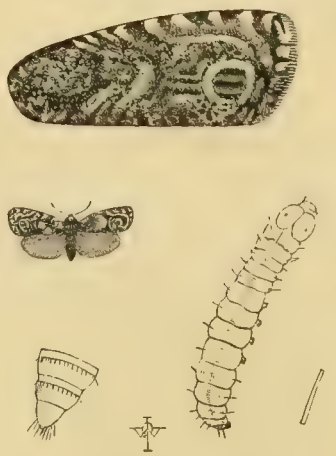


FIG. 56.—TORTRIX WŒBERIANA.

On the present occasion we have to bring under the notice of the reader an equally beautiful moth belonging to the same family (Tortricidæ), Tortrix (Semasia) Wœberiana, a species equally injurious to fruit trees but with very different habits. The accompanying figure (fig. 57) represents a portion of a branch of a Pear tree, communicated to me in February last by my colleague, Edward Chapman, Esq., of Magdalen College, growing in his garden at Trewen Hall (where the Prince of Wales resided whilst at the University), in the heart of the city of Oxford. The tree exhibited a vast number of cracks along the branches, caused by the working beneath the bark of the larvæ of Tortrix Wœberana, the cracks being filled with minute dark brown particles of the excrement of the larvæ; of course, such an attack must prove greatly injurious to the welfare of the tree. In some cases the excrement was collected in little masses, hanging out of the cracks of the bark. In the month of April the insects, which had previously attained their full size, had become chrysalids, and protruded the anterior part of their bodies out of the cracks, being retained from falling out by a transverse row of very short stiff spines across each of the terminal segments of the body, which is moreover terminated by a little brush of fine bristles, curved at the tips. The caterpillar figured in our woodcut, is of a pinkish-white colour. It is represented (fig. 56) magnified from specimens mounted as a microscopical slide by Mr. Chapman; the extremity of the body of the chrysalis is also separately represented, but the engraver has incorrectly made the terminal bristles straight, not curved at the tips.



FIG. 57.—BRANCH OF APPLE SHOWING THE ATTACK OF THE TORTRIX.

At the end of April, and through the month of May, the moths appeared, and may be found among fruit trees through the summer till September. It is found throughout this country as well as in Scotland and Ireland, and it is stated by Mr. Wilkinson in his monograph of the family that it feeds under the bark of the Apple, Plum, Cherry, Peach, Apricot, Almond, and Laurel trees.

The moth measures from half an inch to seven lines in the expansion of the fore-wings, which are of a black colour, elegantly varied with orange-coloured scales, and numerous irregular lines, especially across the posterior margin of the wing, which, on account of the variety and irregularity of the markings, we have represented detached and highly magnified. Along the anterior or costal margin are nine white triangular spots, terminating in orange lines towards the disc of the wing, with a large irregular steel-blue glossy spot in the middle of the wing, and a long streak of the same colour parallel with the front margin beyond the middle, and a large circular glossy ring toward the anal or posterior angle, within which are two straight orange lines, which are extended beyond the ring towards the disc. Two white dots are on the outer fringe above the middle. The hind wings are dark brown, rather paler at the base. *J. O. Westwood.*

ROOT FUSION.

SOME years ago "fusion" was accepted as the explanation of many peculiarities of structure, such as that of the gamo- or monopetalous corolla. Most of these cases of so-called fusion are really not so. The parts are not separate at first and afterwards fused, but merely imperfectly separated—separate above and not below. In the case figured (fig. 58) true fusion of the roots must have taken place at an early stage. The illustration is taken from a photograph obligingly forwarded to us by Professor Henriquez, of Coimbra, and represents the fused roots of Pinus Pinaster, discovered in a Portuguese forest, and now preserved in the museum at Coimbra. Cases occasionally occur where the annual rings of wood continue to be formed on the stump after the trunk has been felled. An instance of this was sent us by Mr. Webster, of Gordon Castle Gardens some years ago, and of which an illustration was given at the time, showing that in all probability the new formations in the amputated stump owed their origin to inosculation of the roots, such as now represented.

HORTICULTURAL NOTES IN RUSSIA.

(Continued from p. 263.)

THE TAURIDE GARDENS.—These are among the principal gardens in the immediate vicinity of St. Petersburg, and belong to an Imperial palace, now inhabited by ladies provided with residence by the state. The plant-houses alone are here of interest, and they include a great variety of specimens in different sizes for decorative purposes. The houses are all provided with brick porches, which serve the purpose of preventing cold draughts in winter. Every building is crowded, and between large plants the space is occupied by small specimens. Standard Bay trees, and others more beautiful, of columnar habit, recently put out, were much to be admired of their kind. In the houses were all the usual decorative plants, well grown and healthy. Cinnamomum Tamala was in great quantity, and its young leaves of reddish tint are certainly very pretty. Ficus Chauvieri,

F. macrophylla, and one or two others, are found useful, as well as the common F. elastica. The Lily of the Valley here was less drawn than we had generally seen it. Lots of greenhouse plants are used in a small state, and small Myrtles were very numerous. We observed some splendid plants of Azalea mollis. In boxes Selaginella is planted in quantity for removal and use in various ways: cuttings of Portugal Laurel, Roses, and Aucuba, with many others of like nature, are struck wholesale in boxes not covered with glass; a Villaresia, called V. longifolia, was the most uncommon of the plants used in any quantity we happened to meet with. Chloranthus inconspicuus and Cocculus laurifolius were among those plants not used by us for decorative purposes. Among flowering plants Foxgloves are grown effectively in pots. The variegated Ivies grown on the rafters were worthy of note, and the leaves were often very handsome. Grapes we found luxuriate. Several birds flying free and happy give animation to this charming arrangement.

Tsarskoie Seloe.—The Imperial palace of Tsarskoie Seloe is the most magnificent of the Imperial residences, and the gardens enjoy the same pre-eminence. It is situated about 22 versts, or 14½ miles, from St. Petersburg. The Roses and the method of growing them were to us more interesting than anything else. Some were in flower that had been grafted only about fourteen weeks before, and the plants were furnished with beautiful foliage and flowers, forming excellent decorative though small specimens. Grafting is much preferred to budding for all but the Bengal Roses, and grafting is performed on pieces of root for increase of stock when stocks cannot be had in sufficient quantity. In grafting pieces of waxed paper are used to exclude air. A new lean-to house for Roses, built of large round

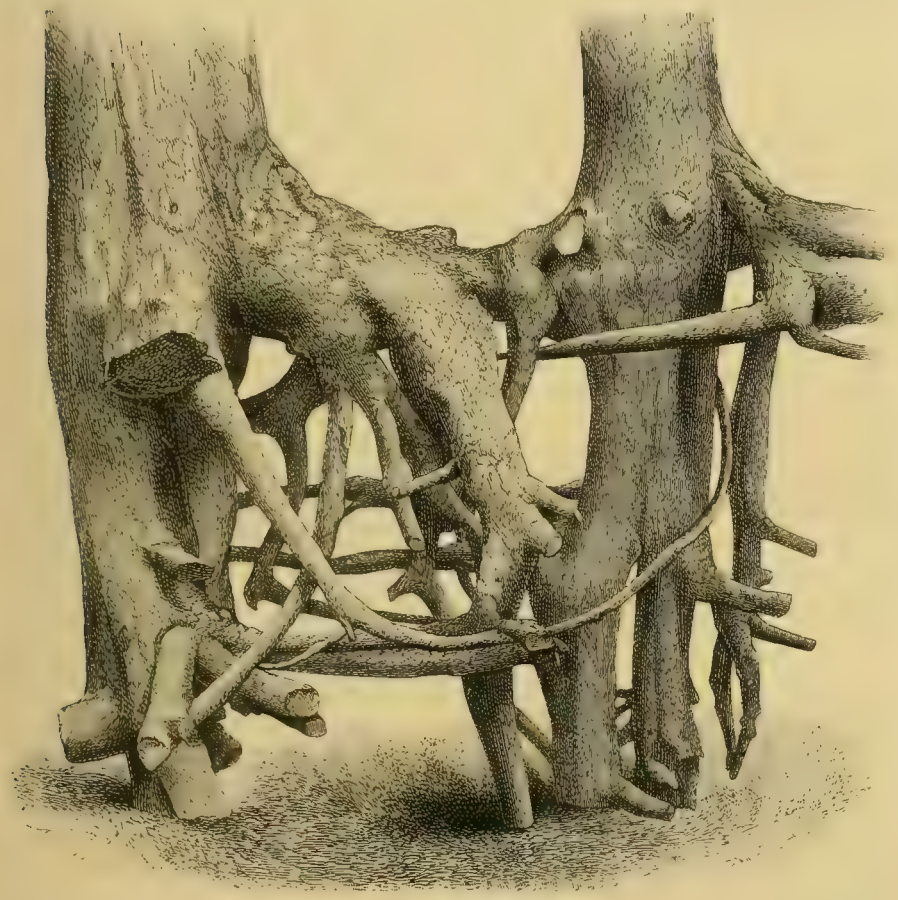


Fig. 58.—Root fusion: Pinus pinaster. (See p. 300.)

here well grown, but the Vines produce a great many aërial roots, as we noticed them generally to do elsewhere. From this garden the company was conducted to the house of a gentleman, who provided refreshment in true Russian variety. His name we cannot give, nor was it known to the majority of the visitors. It was, indeed, not the only entertainment provided in the most unexpected manner, for which, perhaps, the majority of the company never knew to whom they were indebted. The conservatory attached to this house is remarkable in its way, and it was generally admitted to be one of the finest known to those present, not in size, but in the skilful planting and general suitability of everything brought into use. A fountain graced the centre, and winding-paths lead in a charming manner among rich foliage from one part to another, at the further end, rising to perhaps one-third the height of the building. It reaches to a considerable height—higher than the principal bed-room windows, so that a very pleasant view is obtained from them through the fine foliage of Palms, beyond to rock-covered walls, upon which fine-foliaged Begonias and other handsome plants timber, like the dwelling-houses, had been constructed during the winter, and we were informed that this kind is better for plants than those of brick. This house was built with double walls, and by caulking the seams with loose rope they are made perfectly air-tight. Frames are also constructed in the same way, and the timbers are fixed in the common manner of timber buildings by a kind of dovetailing at the corners. Among the best Roses for Russian culture are Souvenir de Paul Néron, Madame Victor Verdier, Maréchal Niel, and Geoffrey de St. Hilaire; but a great number of varieties are grown, and the perfection to which they all attain is something marvellous. Nearly all are in 32-sized pots, and they often stand very close together. A taste for Roses, it is said, was created by the Empress Catherine, whose favourite flower it was, and at this day the Russian gardeners are skilful manipulators, producing flowers nearly, if not quite, all the year round. Disbudding is practised with some varieties to get their flowers in autumn.

One of the warm houses contained a number of Saxifraga sarmentosa in small pots, beautifully in flower, and the individual flowers were large and well spotted. Of Cymbidium sinense we found beautiful specimens in 32-sized pots, which produce six or eight spikes, and these must be very attractive when in flower. They are grown in turfy soil. Among the finer specimens we noticed Passiflora quadrangularis, which is grown expressly for the flowers; Clerodendron Thompsonæ, Zamia furfuracea, and Chamærops Martiana. The plants grown for decoration are very various, and we judge that horticultural taste from this point of view—the only one at all conspicuous in Russia—is wide in its appreciation. Wallflowers, double Stocks, Tree Carnations, and Neriums are largely grown in pots. Alocasia Gibsoni appears to be a favourite. In the orangery we find immense standard and columnar Bay trees, Hollies, Rhododendrons, Laurustinus, Laurels, Box, Junipers, several Conifers, and, of course, Oranges, which are grown chiefly to supply the pleasure of green trees in winter. Some of the plants cultivated for their flowers in this house are Olea fragrans, Anemone Honorine Jobert, Antirrhinums, Rosmarinus officinalis, Escallonia macrantha and Pittosporum Tobira, the two last of which we saw flowering, and the former in particular was very ornamental. Mahernia odorata, with a profusion of yellow flowers, we thought extremely pretty and effective, as well as novel, for greenhouse decoration. It is a very pleasing and graceful plant. In this house was a large vase containing two kinds of plants which formed a combination of foliage that without flowers had a most handsome effect. Astelia Banksii furnished the centre, and with it was intermingled the stems of Ivy, which crept among the narrow leaves of the Astelia, and drooped over the side of the vase. Ivy is very successfully used for hiding tubs and unsightly objects.

An important part of this establishment is devoted to the culture of fruit, and there are twenty-four houses devoted to Peaches, Apricots, Grapes, Plums, Pears, and Apples, grown on trellises. Raspberries, we observed, were cultivated in pots. Strawberries generally appear weak in foliage, but the fruit is fairly good, and the first crop is produced by February 24. Peaches were ripening on May 22, and Apricots were ripe on that date, the latter not much larger than Walnuts, but fruits generally are small. Of Black Hamburgh Grapes, in one of the houses, there was a fine crop. Plums are found difficult to grow, but the most satisfactory kind is that known under the name of the Quetsche—a long variety. Cherries do not succeed in the open, and require to be covered with glass on boards in the winter. Pines are all planted out, and flourish well. The pleasure-grounds are laid out in the English style, and some of the views are very good. There are fine specimens of Abies excelsa in considerable numbers, but the branches are more depressed than they are in England, probably from the weight of snow they have to bear. The appearance is so different, that until others confirmed the kind, we could not be sure of it. Oaks are comparatively of large size, and we believe they are all Quercus pedunculata, which is hardier than Q. sessiliflora. Limes are all Tilia parvifolia, which is the common Lime of the country. The common Quick does not flourish well enough to make good hedges, and it is replaced by Cratægus sanguinea.

(*To be continued.*)

FORESTRY.

Work for September.—The past season will long be remembered, on account of the almost unprecedented drought which generally prevailed throughout the country. Trees and shrubs, more especially those that were recently planted, have suffered severely; indeed, in numerous cases a large percentage of the latter have been entirely destroyed. But the damage is by no means confined to the latter, for in not a few cases trees of large dimensions have been killed outright by the protracted drought. Beech, Sycamore, and Horse Chestnut (the former in particular) seem to have fared worst, and no doubt others which as yet show but small symptoms of decay will follow in the track. The fall of the leaf is also considerably in advance of ordinary seasons, and already our roads and parks show unmistakable proofs of a more than ordinary early autumn. The excessive drought of the present season, although very injurious to newly planted trees and shrubs, has proved beneficial to most sorts of hardy evergreens, and to coniferous trees as well. The former have flowered very profusely; indeed we cannot remember having seen such a glorious display of floral beauty, more especially with the various species of North American shrubs. Coniferous trees have had ample opportunity of ripening their young growths, so that but little need be

feared even though the coming winter be a more than ordinarily severe one. Cones are very abundant this season, more especially on such trees as Abies nobilis, A. Nordmanniana, A. cephalonica, and the various species of Pinus.

PLANTING.—Continue the enclosing, clearing, and otherwise preparing of ground intended to be planted during the present season. The clearing and burning of whins, Brambles, and brush, is best done with strong, short scythes or hooks, although in a few cases the cheapest and most effectual method is to uproot these with the pick or mattock.

DRAINAGE should also be paid particular attention to, as the future welfare of the plantations depends much on whether this operation has been performed or not. Where new fencing is to be erected around newly-formed plantations we generally adopt wire fencing, which consists of seven wires stapled to wooden posts at 5 feet apart. The erection of such fences—indeed, fencing of all kinds—should always be entrusted to those who are practically acquainted with the work, few things in connection with forest work having a more unsightly appearance, or are more unsatisfactory, than badly erected fencing. In high-lying ground we generally adopt the continuous iron and wire fencing, the cost of transit being less, and the fence, when well erected, being equally as effectual in resisting the inroads of cattle and sheep as the latter kind. Plant out large evergreens, staking and tying where necessary, and, should the weather continue dry, a liberal mulching will be highly beneficial. Every operation which interferes with the work of planting should now be pressed forward, so that all hands may be concentrated on this important work when the proper season arrives.

NURSERY.—In the nursery but little in the way of cleaning should now be required, for the past sunny weather has given every opportunity for the destruction of weeds. Attend, however, to the insertion of cuttings, the management of layers, and storing of tree seeds. Coniferous tree seeds should receive a more than ordinary amount of attention, especially those of the Abies tribe, notably A. Nordmanniana, as, unlike the Pine tribe, the scales of the cones during dry, warm weather speedily fall asunder, and the seed is consequently lost. Turn compost heaps, and dig well rotted manure or nursery refuse into vacant plots and borders. Ridge up or dig roughly over all plots from which trees have been removed, so that the soil may be fully exposed to the ameliorating effects of the winter frosts. Make calculations of requirements for refilling the nursery, and give early orders to nurserymen after carefully examining the stock.

STAKING AND TYING.—This is an operation that is unfortunately too often neglected, and if performed at all it is generally done so in a most unsatisfactory manner. Newly transplanted trees, when over 4 feet in height, and more especially if of a bushy nature, should always be securely staked and tied at the time of planting, or immediately thereafter. When we consider the irreparable damage done to the tender rootlets of trees when allowed to rock about with every blast that blows, it certainly behoves us to use every means in our power to allay the evil as much as possible. This can only be done by a thorough system of staking or tying, of which the following are the most practical methods now employed:—For trees up to 6 feet in height the best plan is that of driving a stout well-pointed stake firmly into the ground, and as close to the stem of the tree as possible, bearing in mind that the nearer the stem and stake are in conjunction the greater will the power of resistance be, and uniting these with a stout piece of matting. When driving the stake it should be held at a slight declination from the tree, and always on the most exposed side. By crossing or twisting the matting used in tying between the tree and stake a much more effectual job is performed, as the tree has then less room to move about when rocking with the wind. Some people may object to this method on the footing that driving in the stake so closely to the tree's stem must be injurious to the roots, but this is a mistake, as when the stake is well pointed we find that next to no damage is ever committed, and it will be found so by any person trying the experiment. For trees upwards of 6 feet in height, and especially when growing in exposed situations, three wires will be found the most efficient method of steadying. These should be placed in a triangular fashion, one end of each being joined to a collar placed around the stem of the plant at, say, three-fourths its height, and the other to stout stakes driven firmly into the ground at a distance from the stem proportionate to the tree's height. The collars may be made of any strong material, such as bas-mat or tarred twine, but we find those of leather with three rings to which the wires are attached to be not only the most serviceable, but neater in appearance, and more easily employed.

HEDGING.—Push on vigorously the switching and cleaning of hedges, and have all such work finished up as speedily as possible. Young hedges should receive a little extra attention in the way of hoeing, cleaning, and slight switchings, all of which will tend towards promoting a strong, even, and vigorous growth. Ivy is most injurious to hedges and, along with Elder, should never be tolerated. Where these have been allowed free scope for a year or two it will be noticed that the fences become gradually unhealthy near the ground, fall out into holes or gaps, and ultimately become anything but objects of beauty. Another prevalent enemy to hedges is trees, the branches of which overshadow them and soon cause almost irreparable damage. This should always be attended to when thinning a wood, and all trees that are likely to infringe on the fences cut away. Ornamental hedges or those within the policy grounds should receive two trimmings annually, so as to preserve at all times a neat, trim appearance, whereas for general forest fences one trimming will be quite sufficient.

GENERAL WORK.—Woodland fences will, during hot weather, when stock of all kinds are tormented with flies, require special attention, as will also tree-guards and other erections for preventing the damages of cattle, horses, or sheep. This is a good time for erecting new fences, more especially those in a mountainous or moorland district, as the cost of cartage for material is much less during dry than wet weather. Clear out all open drains and ditches, and see that the outlets of closed drains are not choked up by an accumulation of leaves and branches. Repair roads and walks, lay and roll turf, and further all work likely to interfere with planting later on. *A. D. Webster, Penrhyn Castle, North Wales.*

Orchid Notes and Gleanings.

SEASONABLE NOTES.—The days are rapidly getting shorter, and now that the hot weather has gone for the season, it is necessary to vary the treatment of the plants. While the very hot weather lasted with almost unclouded sunshine from six in the morning until six at night, with the temperature up to 90° and 95° with all the shades down and plenty of air on, there was no danger of over-shading. Now there is great danger of doing so. The East India house will require most shade, but I would rather err on the side of giving too little than too much. If it is seen that the plants are not likely to be scorched let the shades be kept rolled up. Admit a constant circulation of air night and day if possible. The wall-ventilators even in our warmest house have not been shut since the cold weather in April, nor will they be shut while the temperature can easily be kept up with them open. The position of the plants in the house is of great importance at all times but much more so as winter approaches, for we want the plants to enter the dark days prepared for them, by their tissues being strengthened by light, air, and heat. In the shady part of the house Phalænopsids, Angræcums, and Odontoglossum Roezli are placed; in the lightest part of the house Vanda teres and V. Hookeri, with the Calanthes, which require plenty of heat while making their growth, but they flower better in the Cattleya-house. Cattleya superba flowers grandly hung up near the glass in the sunniest part of the house. In medium shade may be placed the heat-loving Cypripediums, Stonei, lævigatum, niveum, &c. The insect pests must be dealt with at this season; the hot weather favours the introduction of thrips. They have been swarming outside the doors, and it is scarcely possible that they will not be inside, although their traces are not yet seen. Prevention is better than cure, and it is well to dip the Odontoglossums in tobacco-water; move them and any other plants that are likely to be injured by tobacco-smoke into another house, and well fumigate the others. Sponging with soapy water may be resorted to in some cases if any of the leaves are black or sticky with honeydew. A good deal has been written about not shading the Cattleya-house at all, but this is only a reaction in the opposite direction from too much shade. I was looking through a large collection of Cattleyas last summer, and remarked on the dried-up appearance of the plants. "They are dry" was the reply, "but they will be round with the hose soon." I should not like to see anybody going round with a hose amongst any of our Orchids, except perhaps young Odontoglossums, in the cool-house, during very hot weather. We never wet the leaves of our Cattleyas, but we let them have as much light as we can give them, shading lightly from the direct rays of the sun only. The leaves are kept clean by sponging. Cattleyas are now making their growths, and young roots are pushing under and over the surface. Those that are pushing in clusters from the base of the pseudobulbs must be protected from slugs, wood-lice, and other depredators. The Cattleya-house will require very little shade now; they will merely require to be protected from hot bursts of sunshine. The Dendrobiums making up their growths require exactly the same treatment as the Cattleyas; and just as they are exposed to light and air so will they in proportion flower next season. Place a Dendrobium Wardianum on the stage amongst other plants, suspend a similar plant from the roof with its growths almost touching the glass, and watch the result at flowering time. The plant that received most light and air will be found to have twice as many flowers on it as the other. So it is with the sheaths of Cattleyas; those badly matured will produce one or two flowers; the best grown examples will have three or four. At present C. Trianæ is forming its sheaths and rooting freely; they require a plentiful supply of water at the roots, and scarcely any shade. Other species that have made their growths and perfected their sheaths will not require so much water, and it is better to let them get dry before watering them. C. Warneri, C. Mossiæ, C. Mendeli, &c., do not like water applied to them in driblets. Give sufficient to water the compost, drainage, &c., thoroughly, and no more until the compost is dry again. Large plants will not require any for a week or perhaps ten days, while small ones may require it twice a week or oftener. Gradually reduce the supply of atmospheric moisture. The cool-house still contains some plants that must be moved into the Cattleya-house this month, but not until the end of it, unless the weather should prove exceptionally cold. The Odontoglossum vexillarium have been in the coolest house since they went out of bloom, and they are now making good growths. They will be placed on the shadiest side of the Cattleya-house. The Cattleyas, Odontoglossum citrosmum, and O. Phalænopsis being placed on the lightest side. Cypripediums and Cymbidiums are also on the shady side, except C. Lowii, which is hung up close to the glass in order that the growths may be well matured. Odontoglossum cirrhosum does not like to be wintered in a cool-house with a north aspect; we will try at least some of them in the cool end of the Cattleya-house—they will be placed there as soon as cold weather sets in. *J. Douglas.*

The Hardy Fruit Garden.

THE gathering of fruit will now daily claim attention. Pears, such as Souvenir du Congrès, Colmar d'Eté, Beurré d'Amanlis, will all require to be gathered; and that sweetest of all Pears, the Seckel, will require watching, for as soon as they approach ripeness the tomtits will begin at them, and do a lot of damage in a short time. The Kerry Pippin Apple will be found fit to get, and the same may be said of the Worcester Pearmain. In storing them away in the fruit-room the windows should be left open, and dark blinds on rollers let down to exclude the light, and yet admit plenty of air; and endeavour to keep the temperature low, because when high it means early maturity and early decay.

Where it is desirable to preserve Morello Cherries still on the wall, in addition to good nets it will be necessary to ward off the rain by means of an extra coping—it may be a temporary board, which will answer the purpose perfectly; and the same applies to Plums, for oftentimes after a long season of drought a sudden downpour of rain, though most beneficial to many other things, is injurious to ripe or ripening fruit. Peaches will now be plentiful, and so will earwigs and wood-lice, after the long spell of hot dry weather, so trap these insects with Bean-stalks stuck into the trees, and go over them every morning, blowing them into boiling water. Sometimes it is necessary

to remove a few leaves, to let the sun give the colouring to the fruit, which adds so much to its beauty.

As we pointed out in a previous Calendar, Filberts are a fine crop, and in many places squirrels are plentiful and must be looked after early in the morning. Blackberries are now in perfection; these, when mixed with Apples, make an excellent tart, or, preserved by themselves, are delicious. Persevere in picking up fallen fruit in the orchard, for it is grievous to see that which will make wholesome food lying neglected and splashed with rain and soil. Pears which fall will not keep, but for immediate use they may be well utilised for stewing. Wasps are sure to be numerous as we have found after years of experience, and the best plan is to pay the garden boys for taking their nests, and by that means keep down these plagues.

Where any young trees have been budded early they will probably require the bast to be loosened and to be rebound; and young trees which were grafted this spring will require attention, and those on walls nailed or tied in, to ripen the wood, especially in the case of Peaches. *J. Rust, Eridge Castle, Sussex.*

The Flower Garden.

Transplanting.—At no season of the year is the ground in a more suitable condition, both in respect to temperature and moisture, than it is at the present time, for transplanting all kinds of shrubs and trees. The humidity of the atmosphere is also much greater at this season than is the case in the spring months, there is consequently much less liability of exhaustion from excessive exhalation from the foliage and bark of newly transplanted trees. An additional advantage is also gained by transplanting at this season, from the fact that the earth temperature during the autumn months is a few degrees higher than that of the atmosphere; roots are thereby quickly developed, and the injury and check caused by transplanting is soon rectified and the tree becomes re-established before winter sets in. Notwithstanding these advantages in favour of early autumn planting this work is frequently, from various causes, delayed till mid-winter or spring and with very unsatisfactory results. Some planters, however, still maintain that, as regards evergreens at least, spring planting is preferable to autumn, but I venture to think that those who have formed such an opinion have failed to perform the operation sufficiently early in the autumn, as from this cause chiefly arises the failures we have so frequently to deplore. Such being the case no time should be allowed to lapse where alterations and new plantations are contemplated; but every available means should be used to commence and complete the work as quickly as possible. Where large specimen trees or shrubs have to be transplanted they should have received the necessary preparations six or twelve months previously by cutting a trench completely round and partially underneath them, so as to sever the roots at a proportionate distance from the stem, according to the size and nature of the tree. Many trees which furnish fibrous roots plentifully will succeed with a comparatively little ball of earth, but others, especially the Coniferæ and many tender kinds of evergreens, require a larger ball and greater care to ensure success. In cutting this trench it is always advisable to save as many of the young healthy roots as possible by relaying them in the trench, and afterwards covering them with light rich soil, from which they can be easily removed without injury when being transplanted. Having thus prepared the tree, the site to which it is intended to remove it should receive attention. The first and perhaps the most important is to provide thorough drainage; without this few trees or shrubs will succeed satisfactorily. Where the subsoil is not sufficiently porous to prevent water stagnating at the roots; drains, rubble, gravel or ashes should be used for the purpose. The soil should be prepared according to the requirements of the tree. If it has grown well in its present position a similar kind of soil should, if possible, be used, with any addition which may be thought advisable for the changed position. Always avoid, when practicable, the removal of choice specimens from a very low-lying damp position to a high and dry one, and *vice versâ*; still the latter precaution is not so important as the first, as from this cause alone innumerable failures occur in tree planting, nor does this remark apply to large specimens only, but also to shrubs, which seldom thrive if planted in a breezy, dry position after having been nursed in a damp sheltered valley. Having made these essential preparations beforehand, and having the proper mechanical arrangements near at hand for conveying the tree to its intended position, care should be taken to injure the roots as little as possible in transit, and in placing it again in position. The roots should be laid out straight, and afterwards covered with rather fine soil, which should be well washed down so as to prevent the soil from sinking afterwards. A good mulching of half decayed manure—about 3 inches thick—should be spread over the surface, and if the tree be then made secure from wind, the operation will be complete.

In planting shrubs, although such precautions are not so essential, still the success resulting from skilful and careful practice amply repays for any extra time and labour incurred in the operation. Nothing is more disappointing and annoying to the planter than to see the majority of his newly-planted shrubs fail to grow. Not only is the value of the shrubs lost, but the time and labour is also wasted, and, what is perhaps worse still, the effect produced is also disappointing. Early autumn planting and greater care in the operation are the two chief means to be used for remedying this evil. In planting new shrubberies a much better effect is produced by planting in large masses a few good and suitable kinds of shrubs, than by planting in the indistinct, indefinite manner too often practised. Variety must of course be considered, but it should be variety that will please, and not a meaningless medley which tends only to confuse and dissatisfy the onlooker. By planting in larger masses this advantage is also secured. The planting in larger masses this advantage will also be secured. The requisite kind of soil can be the more easily provided for any special kind of shrub, and the effect will be the better for this provision. In planting shrubberies the chief object to be attained should never be lost sight of; the selection of different kinds of shrubs should be in accordance with this object. Their nature, size, and shape should also be made subservient to it, nor should their ultimate size and character be permitted to go unheeded when the selection is made. If these few simple rules were attended to, how comparatively easy would the formation of shrubberies become, and how much more pleasing would the after-effect be compared to many we are now accustomed to witness. *T. S. C.*

The Kitchen Garden.

Cardoons.—Take advantage of fine weather, when the plants are dry, to get the earliest planted of these earthed-up. This is done by bringing the leaves carefully into an upright position, in which they should be held by one person, while another fastens the hay-bands (of which a sufficient number for the row have been previously twisted) round the bottom of the plant, winding away until the whole of the stalk is bound round, and the end of the band made secure. The stalks should be brought closely together, but not be too much compressed. Proceed in this way until the row of plants is finished, and then earth-up till the bands are covered with the soil, which should be pressed firmly round the plant at the top to exclude air and moisture, and proceed in like manner until all are finished.

Autumn Cabbage Planting.—Assuming that the ground from which the crop of spring-sown Onions has been removed was manured and trenched, as advised in my last Calendar, the plants raised from seed sown the end of July and subsequently pricked out in nursery beds will now be ready for planting.

This should be done in drills 3 inches deep, 2 feet apart, and the same distance from plant to plant in the rows. The plants in each succeeding row should be planted diagonally, the operation being done when the ground is moist. Before drawing the drills it will be necessary to tread the ground immediately under the line, as it is advisable to have the ground moderately firm before the plants are put into it.

With a view to rendering the roots of the plants distasteful to the Cabbage maggots they should be dipped in a puddle made of clay and a handful or two of soot prior to being planted; and afterwards, should the plants, by jagging and presenting a sickly appear-appearance, indicate the presence of maggots at the roots, they should be looked after and destroyed, and the blanks thereby caused be made good from the nursery beds. The present will also be a good time to make a planting of red or pickling Cabbage. When this is sown and planted the same time as Cabbages, in the autumn of the preceding year, the heads become much larger and finer than those obtained from plants raised in the beginning of the current year.

Ordinary Work.—Where a sufficient breadth of Parsley for winter and spring use was not sown as recommended in our Calendar for July 12, at p. 47, now will be a good time to supplement the sowing then made by transplanting an adequate number of young plants in rows 1 foot apart, and 7 inches in the row. From sowings of Endive made the end of July make good plantings under south and west walls, as also on warm borders, 1 foot apart for the curled varieties, and 15 inches each way will be none too much space for the Batavian varieties. In the event of dry weather at the time of planting, the plants should be watered until they have established themselves. Plants sufficiently advanced for blanching should be tied up forthwith. Thin out the plants of winter Spinach and Turnips to 9 inches apart in the rows; where the former crop has not already been sown, no time should be lost in doing so. Make successional plantings of Lettuce on warm borders, and tie up plants as they become fit for blanching. Cut down old stems of Globe Artichokes, and attend to the thinning, stopping, and nailing of Tomatos out-of-doors, so as to prevent overcrowding of the leaves and shoots, and the breaking of the latter by the wind. Provision should now be made for protecting the latest sowing of French Beans from the effects of early frosts by constructing a temporary framework and covering at nights with mats or old sashes when the sky indicates the approach of frost.

Mushroom Beds Out-of Doors.—This will be a good time to collect some short stable-dung and horse-droppings with which to make up beds out-of-doors for producing Mushrooms next April and throughout the summer months. The dung should be turned over a few times when a sufficient quantity of it has been collected for a bed, to allow of the rank heat and steam escaping therefrom, after which the bed or beds can be made. They can be made against a north wall in a dry situation—that is, in a place where water will not lodge—about 4 feet wide and 2 feet high at the wall, and the whole should be trodden well together and spawned when the heat has declined to 70°, and subsequently be cased over with soil sufficiently moist to yield to the pressure of the spade. The bed should then be covered with long dry litter, over which a few pieces of board should be placed to keep it in position. Failing the wall accommodation the bed can be made in the shape of a Potato-pit—say 4 feet wide and 3 feet high in the centre—in any available spot where the ground is higher than its surroundings, to prevent the lodgment of water; and where this does not exist a few bundles of faggots placed under the beds will answer the same purpose. In making the beds in the open air we drive a few stout stakes into the ground along the line where the bed is to be made, about 6 feet apart both sides, and inside these, as the bed is being made, a series of boards or slabs about 6 inches wide are placed, thus forming a sort of box for the dung, with sufficient space left at the top to form a foundation for the mould used in casing the beds. The latter, as above recommended, having been previously well trodden and beaten into shape with a four or five-pronged fork and spawned, should then be cased over with soil capable of being beaten firmly together, and thatched over with a foot thick of litter, which should be made secure with several lengths of tar-string, to prevent its being removed by rough winds. This done, the beds so made will require no further attention until March or April, except to see that the covering is not displaced, and the results will more than compensate for the labour and time of waiting. Successional beds in the Mushroom-house will need making up, and those previously made should be spawned as soon as the heat has sufficiently declined to admit of its being safely done, and a few days later they should be covered with soil in the usual way.

Forcing Department.—A batch of French Beans should now be sown in pots for use in November. The pots, having been previously crocked, should be only half filled with soil, of a rich though somewhat light description, to allow of the young plants being subsequently top-dressed to the rims of the pots. Cooling's Ne Plus Ultra is an excellen variety for early forcing, the plants, dwarf and com pact in habit, being prodigious bearers of handsom Beans. *H. W. Ward, Longford Castle.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 8	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Bulbs from Holland, at Stevens' Rooms
TUESDAY,	Sept. 9	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.
WEDNESDAY,	Sept. 10	Sale of Bulbs from Holland, at Stevens' Rooms. Thame Horticultural Society's Show.
THURSDAY,	Sept. 11	Bury St. Edmunds and West Suffolk Horticultural Society's Show (two days). International Horticultural Exhibition at Dundee (three days). Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Imported and Established Orchids at Stevens' Rooms.
FRIDAY,	Sept. 12	Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms
SATURDAY,	Sept. 13	Sale of Bulbs from Holland, at Stevens, Rooms.

THE selection of a fitting INSECTICIDE to cope with the many insect pests that annoy the gardener, and often ruin his hopes, is a matter of no small consequence. It is true that there are many means, such as fumigation, the use of tobacco-water, Gishurst Compound, and a variety of other remedies which are all more or less applicable. But in too many cases they are only applicable on a small scale, inefficient, or too costly for use on a large scale; hence we deem it of interest to our readers to put before them some particulars from a recent address by Professor RILEY, the State Entomologist of the United States, to the Agricultural Society of the Hérault.

After a passing allusion to the means in general use, Professor RILEY proceeds to speak of three which, on an extended trial and on a large scale, have given the best results. These are —1, compounds of arsenic; 2, petroleum; 3, Pyrethrum. The two first act as a poison through the stomach of the insect, and are hence useful in the case of biting insects with mandibles, while the second and third are external poisons, killing the sucking insects by suffocation, or by their corrosive action. Arsenical preparations may be used with proper precautions without danger, and are the most important for all insects which effect their depredations by gnawing the foliage with their mandibles. The preparations recommended are arseniate of soda 3 grammes (a gramme = 15 grains), and 12 grammes of dextrine dissolved in 4 litres (say gallons) of water. Of this mixture 30 to 40 grammes are to be mixed with 30 to 40 litres of water. Another formula is 350 grammes of arsenic and 350 grammes of soda dissolved in 4 litres of boiling water. Of this mixture 1 gallon is to be mixed with 150 gallons of water. The principal advantages of arsenic are its cheapness and solubility. On the other hand, danger arises from its white colour, and its tendency to burn the plant.

Paris green, or Scheele's green, an arseniate of copper, obviates the objection as to colour, and, all things considered, has given the most satisfactory results. It may be mixed in the proportion of from 1 to 25 per cent. of starch, which renders it viscous and durable. In suspension, Paris green may be used in the proportion of 350 grammes to 150 to 400 gallons of water. The liquid requires to be constantly well stirred, and if mixed with a little dextrine, the viscidity of this liquid will be increased.

London purple, another preparation of arsenic, a bye product in the manufacture of annilin colours, is quite as efficient, much cheaper, more soluble, less poisonous, more viscous, and more durable in its effects.

Petroleum, especially that form known as kerosene, has been largely used, and with great benefit, in the case of the Cotton fields and Orange plantations in the Southern United States. It is used in the form of an emulsion distributed by watering through a fine rose or by means of spray. The emulsion is produced by thoroughly mixing, by means of a syringe, two parts of kerosene to one of milk at a temperature of 30 C. (86° F.)

An equally good emulsion may be prepared thus :—Kerosene, 8 gal.; soap, 175 grammes; water, 4 gal. Heat the soap and water to the boiling point, and add the petroleum to the boiling liquid. Thoroughly mix with a syringe for five or ten minutes. The emulsion, when made, is a cream-like fluid, which thickens as it cools. Mix the emulsion so prepared with water in proportions ascertained by experiment. With this emulsion so prepared and used excellent results have been obtained in the case of plant-lice, aphides, and scale. As a general rule one part of the emulsion mixed with twelve to twenty parts of water will be found most suitable, diluting the mixture in proportion to the delicacy of texture of the plant or the nature of the insect. While these mixtures may be applied with a fine syringe a special apparatus mentioned by Mr. RILEY gives better results. This is a circular vessel about half an inch in diameter and one-eighth inch long, into which the liquid is forced and made to circulate with the utmost rapidity, so that when the liquid is discharged from a small central orifice it is discharged with great force in the form of fine spray. We hope shortly to illustrate one of these machines, which are admirably adapted for use in fields, gardens, orchards, and plantations generally.

Pyrethrum, the powdered flower-heads of Pyrethrum roseum and other allied species, is well known in this country under the name of flea powder. Used in a liquid form it is very effectual—less so than the arsenical preparations, but not so liable to risk from accidental poisoning.

For use underground the most satisfactory insecticides to apply to insects preying on the roots are the sulpho-carbonates of potassium, sulphide of carbon, and naphthaline. Mr. RILEY speaks very highly of his petroleum emulsion in the case of the Phylloxera. The emulsion is diluted merely with two or three times its bulk of water and has no ill effect on the roots of the Vine, while it not only destroys the insects but their eggs also. At present the experiments have been made only on a small scale in the laboratory. It remains to be seen whether the petroleum will answer in the open ground and what modifications of the plan may be found requisite in practice. Professor RILEY, however, is convinced that it will prove more efficacious than any of the chemical substances applied to the roots. Moreover, according to him, it promotes the formation of new and healthy rootlets. Anything so strongly recommended by so competent an authority as Professor RILEY is worthy of the fullest consideration and the fullest trial. We must, however, add, that the experience gained in this country from the use of petroleum to the roots of Vines affected with Phylloxera has not been satisfactory. It must, however, be remembered, that petroleum in the form recommended by Mr. RILEY has not, so far as we know, been tried in this country, and we cannot but hope that a fair trial of the remedy as proposed by him, and following his instructions to the letter, may be made. With the characteristic caution of a scientific man, Mr. RILEY is careful to add, that what has been found most useful in America may not be equally advantageous here. There are questions of price, climate, machinery, and cost of labour, to be taken into account, which, though of secondary importance in the laboratory, are of cardinal importance to the practitioner who has to look to the monetary side of the question.

Lastly, we may mention another emulsion recommended in the case of mildew on the Vine, and that is a mixture of 1 per cent. of carbolic acid mixed with soft-soap and glycerin. This emulsion must be well prepared before adding water. For the proper application of this emulsion, the "pulverisator" invented by Professor RILEY, and of which our colleagues in France speak most highly, is invaluable. We hope our horticultural sundriesmen will not be long before they place in our hands this apparatus, of which such warm commendation is expressed.

—— APPLE CONGRESS REPORT.—We are glad to learn that this valuable and carefully prepared document, for which there has been much enquiry, is in the press. It will be found, as usual with Mr. BARRON'S work, full of interest and painstaking care in compilation.

—— MESSRS. KELWAY & SONS' GLADIOLI.—In our report of the Royal Horticultural Society's show at South Kensington on the 26th ult. Messrs. KELWAY & SONS were only credited with a Vote of Thanks, whereas they received an award of a Silver-gilt Medal for their fine stand of Gladiolus blooms.

—— DAHLIAS.—Mr. CHARLES TURNER, Royal Nurseries, Slough, we are informed, proposes to make a special and very extensive exhibition of all the different classes of Dahlias—show, pompon, and single—at the meeting of the Floral Committee on Tuesday next, the 9th inst., in the conservatory of the Royal Horticultural Society, South Kensington. The present showery weather being extremely favourable for the Dahlia, a more than usually good and interesting display of fine blooms may be anticipated, and every one knows that whatever Mr. TURNER undertakes he will accomplish. The exhibition will be continued up to and including Saturday the 13th inst.

—— FRANCISCEA UNIFLORA. — The American drug introduced under the name of "Manaca," or vegetable mercury (*Pharm. Journ.* [3], xiii., 798), has been submitted to a chemical investigation by Herr LENARDSON (Dissert., Dorpat). The drug examined is described as consisting of pieces of the stem and root of Franciscea uniflora, still covered with bark. The two most important constituents appear to be an alkaloidal body, named "manacine," and a fluorescent substance.

—— CHLOROPHYLL.—An interesting *résumé* of the recent work on chlorophyll done by Dr. HANSEN, an assistant to Professor SACHS, is given in *Nature* (July 3, p. 224) by Mr. MACMUNN. Dr. HANSEN considers that chlorophyll consists of two colouring matters, a green and a yellow, the relative proportions being 100 of the former to one of the latter. They are not combined, but exist side by side in the plant. Both have been obtained in the crystalline state, the green forming spheroidal crystals and the yellow crystallising in needles. This has been effected by removing the fatty matters accompanying them by saponification and separating the chlorophyll yellow by petroleum spirit, in which it is soluble, while the chlorophyll green is not. The solution of the latter shows a red fluorescence, but that of the yellow shows none.

—— BILBERGIA SANDERIANA. — A Brazilian species with tufted, glabrous, oblong-obtuse, mucronate leaves with strong, marginal spines and long, loose, many-flowered racemes, with rose-coloured bracts and long green flowers tipped with blue. It was discovered by GLAZIOU, in the province of Rio de Janeiro, and introduced into commerce by Messrs. SANDER, of St. Albans. *Belgique Horticole*, pl. 1, 1884.

—— CLERODENDRON FŒTIDUM. — The specific name of this desirable plant is rather misleading to the uninitiated. The foliage unquestionably is possessed of a disagreeable odour, but the flowers, on the other hand, are as agreeably fragrant. They are borne at the end of stiffish erect branches in rather large umbellate cymes, and as the flowers of each truss do not all expand simultaneously, a curious but rather engaging effect is produced. The unopened buds are of a deep rosy-red colour, while the expanded blossoms are of a soft pink. The foliage is ample, dark green, and handsome. Usually the plant assumes the character of a low bush, about 2 or 3 feet high, but luxuriant shoots sometimes attain a much greater height. It is figured in the *Botanical Magazine*, t. 4880, and being a native of Northern China, is consequently tolerably hardy. Were its merits better known, it would be worth while to put its hardiness to a much greater test than has hitherto been done in this country, with a view to acclimatise it. A flowering specimen at the foot of a south aspect wall at Kew has a conspicuous and telling effect, amongst a collection of other choice shrubs.

—— Wall Fruits at Ditton Park.—We have recently seen the wall trees at this old Buckinghamshire place, and can again testify to the splendid crops of Apricots, Peaches, and Nectarines Mr. Lindsay has again secured, in spite of the bitter weather of April last, when so much harm was done to our fruit bloom. Even Plums, too, have borne, and are bearing, excellent crops; and in all cases, be it understood, with but a minimum of protection given to the blossom. A little was given to some of the Apricot trees, though other Apricots unprotected were not less fruitful, whilst the now heavily laden Peaches and Nectarines got none whatever. Healthier trees, in spite of the great age of many of them, could hardly be seen. They make annually fine growth, and the foliage is luxuriant, green, and vigorous. Watering over the immense extent of wall covered at Ditton by trees of all kinds is out of the question, but the trees on the south borders get a mulching of straw or long manure. The real secret of the wondrous success of the trees growing here seems to lie in the preparation of the soil and method of planting, the which we have described in previous volumes. The soil itself does not differ materially from that found in any good garden, and certainly there is no large supply of good turfy loam to be obtained when new trees are planted. What is so remarkable is, that whilst hardly a season passes without these stone fruits giving good crops, those taken are, as a rule, much heavier ones than many gardeners permit their trees to carry. Mr. Lindsay for good reasons crops heavily; indeed, when we saw the Peaches and Necarines the other day the treees were studded as thickly as could be with fine fruit, presenting a sight that might well make many young fruit growers stare with astonishment.

—— Single Dahlias.—Owing to the ease with which these beautiful decorative flowers can be raised from seed, we now find them largely grown in almost every garden, where they serve many useful purposes, and they are specially valuable in supplying flowers for cutting. Hardly any prettier use, however, have they been put to than is seen in the kitchen garden walk at Heckfield, where Mr. Wildsmith has planted them at intervals close to the hedges of Cupressus Lawsoniana which margin the long flower borders here. Thus planted the flowers, of various rich hues, find in the dense greenery of the hedges a fitting background, whilst the monotonous faces of the hedges are relieved by means of much fitting floral beauty. On the terrace we have seen single Dahlias making not only effective beds, but also telling admirably in the raised basket beds, where with other tall free growing plants they create features that stand out in striking contrast to the pretty carpet beds below. Though thus freely employed in garden decoration, yet to supply cut flowers a score of plants should be put out in some odd corner for that purpose. It is hardly fair to plants to expect them to make a flower garden look gay and yet be required to furnish an abundance of cut flowers also. Not only does single Dahlia seed germinate easily, even without heat, but the parent kinds are so readily reproduced that any one possessing seed of a good strain may always be certain to get good flowers from their seedling plants. No doubt it is best to sow in a little warmth, and thus get the plants along and fit to turn out early and strong, but a few raised later may mean a longer continuance of bloom in the autumn, and some even later raised plants got into good-sized pots will, under glass, continue the succession with the Chrysanthemum right on to Christmas.

—— Cereus triangularis.—The flowers of this species, when in bloom, have a very imposing appearance, both from their great size and the curious effect produced by the spreading segments of the calyx-tube. The distinct differentiation in the colour of the calyx from that of the corolla is also a marked feature of this species. When fully expanded the inner segments, of great length and a clear straw colour, roll back in an elegantly stellate fashion, exposing the numerous large white petals and mass of stamens. If allowed to follow its natural disposition it would trail on the ground or scramble amongst other vegetation, and throw out roots from its great triangular stems. Trained up the rafters, however, as it is in the Cactus-house at Kew, the huge flowers are shown off to advantage. A figure of it appeared many years ago in the *Botanical Magazine*, t. 1884.

—— Odontospermum maritimum.—This, writes Mr. Wolley Dod, is the name sanctioned in the new *Genera Plantarum* for a plant hitherto better known by the generic name of Asteriscus or Buphthalmum. I have before called attention to it in these columns, but I shall ask to be allowed to repeat the call until so beautiful a plant is more generally grown. In its native countries, the Mediterranean coast, it is a perennial suffruticose herb, of spreading habit, about a foot high, abundant, amongst other places, on the Rock of

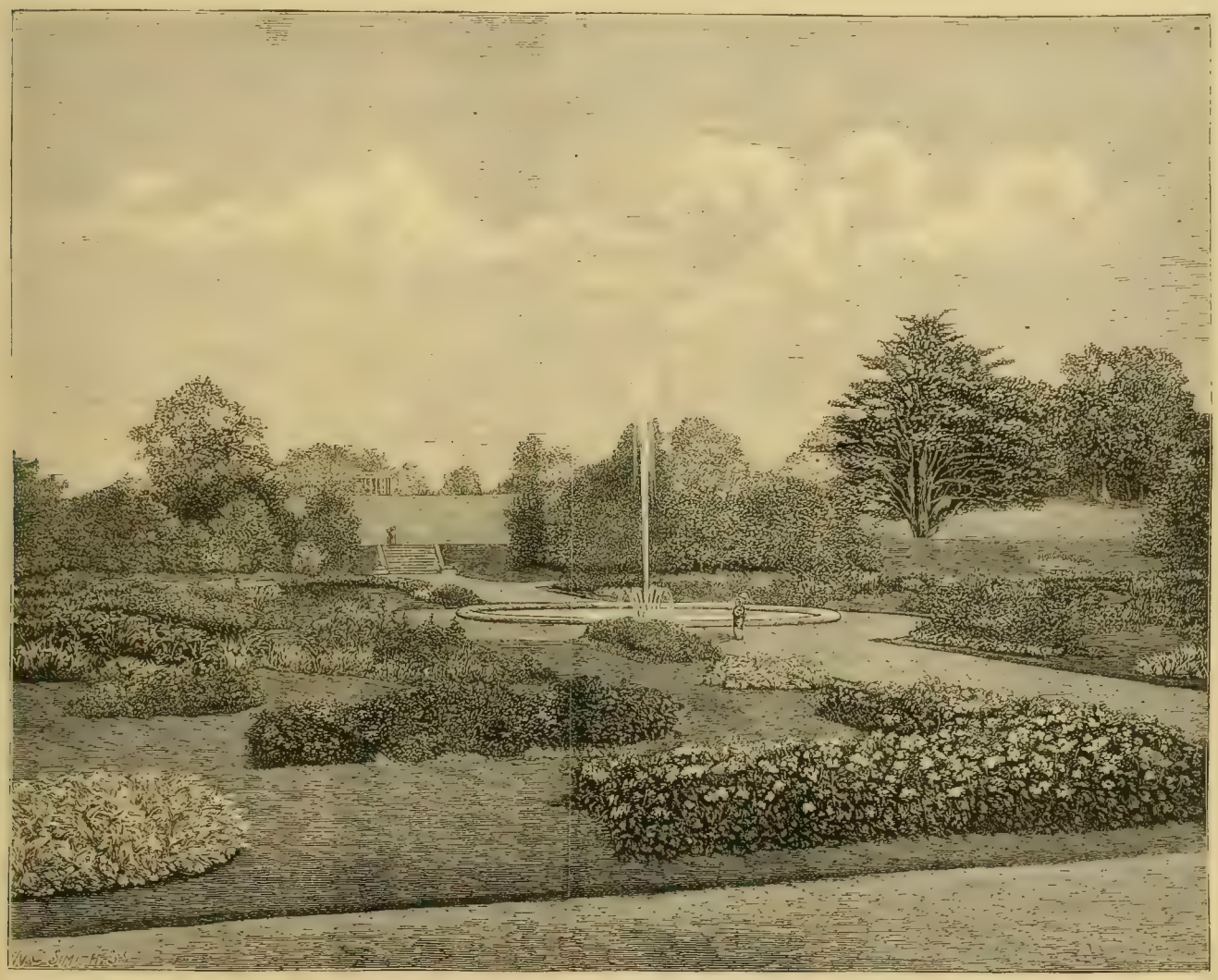


Fig. 59.—The flower garden at Audley End. (see p. 293.)

Gibraltar, where, as my son informs me, the shades of yellow of the flower vary. In cultivation it must be treated in this country as a half-hardy annual, to be increased by cuttings in autumn. As it makes nothing but flowering shoots, these must be slipped off when about 3 inches long, when the bud is small; the rough base of the shoot must not be cut, but the basal leaf carefully cut off without injuring the bark of the cutting, which must be inserted in silver-sand and struck under close glass. It is rather apt to damp off in winter, and must be carefully kept from frost as well as from damp. It repays all the trouble, for if planted in a sunny border of deep dry sandy soil, or a sunny rockery, in May, it produces from July to October such a mass of gay flowers of brilliant yellow —larger and brighter than those of the Corn Marigold—as will please the most fastidious of florists. The habit is dwarf and spreading, and it deserves to stand first in its class. *C.*

—— FUNGUS MEETINGS.—The Hereford "Fungus Foray" is appointed for the week October 13 to 18, the chief excursion, or Club day, being on Thursday, October 16.

—— DIPLADENIA ELLIOTTI.—Under this name Messrs. LUCOMBE, PINCE & Co., of Exeter, send leaves and flowers of this new form. The leaves are oblong, cordate, acuminate, wavy, and of black-green colour above, paler beneath. The flowers are borne in cymose racemes, or long clusters, each on a jointed pedicel. The calyx is not much more than a quarter of an inch long, of fine lanceolate acuminate segments. The corolla measures about 4 inches across, with a funnel-shaped tube 1¾ inch long, and a flat 5-lobed limb, the lobes suborbicular, obliquely acuminate, of the richest rose-pink, the interior of the tube being yellow, striped with pink. Holding the flower-bud in front of one the spire formed by the overlapping corolla-lobes passes up from below, from the left hand to the right—of course in the opposite direction when viewed from above downwards. It is necessary to mention these details, as botanists seem quite unable to fix conventionally what is "dextrorse" and what "sinistrorse." Taking BENTHAM and HOOKER as our authority the twist in the present case is dextrorse. About such particulars, however, cultivators care little—and wisely so. It is more to the point to indicate this, judging from the specimen before us, as a very lovely addition to a lovely group. What its history is we do not know, but we presume it is a seedling, and not a species. If this surmise be correct it would be better to alter the form of the name, so as not to convey a wrong impression.

—— HECKFIELD GARDENS. — It will interest many of our readers to learn that these charming North Hampshire gardens and beautiful surroundings will, through Viscount EVERSLEY'S usual kindness, be thrown open to the public again during the whole of the ensuing week, that is, from the 8th to the 13th, both inclusive. The flower garden is again this year exceedingly pleasing, and is, if possible, more attractive than ever. The hot summer has promoted the growth of all tender plants materially, and recent rains have given an air of freshness to the place that contrasts strongly with what we have seen during the summer. To reach Heckfield a charming ride through delightful country districts must be made, and near it may be found other attractive places in Elvetham, Strathfieldsaye, and Bearwood.

—— BIGNONIA RADICANS.—In a situation that suits it, this is one of the most striking things any one can have, as there is no other climber at all like it in colour, the big trumpet-shaped flowers which it sends out so freely in clusters at the ends of its shoots, being of a rich coffee-brown, contrasting well with the foliage. The only place where plants succeed well is on a wall fully exposed to the sun, as they require a good deal of heat to ripen and harden the wood, which, unless it gets into a mature condition, suffers from frost, and is often killed during winter. The soil for planting should be made light, and have drainage, and the shoots, as they grow, should be kept tied or nailed close to the wall till the space is covered, when the plant may be allowed its own freedom. As the flowers come on the young wood it is necessary to prune every spring, which should be done by spurring all the best shoots in, cutting them back to the last bud from whence the plants will break and show bloom. In a general way plenty of suckers are sent up from the main roots near the base, but if not, and an increase be desired, cuttings may be made of any of the prunings, and if they are put in under handlights in a sheltered position and protected, they will strike by the spring. On rough walls the branches of Bignonia radicans cling like Ivy, and therefore require but little help to keep them in their place as they grip tenaciously and hold on to the bricks behind in a very close way.

—— THE "GARDENING WORLD."—The world is a very big place, or a very little place, according to the standpoint of the observer. It is, therefore, both big and little. The centre of the gardening world seems to be comprised within a mile of Covent Garden; indeed, 17, Catherine Street, whence the new *World* starts on its career through space, is within a stone's throw of the market: but the circumference, who shall tell where that is? It is just that uncertainty, we suspect, that has led Mr. BRIAN WYNNE to cast his stone into the pool in the hope that in the ever-widening circle he, too, may cast his net, and secure his share of the haul. Why not? Long practice in this office should render him an expert, and we have none but good wishes to offer him in his new career. He starts well, and doubtless in future numbers will break out into grooves not quite so much like the old ones. Matter, type, paper are all excellent for the money.

—— THE FOREIGN GRASS AND CLOVER CROPS. —Information which has just come to hand shows that a more favourable yield of the crops of grass seeds generally than was anticipated some time since is being realised, some of the leading sorts having been harvested in larger quantities, while some will be as scarce as last season. At the present time there is a brisk demand for the stronger and heavier seeds, as might be expected. Meadow Foxtail and Meadow Fescue have been harvested in very fine quantities, and prices range lower than they did. The crops of Cocksfoot appear to have been very large everywhere except in Germany. The weather during harvest time was generally unfavourable, and care has to be exercised in the selection of samples, the general quality of which is undoubtedly below the average. Poa pratensis shows fine quality, and the crop is more extensive than for some years past. Poa nemoralis and P. trivialis have been harvested in their usual limited quantities, the latter, however, showing a quality seldom matched. The German growers state that the seeds offered from the United States of America under the names of P. nemoralis and P. trivialis are spurious, and mostly P. pratensis. Hard and Sheep's Fescue have come in from the growers in much smaller quantities than was anticipated; it was confidently believed that a satisfactory, if not a heavy crop, would have been gathered, but those appear to have best realised the position who predicted a small yield. The quality also is unsatisfactory, and there are very few good samples. White and Alsike Clovers promise well in Germany, but in the same districts of Darmstadt but a small yield of red Clover will be forthcoming, though there is a prospect of much better crops in Silesia and Bohemia.

—— CROPS OF THE YEAR IN BRITAIN.—On Saturday last M. ESTIENNE, of Marseilles, issued the first copies of his annual volume on the crops of the year in the Northern Hemisphere, entitled *Avis sur la Récolte des Céréales en France et à l'Etranger*. The date is about five days earlier than is usually the case, and this fact alone points to the fact that the season of 1884 is a noteworthy one for its earliness. This annual volume is looked forward to by the corn trade with great interest. It is published by the great firm of corn merchants at Marseilles, and is embellished by a large coloured map of the Wheat crop in the various departments into which France is divided. So far as Europe is concerned, an average harvest of Wheat is reported, but when America and India are thrown in the harvest of this cereal must be put down as one especially bountiful. Next to France we have the crops of the United Kingdom reported on. Besides a number of very short excerpts from letters, &c., there is one very full report—the fullest in the volume—on the English harvest in 1884. This was written on the 11th of August, and gives the following picture of the crops of the year—100 being taken as representing an average:—Wheat, 112.2; Barley, 98.1; Oats, 94.3; Potatos, 108.4; Beans, 88.2; Peas, 91.4; roots, 78.8; grass hay, 79.1; and clover hay, 82.4. By this time these figures have been practically confirmed by subsequent reports—those collected by the *Agricultural Gazette* a fortnight later being almost the same. In spite of a few bad reports from those who have already used the threshing-machine, it is certain that we have this year a bountiful Wheat harvest, and one of the best since 1874, though not quite equal to that of 1868. Barley, too, is a good average crop, the grand weather for ingathering bringing up the yield slightly, and giving us also a good sample. One of M. ESTIENNE'S correspondents gives his estimate of the yield of Wheat at 11,000,000 qr. for consumption, and this is based on the fact that the crop is exceedingly good in those districts that are specially adapted for Wheat, and where the yield is always largely above the 28 bush. per acre adopted as the average of the kingdom. This he estimates will leave us dependent on foreign supplies for at least 13,000,000 qr., and to meet this demand at least 20,000,000 qr. may be expected to be offered us. The reports on the harvest in Scotland all speak of the prospect as good. Both for this country and Ireland the season has been good, though the coldness of the rains of May and June acted adversely to the growing crops. In Ireland the Potato crop promises to be an abundant one, but the drought in August has almost destroyed the green fodder crops.

—— THE HEAT IN NORFOLK.—Those young men who are given to convey their thoughts to their fellow mortals in slang phrases will hardly fail to designate the present season as having been "a scorcher." The effect of the great heat and general absence of rain has, in Norfolk, become during the last week very observable by the effect it has produced upon the foliage of many of the trees. Ten days ago we noticed that some small Elm trees growing beside the road which leads from Lynn to London were casting their leaves as if it were October; their foliage had a beautiful golden hue, but it was sad to see at the beginning of August the yellow leaves falling in showers as they do after a frosty night in early autumn. Many other roadside Elms have followed suit. Three days ago we noticed some of the Horse Chestnuts had also assumed their autumnal hue. But perhaps the trees which have suffered most have been the young Beeches—their aspect is indeed melancholy to behold. The leaves are brown and dead, but have not the warm russet tint which is so characteristic of them when they die naturally. Many Ash trees we particularly noticed had their leaves truly scorched; they look as if they had been destroyed by a keen frosty blast blowing over them. The hedges, too, are in most places beginning to look yellow and autumnal. The Larches have suffered, too, very much in places; but the Oaks are as green as ever they were. These effects are at present confined to the smaller trees almost entirely.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 1, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: —The weather has been generally cool, unsettled, and showery. Thunder occurred in some parts of England at the close of the period. The temperature has been from 2° to 4° below the mean for the time of year. The maxima, which occurred on various dates in the different districts, ranged from 70° in the Midland Counties, and 69° in "England, S.," to 63 in "Scotland, N." and "Scotland, E." The minimum, which were observed during the earlier part of the week, varied between 37° and 42° in most parts of the kingdom, but in the "Channel Islands" the thermometer did not fall below 51°. The rainfall has been less than the mean in "Scotland, E.," and "Ireland, S.," and about equal to it in "England, N.E.," but more in all other districts. In most parts of England the excess has been considerable. Bright sunshine has been much less prevalent than of late. In "Scotland, E." the percentage of possible duration amounted to 50, and in the "Channel Islands" to 46, but elsewhere it ranged between 18 and 34. Depressions observed:—At the commencement of the period an anti-cyclone existed to the south-westward of our islands and west or north-westerly breezes, with fair but cool weather were reported generally. On the 27th ult., however, the high pressure system receded to the southward, and from that time till the close of the week numerous shallow depressions advanced over our islands, occasionally varying southerly and westerly breezes and showery weather.

—— GARDENING APPOINTMENT. — WILLIAM BARRY, lately Plant Foreman at Arundel Castle, as Head Gardener to HARMAN GRISEWOOD, Esq., The Den, Bognor, Sussex.

DISEASES OF GRAPES AND GOURDS.

IN one of the vineries at Chiswick the growing bunches of Grapes are badly attacked by the fungus named Oïdium Balsamii, Mont. The disease is specially noticeable in the Black Alicante and Gros Colmar varieties. The fungus does not attack the leaves or fruit but appears to generally fix itself near the base of the main stem of the fruit panicle. This part of the stem it encircles with a broad greyish ring of mildew, which grows on a gouty swelling which is produced by the fungus. In some examples the Oïdium may be detected on all branches and branchlets of the panicle. I have never seen this fungus invading Vines before, and it is most desirable that it should be kept in check as Oïdium Balsamii, Mont., is a much larger and more robust growing species than the common O. Tuckeri, B., which one so commonly sees on Vines. Sulphur or other remedies should be used, as the fungus is likely to spread, and the gouty swellings on the stems are a bad sign, as they certainly indicate the potency of the visitor over the Vine.

In another house at Chiswick where American Vines are grown there is a prodigious growth of the same fungus on certain varieties of Gourds. Some plants are so badly attacked that they look as if their great leaves had been whitewashed, so thick is the deposit of mildew. I have never seen the fungus on Gourds before, and it is remarkable that some varieties in the same house are quite free from it. The American Vines are not attacked, but some of them exhibit patches of the smaller O. Tuckeri, B., on the leaves.

Of late years Oïdium Balsamii, Mont., has spread greatly in this country. At first it was only known on Strawberries and Mullein, now it has been recorded it its worst form on Turnips and Cabbages, Mr. Plowright and other correspondents sent extremely bad examples of the disease on Sainfoin this summer, and now we have it on Gourds and Grapes. The fungus appears to be capable of invading at least six natural orders of plants—the Scrophulariaceæ, the Rosaceæ, the Cruciferæ, the Leguminosæ, the Crassulaceæ, and the Ompelideæ. The fungus was illustrated in the *Gardeners' Chronicle*, September 25, 1880. *W. G. Smith.*

OUR FRUIT SUPPLIES.

THE recently published official trade returns for last year enable us to get some insight into our dependence on fruit from across the Atlantic. From the United States we received but 273,825 bushels of Apples, valued at £126,219, against double that quantity imported in the previous year, and but 2420 bushels of unenumerated fruit, against 4016 bushels in 1882. From Canada also only half the quantity of Apples—105,113 bushels, in place of 203,104 bushels. From the Azores came 191,799 bushels of Oranges, against 314,236 bushels in 1882, and 16,376 bushels of unenumerated fruit—1600 less than the previous year. The Brazil-nuts received, to the value of £27,000, was only half the amount of the previous year. From the British West Indies we received Cocoa-nuts to the value of £58,116; and from British Guiana Nuts (probably Sapucaia) value £3383. The total imports of fruit in 1883 were as follows, with the value :—

	Quantity.	Value.
Almonds, cwt.	61,654	£232,260
Apples, bushels	2,251,925	553,488
Currants, cwt.	1,026,584	1,423,062
Figs, cwt.	123,434	262,671
Oranges and Lemons, bushels	4,477,043	1,704,826
Raisins, cwt.	588,309	1,057,934
Unenumerated fruit, raw, bushels ..	2,660,475	1,380,952
,, ,, dried, cwt.	299,866	303,337
Plums and Prunes	41,121	95,307
Nuts : Chestnuts, Walnuts, Cocoa-nuts, Brazil nuts	—	455,124
		£7,469,961

£7,500,000 is a large sum to pay annually for foreign fruit.

HOME CORRESPONDENCE.

Potato Disease. — In spite of the weather here and there throughout the country the Potato disease manages to keep alive. It has a hard struggle for existence, as the numerous burnt Potato leaves show, each burn being nothing more than a spot where the mycelium of the fungus has gained an entrance only to be killed by the excessive heat. We shall have it cool again some time soon, and the Peronospora will have its turn. When this time comes, may I suggest to those readers of the *Gardeners' Chronicle* who grow Potatos and are sufficiently interested in the subject of the Potato disease, that it is highly desirable to notice whether the disease in the tubers commences on the upper or on the under surface? If it be true that the disease reaches them through the underground stems from which they spring, then the disease will be found commencing at the point of attachment of the tuber and the stem; and also the underground stems will be found diseased before the tubers themselves are. But if, on the other hand, the disease reaches the tubers from above, then the upper surface of the tubers will be the first to be attacked. This point needs no microscope to decide it, and when once decided by practical men, will do more to check the ravages of the disease than pages of controversial literature penned by theorists. *Charles B. Plowright, 7, King Street, King's Lynn, Aug.* 15.

Capparis spinosa.—I am not surprised that my friend Mr. Ewbank is delighted with his flowering plant of Capparis, for I know of none more beautiful, but I am surprised that it is not more grown. I feel quite certain that it would be perfectly hardy in the south of England, especially near the coast. Many will recollect the old plant of it that grew in the Oxford Gardens in a most unfavourable spot. I grew it here for many years, and often had flowers on it, though only in good summers, but I lost it in the bad winters of 1880-1. It should be planted in the very sunniest place that can be found, and I fancied it liked a stony soil, and stones all about it. Those who cannot grow it out-of-doors should grow it as it is at Paris and Kew—planted out in a frame, and the lights off all the summer; in this way it will take care of itself, and no one will grudge the room it will occupy. *Henry N. Ellacombe, Bitton Vicarage.*

—— Mr. Ewbank is fortunate in producing the lovely flowers of this plant, but as doubt is expressed whether or not it has flowered before in this country I may say that it flowered at Kew some years ago both against the west wall of the old economic-house, which stood somewhere on the ground of the present Victoria-house, and also against the east side of the wall of the herbaceous ground facing the new rock garden; it therefore will flower at the foot of a wall in a climate less mild than that of the Isle of Wight. But the finest specimen I have ever seen was in the Jardin des Plantes, of Paris, where it grew planted out in a frame, open in summer, when I saw it, but, no doubt, it was covered in winter. Mr. Ewbank has well spoken of the beauty of the flowers, which I well remember, and I have long looked forward to giving it a position like that I saw it enjoying in Paris, which it will have, fortunately, before long. It is well worth such care, and probably it never can flower in a pot. This is the finest plant one can have to illustrate the usually stipitate ovary of the order. *R. Irwin Lynch.*

Starlings.—I hope you will allow me to give some expression to my indignant feeling on reading the letter about starlings in the *Gardeners' Chronicle* of August 23. Persons who are so ignorantly cruel and so blind to their own interest as to destroy these and other small birds deserve to suffer in their gardens. Of course it is well known that starlings, blackbirds, and thrushes will all of them devour fruit when they can get it. Therefore, as you most justly remark, the fruit must be protected by nets, or saved in some way. A gardener who is not a match for the birds is not worth his salt. If he be ignorant and witless he will take his gun, or his unlawful poison, and destroy them right and left—thus doing permanent injury to his garden in order to save a season's crop of fruit. I remember how once in the Cherry season, our gardener being on the watch betimes one Sunday morning, spied a whole flock of starlings in the very act of bearing down upon our finest Cherry tree, which was loaded with fruit. He did not get his gun, but he promptly fetched ladders and his men, and the whole crop was safe in our baskets before nine o'clock, notwithstanding it being Sunday morning. Birds are always more on the alert on Sundays, therefore you must meet their cunning and quickness with your own decision and good sense. In the Cherry orchards about here they have boys, early and late, to "keep" the birds. The analogy may not hold good all round, but it is surely much the same thing to leave the fruit unprotected from birds as it would be to leave the garden unfenced, for the cattle to come in and devour the cabbages and tread down the lawns—they like the change a great deal better than always eating plain grass. But if the starlings take advantage of a quiet morning for their fruit raids they also make good use of it for energetic grub-hunting. At this moment there are a dozen or so of starlings—mostly young, as I judge from their brown plumage—busily engaged all over that part of our lawn seen from the windows. They are pulling up grubs as fast as their beaks can go from turf so burnt in patches you would think it hardly possible anything could live in it. Two or three greenfinches (your correspondent's friend would have shot them long ago) are at the same work, and several sparrows also. All day long, indeed, at this season birds of all kinds are at work on the lawns, and even upon the gravel walks, pecking at minute weeds. If it were not for them, indeed, I know not where we should be, as to herbage at least. Chance the other day revealed something of the enormous multitude of insect life (which unchecked means destruction to green things) that exists even in these sun-burned lawns. Some large fur carriage rugs were laid out in the sun on the grass some days ago, the fur being uppermost. On being turned over after a few hours the scarlet cloth linings were found to be thickly sprinkled over with hundreds of little brown weevils, besides a good many brownish grubs, all of one kind. All these insects—though generally unseen by our eyes—must, therefore, be living in the grass or just below the surface, notwithstanding the continual efforts of the birds, whose prey they are. And since it is my pleasure to watch our birds I know for certain how hard they work, while their fine condition proves how vast must be the numbers of fat larvæ, &c., they must swallow. They are as plump as possible, and without fruit. *E. V. B.*

Mirabelle Plums.—These should be more commonly grown than they are, as they are particularly useful for winter preserving, in sugar as whole fruit, candied, or for compotes in syrup. There are three sorts, the yellow, green, and white, all of which ripen late in August or in September. The fruits are small, about the size of a starling's egg, and are produced in great numbers on standard trees, which will succeed as such in all those districts in which Denyer's Victoria and Early Orleans do well as orchard trees. There is a late sort that does not ripen till the end of September, and then only on a wall, for which position it is hardly worthy, and there is an early sort called Dorrell's variety, which is probably not to be procured in this country. The trees are dwarf growers, therefore as suitable for the small garden as for the large one, and being great bearers when of mature age growth is never rampant, and they will be found to need but little pruning. *M.*

Pine-apples in Peat.—Many of the old Pine growers, when Pine growing was more generally carried out than is the case at the present time, advocated the use of peat-soil for the potting of the Pine. Others again regarded it as the most unsuitable material for the purpose. The only peat that has been so found is that light spongy kind, such as is used for Orchids and stove succulents; but the peats that are firmer in their consistency, and that are taken from land that is not boggy, and which is, therefore, sweet smelling, and have not over-much sand or iron in them, are generally good enough for the purpose. It is particularly useful for winter fruiters, but should have been thrown up for a couple of seasons, so that it has become partially decayed. With this material the Pine will need pots much smaller than it is usual to give them when growing in other soils, the fruiting pots not needing to be more than 8 to 10 inches in diameter. The soil soon becomes quite matted with roots after potting, a condition of things seldom seen when they are grown in loam. In this state of the ball water may be given freely when it is required without any fear of its becoming waterlogged if the drainage is good. If the peat is not naturally sandy enough clean coarse grit should be added to increase its porosity. No manure needs to be added to the soil, but stimulants may be given in the shape of manure-water, and top-dressing with fresh horse-droppings mixed with peat in the case of leggy plants that require it. *O. O.*

Cucumber Growing.—I notice that few amateurs this year have been able to grow Cucumbers with any success; they say the fruit turns yellow and drops off, or the plant withers and dies away. Although but a novice myself in the matter, I have met with great success in growing Cucumbers, especially this season. My plan has simply been to keep the vine very short of leaf, and cut it back freely, to raise the light at the top of the frame an inch or two for air on warm still days only, and water well each evening with hot water. By these means I have this summer obtained off a single plant in a cold frame over thirty full-sized

Cucumbers, with promise of a number more. My frame lies east and west in an exposed corner of the garden. The plant is the Telegraph. *H. B. Ewald.*

Smut on Primula farinosa.—The article on Urocystis primulicola, by Mr. W. G. Smith, which appears on p. 268, treats of this fungus as if it were as likely to attack any other of the genus as P. farinosa, on which it has been found. I may therefore remark that I have for some years grown several species of Primula, as denticulata, rosea, sikkimensis, capitata, in the same bed with farinosa, and none of them has been attacked. P. capitata is a closely allied species, and comes into flower just as P. farinosa is going out of flower. It ripens seed abundantly in August and September, and I gather the seeds every year; but I have never seen a symptom of Urocystis upon it. *C. Wolley Dod, Edge Hall.*

Raising New Varieties of Potatos in Ireland.—A new variety of Potato, suitable for general purposes, that will be an improvement on established kinds, is a matter of national importance. You will be pleased to hear something is likely to result from Colonel Nolan's Potato Committee of the House of Commons, that sat and received evidence in 1881 in this direction. The Board of National Education, through their agricultural department, adopted one of the recommendations "to distribute seed from the 'apples' raised in America among the teachers of agricultural schools in Ireland," and offered handsome prizes for the most satisfactory results under the following heads:—1st, 2d, and 3d prizes, of £10, £5, and £3, for the best "round" Potato for table use; similar amounts for the best table kidney-shaped variety. A third set of prizes for either a round or kidney variety that shall prove the earliest and best, to be tested in 1885; the fourth class—the amounts in each case being as stated—being for the best variety for cattle feeding. I may here remark that this is a department of Potato raising hitherto most unwisely neglected. The last is a prize of £10 for the best essay embodying the experience obtained. I had my attention drawn to this matter a few days ago when visiting one of Lord Besborough's school farms at Garryhill, Carlow, managed by Mr. Loughlin Ryan, who has been singularly successful with the seed sent him in 1882 by Mr. Carrol, Superintendent at the Albert Institution, Glasnevin, on behalf of the National Education Board. The seed of 1882 were the size of marbles; in 1883 and this year are full-sized and fit for use. We examined several drills; some had the stalks withered some weeks ago—these would be early varieties; others were growing robustly, and will evidently not be fit for use for some time—these would be late kinds; some were dwarf and some robust, and when lifted we found none in size, colour, or shape, exactly similar. If others are equally successful all over Ireland, the final selection of the varieties, quantity and quality considered, must be a matter, as I stated, of national interest. None were blighted so far. *W. J. Murphy, Clonmel.*

Balsams at Flower Shows.—How seldom do we see at flower shows plants of Balsams worthy the name of exhibition specimens. What are produced are generally lanky plants, with gaunt stems carrying flowers of really poor quality, and yet how finely Balsams can be grown in the open ground. Let any one pay a visit to Messrs. Sutton & Sons' nursery in the London Road, Reading, and they will see there plants of Balsams, growing in the open ground, of large yet symmetrical growth, vigorous and free and yet compact, and bearing large full flowers of remarkable quality and of varying colours. It was a pleasure to look upon a strain of such excellent quality growing so finely in the open air. Defects in exhibition Balsams must be caused by indifferent cultivation or a bad strain, or perhaps both. The best of cultivation will not, however, convert single flowers of Balsams into double ones. Those who grow Balsams for exhibition would do well, after they have become established in their blooming pots, to stand them out-of-doors plunged in ashes or cocoa fibre, giving them room to develope and keeping them well watered. It is a mistake to keep the plants in crowded houses, where they become drawn and of weakly growth, while the flowers are of very poor quality. *R. D.*

Lilium neilgherrense.—I received two dozen bulbs of this Lily direct from India early last spring, and about twenty of them are flowering; and four or five of the bulbs were not sufficiently strong to produce a bloom. The bulbs were all started singly in small pots in a little heat, and afterwards removed to a cool pit; several of the strongest were shifted into 7-inch pots after making a few inches of growth, the soil used being loam, leaf-mould, and sand, with a little charcoal and broken bone. I planted several of them outdoors in May in a herbaceous border, where they appear to do equally as well as in pots, but flowering a little later. I noticed the peculiarity mentioned by your correspondent on p. 276, that several of the growths started away from the bulb in a horizontal direction, but which afterwards grew erect; it appears to have the characteristic of L. Brownii in only producing one flower on a stem. Some of the strongest grew to a height of 2 feet, others only 12 inches. *J. T. Fletcher, Coppins Gardens, Iver.*

Nicotiana affinis.—Is it generally known that seeds of Nicotiana affinis are sufficiently hardy to pass the winter in the open ground and come up freely in the spring? This is my experience of it, as many scores of plants came up this spring in a border in which there were a few plants last year. This is all the more strange as the soil is far from raising seedlings of anything in the best of seasons, and many things, such as Candytuft, Coreopsis, Chrysanthemums, Godetias, Dianthus, Mignonette, Larkspurs, &c., positively refused to come up this year in the same border, the only things which managed to brave the cold and parching east wind experienced during March, April, and the early part of May being Sweet Peas, Malope, Calendulas, and the Nicotiana. *J. C. Tallack, Prideaux Place, Padstow.*

Æcidium Berberidis: Abnormal Growth.—In the Biological Laboratory of the Health Exhibition Mr. C. B. Plowright has under exhibition a Barberry bush covered with the fungus of Barberry blight, named Æcidium Berberidis. A remarkable point about the South Kensington fungus is that every example is strangely abnormal. At A, fig. 60, we have engraved, enlarged ten diameters, the normal state of the familiar little yellow cups of the Æcidium, and at B the abnormal growths, to the same scale, as found on Mr. Plowright's plant. The little Barberry bush is profusely covered with these long yellow growths on the stems and leaves, sometimes on both sides of the leaves. They look like little

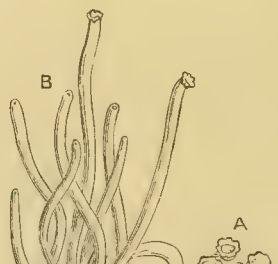


FIG. 60.—ÆCIDIUM BERBERIDIS.

Golden Rods instead of shallow saucers. Under the microscope they are seen to be enormously elongated, sausage-shaped cups or horns, each horn, like a true fungoid cornucopia, being stuffed full of spores; at maturity the apex of each golden horn bursts and distributes the spores in the ordinary manner. These growths remind one of what is seen in the closely allied genus named Rœstelia, or in the remarkable elongated cups of Æcidium ornamentale, on Acacia, as figured in the *Gardeners' Chronicle* for July 16, 1881. What has been the inciting cause of this strange, weird, and unnatural growth it is difficult to imagine. The bush, we learn, was some time back strongly inoculated with one of the Puccinias of Corn Mildew, and there is a small faggot of Puccinia tied close to the bush. Perhaps the terrible, never-moving apparition of the bunch of Corn Mildew has been too much for the poor Barberry. *W. G. Smith.*

Gaillardias.—In a seed list it is remarked that "Gaillardias make charming plants in pots, and it is surprising they are not better known and more generally cultivated." That they are not so, can only arise from the undoubted fact, that their many excellent features have not hitherto been made sufficiently prominent. Any one who has been growing these hardy annuals through the long prevailing drought must have been struck with their remarkable tenacity of growth and blooming, and apparent appreciation for those atmospherical elements which have proved so detrimental to many other flowers. Very specially is the Gaillardia a long blooming plant, in fact, from its first bloom in June till the frosts of early winter, it never ceases to produce flowers. Then the flowers, of various forms and colours, are borne on long wiry stalks, and are singularly useful for bouquets, and other personal or domestic uses. Raised from seed with exceeding ease and thus obtained cheaply, all specially good forms may be propagated by means of cuttings in the autumn, and these make capital pot plants or planted out in a mass give a truly grand bed of bloom. That charming chocolate and orange-coloured double kind, G. Lorenziana, from propagated plants, not only comes very even in growth, but blooms with wondrous profusion. A pretty straw-yellow double kind also makes an effective mass, and is equally amenable to propagation. If doubles are not admired, the single forms, whether pure yellow, crimson, or chocolate and yellow, with some other mixtures of colours, are charming, and of themselves will make pretty decorations. Gardeners who have not yet made themselves familiar with Gaillardias should do so, and they will make them enduring friends. *O. P.*

Two New and Distinct Vegetables.—Messrs. Veitch's "Selected Extra Early" Pea, and Daniels Brothers' Cabbage Lettuce, "Continuity." The above Pea was sown in the open ground early in March, and came in for use a week sooner than Dickson's First and Best, which were sown in pots in January, and transplanted on a west border in March, and this is undoubtedly a "very extra early" Pea, and prolific bearer. Daniels Brothers' Cabbage Lettuce, like the above, was grown here for the first time. It was sown early in March, planted out in April, produced nice close-hearted Lettuce through the months of May, June, July, and part of August, without the slightest sign of a single one running to seed in spite of the extraordinary hot summer we have had. Continuity is the proper name for this Lettuce; this and the Pea are two grand additions to the kitchen garden. *J. Perkins, Thornham Hall.*

Prolific Apples.—A year or two since I drew attention to an old Apple tree I have, which never fails to produce a crop of some sort. Last year it had a full crop, and this season, although the tree catches the east wind badly, yet it is carrying for the season a very fair one. The kind has turned out to be Waltham Abbey Seedling, a variety that, whilst so permanently prolific, yet seems not to have been known to market growers, to whom in such a season as the present its crop, as with me, over a large area would prove valuable. Perhaps, as "M." said last week, there is so much neglect by market growers of other than early kinds of Apples that many a really good later sort has been overlooked. I still think, for a cottager's garden especially, Waltham Abbey Seedling is the most serviceable Apple in cultivation. I find Golden Noble bearing fairly well this year amongst many kinds that are barren, and think it ranks as a prolific kind, though by reason of its peculiar habit of fruiting at the extremities of the shoots, rather than from spurs, it never carries a heavy crop. It is a first-rate kitchen Apple, is very handsome, and keeps well, and therefore is always worthy a place in every orchard. Nelson Codlin is another comparatively little known kitchen Apple that seems to be always productive, and makes a good successor to the Suffields, Manxs, and similar early kinds. Amongst dessert Apples I find one of the best bearers this year—and it is almost a perpetual bearer—is Yellow Ingestre, and, curiously enough, that has the same habit of fruiting which is seen in Golden Noble. Taking one year with another, it will be found that the most prolific Apples in the long run are not those which now and then produce enormous crops, but rather those which always produce some fruit. *A. D.*

Impatiens Sultani.—In answer to your correspondent, "A. D.," permit me to say that the above plant is seeding freely in a cool conservatory here. Most of our plants were raised from seed this spring, and these are in every way more desirable than those propagated from cuttings. I have lost a lot of seed through not knowing when they were ripe, as the pods continue a bright green colour until they burst, scattering the seeds and detaching themselves from the plant at the same time. I could not understand where the pods were going, but on making a search underneath the staging I found them curled up in a most peculiar manner, and without a seed in them. To-day I have picked two pods, quite ripe, but with not the least appearance of being so; one of these contained twenty-nine, and the other fifteen perfectly ripe seeds. The pods burst in my hand directly they were touched. I think it is just possible that a great improvement may be made in the habit of the plant, by carefully selecting seed from the dwarfest and most floriferous plants, as I find there is a great difference in plants raised from the same packet of seed, and grown under precisely the same conditions. *J. C. Tallack, Prideaux Place, Padstow.*

Tomatos.—In all directions around London do we find the culture of the Tomato under glass for the market rapidly increasing. Whether the product of a fancy or the genuine growth of a taste on the part of the public for one of the most wholesome of fruits it is certain that the demand for Tomatos is rapidly swelling, and the full extent of its ultimate development cannot be measured. The public, it is found, favour handsome medium sized fruits that are of rich colour, indeed deep colour is almost more essential

to secure good sale than beauty of form. At the same time market growers are partial to kinds that are found to be most productive, early and quick ripeners; and in the majority of cases it is found that each grower has what he calls his own variety, though most likely differing little from a score of others. That all Tomatos must of necessity be raised from seed renders the multiplication of kinds not only easy but natural, and though difference between a score of assumed sorts may be but infinitesimal, yet the growers have a fond preference for children of their own naming. Really it is not possible to produce much greater variety in the Tomato than now exists if Hathaway's Elcelsior, for instance, be regarded as the type of a favoured market variety. The inevitable determination towards beauty, roundness, and colouring will but serve to reproduce its kind even though named Perfection, Prolific, Favourite, or anything else. The two most distinctive Tomatos of recent introduction are the Pear-shaped Chiswick Red, and the large deep yellow Golden Queen, but neither will do for market work, though very useful in private gardens. There is a wide field open to raisers of Tomatos for the introduction into them of more pleasant flavour, and good service will be done by any one who will help to make them into enticing dessest fruits. *E. T.*

Zauschneria californica.—I was glad to see your notice of this old friend on p. 267. It is so seldom met with I had almost forgotten it, until I saw it growing a few days since in the gardens of J. Burroughes, Esq., Ketton Cottage, who has a nice collection of herbaceous and alpine plants; some of these were very showy and well cultivated, but the above plant stood out prominently among the others as one well worth growing. I have heard it said that it is very liable to be killed by the frost. This specimen, however, had been growing there about ten years, and merely has a little loose rubbish shaken over it as a protection. It has one drawback—it is very liable to run about and wander away gradually from its original position. *W. H. Divers, Ketton Hall.* [It grows best on beds somewhat raised above the general level, and prefers a dry site to a wet one. Ed.]

THE FRENCH FRUIT TRADE.

Our import trade of garden and field produce from France goes on increasing yearly, judging by the official Board of Trade returns recently issued for the past year. Comparing the values of 1879 and 1883 the figures are as follows:—

	1879.	1883.
Plums, Prunellos, and Prunes	£55,131	£85,809
Succades	64,260	66,713
Raw fruit (unenumerated) ..	264,902	273,640
Nuts, used as fruit	66,778	103,791
Potatos	502,968	434,808
Peas and Beans	36,776	17,592
Clover and grass seeds ..	147,380	208,227
Garden and other seeds ..	57,591	80,778
Hops	41,462	91,276
Raw vegetables	180,639	229,186
	£1,417,887	£1,591,820
Wine	2,472,588	2,697,486
Brandy	2,117,376	976,137
	£6,007,851	£5,265,443

Adding wine and brandy, we find that we pay to our neighbours across the Channel for the items named, between five and six millions, besides the large sums for agricultural and dairy produce, and many unenumerated articles. The raw fruit imported last year was much below that of 1882, which was in value then £425,695. The preserved fruits received do not vary much in quantity, the demand evidently being limited to the higher circles. The supply of French Potatos does not vary much. Hops is a new product, which is finding a demand from our brewers. It is strange that our supply of French wines has kept pretty stationary the last three years, although the imports of brandy have fallen fully one half. Of the fruit we imported from France in 1883 there were 2069 cwt. of Almonds, value £5712; raw Apples, 280,283 bushels, value £55,146; unenumerated dried fruit, 4392 cwt., value £11,306; unenumerated, preserved without sugar, over 1,000,000 lb., value £14,000; of liquorice, 3047 cwt., value £6705; of essential or perfumed oils we also imported from France 123,824 lb., valued at £48,565; plants, shrubs, trees, and flower roots, value £30,000. Beetroot sugar France sends us also over £2,000,000 in value; wine vinegar £3500, and beeswax about the same sum.

Reports of Societies.

Calne District Horticultural and Cottage Garden Society: *August 26.*—That the quaint, thriving, clean, healthy town of Calne should possess a flourishing horticultural organisation is perhaps not to be wondered at, for is it not associated with the splendid demesne of Bowood, and did not the honoured name of John Spencer, years ago, make it illustrious in the annals of horticulture? This was the twentieth exhibition, and it was held as usual in Bowood Park, the tents being pitched on the gentle slope in front of the south side of the mansion, which runs down to the ornamental water. And the numerous visitors to the show had the great privilege of rambling at will about the beautiful grounds of the park, only the kitchen and fruit gardens being closed to them. Possibly the park grounds with their grand arboreal features and fine landscape views had as much attraction for visitors as the show, for they poured in by the hundred, until the grounds appeared alive with human beings. The day proved fine notwithstanding a threatening morning, and every thing appeared to pass off in the most thriving manner. This Society deserves to prosper, for it is well conducted, several of the leading townsmen taking an active share in the work of management. It is customary at these shows to have a division open to all England, and it becomes the leading feature of the exhibition. It is not to be wondered at that, Calne being so near to Devizes, handsome prizes are offered for Fuchsias. On this occasion Mr. James Lye, gr., Clyffe Hall, Market Lavington, was 1st, with six very fine specimens, consisting of the Hon. Mrs. Hay, Mrs. Hooper Taylor, and Henry Brook, dark; Beauty of the West, Emily Lye, and Arabella, light. 2d, Mr. Hale, gr. to C. N. May, Esq., Devizes, with a very good six indeed, consistingof Doels' Favourite, James Lye, and Crimson Globe, dark; Marginata, Rose of Castille, and Beauty of Trowbridge, light. In another class, open to the district, Mrs. C. Harris had the best four; Mr. D. Hendon, Queenford, being 2d—both showing nicely grown and flowered bushy specimens.

Stove and Greenhouse Plants.—Here Mr. Mould, nurseryman, Pewsey, was a good 1st, with six flowering specimens, staging, in good condition, Allamanda Hendersoni, A. nobilis, a fine Erica insignis, E. Austiniana, Ixora Colei, and Gloriosa superba. 2d, C. N. May, Esq., with good specimens of Allamanda nobilis, Bougainvillea glabra, Statice profusa, Dipladenia Brearleyana, Rondeletia speciosa major, and a white Oleander. Mr. D. Hendon had the best 6 zonal Pelargoniums, nicely grown and flowered; while Mr. Lye was well ahead with the best six specimens of variegated-leaved varieties. Mrs. C. Harris had the best six tuberous-rooted Begonias, and while the plants were nicely grown and flowered the varieties were poor, indeed a packet of seed would be certain to produce something in advance of what was seen here. Some good specimen Coleus were shown by Mrs. C. Harris, plants of nice pyramidal growth, well grown and coloured.

Ornamental Foliaged Plants.—There was a good competition in the class for six varieties, Mr. Mould being awarded the 1st prize for good specimens of Croton Sunset, C. Andreanus, and C. illustris, Cycas revoluta, and Dracæna Goldieana; 2d, Mr. W. C. Drummond, nurseryman, Bath, with good examples of Cycas revoluta, Thrinax elegans, Latania borbonica, Dracæna Lindeni, Croton Queen Victoria and C. Disraeli; equal 3d, C. H. May, Esq., and C. E. Colston, Esq., Roundhay Park, Devizes (Mr. Clark, gr.). Mr. C. Harris had the best forty-six specimens in the class open to the district, small, clean, and well grown, consisting mainly of Palms.

Ferns.—These were a good feature, and there was a spirited competition. C. E. Colston, Esq., was 1st, with fine examples of Dicksonia fibrosa, D. antarctica, Gymnogramma chrysophylla, G. peruviana argyrophylla, Alsophila australis, Davallia Mooreana, Adiantum cuneatum, and A. gracillimum, as forming the best specimens in his group of twelve; C. N. May, Esq., was 2d, with capital examples of Adiantum Farleyense, A. cuneatum, a seedling golden Gymnogramma, G. chrysophylla, Alsophila australis, Dicksonia antarctica, and Davallia Mooreana. 3d, Mr. W. C. Drummond. Mrs. C. Harris had the best four plants, staging nice examples of Gymnogramma Martensi, A. cuneatum, A. gracillimum, and A. Farleyense. 2d, J. B. O. Angell, Esq., Ramsey House, A. Farleyense and A. gracillimum being his best plants. Mr. G. Willcox had the best six hardy Ferns.

Miscellaneous Plants.—In the district class for four plants of foliaged Begonias J. B. O. Angell, Esq., staged some very nice plants, 1st; J. O. Brinkworth, Esq., Calne, being 2d. Petunias were very pretty, Mr. Lye taking the 1st open prize with six of his admirably grown and flowered plants; Mrs. C. Harris having the best Fern, closely followed by R. Henley, Esq. Mrs. Harris' four plants of tuberous-rooted Begonias were highly creditable; the Rev. W. H. Hitchcock being 2d.

Cut Flowers.—The handsome special prize of £5 for thirty-six single blooms of Roses brought a very sharp competition, and there was a keen contest between Mr. J. Mattock, nurseryman, Oxford, and Messrs. J. Jefferies & Sons, nurserymen, Cirencester, for 1st honours, which were gained by the Oxford man, the Cirencester flowers, though remarkably good, being damaged in the back petals. Mr. Mattock had excellent examples of A. K. Williams, Souvenir de Madame Bertha, a fine bright rose H. P.; Devienne Lamy, Baroness Rothschild, Paul Néron, Marie Baumann, Madame E. Verdier, Duchess of Bedford, Jean Poinet, Catharine Mermet, Maréchal Niel, Charles Lefebvre, Anna Olivier, Perle des Jardins, Dupuy Jamain, Marie van Houtte, Harrison Weir, &c. Messrs. J. Jefferies & Son were 2d, with Madame Victor Verdier, Louis van Houtte, Alfred Colomb, Mrs. C. Wood, Annie Wood, Ferdinand de Lesseps, Marie Rady, Comtesse d'Oxford, Madame H. Jamain, Paul Jamain, A. K. Williams, Duchess of Bedford, Mrs. Jewitt, Marquis de Castellane, Sénateur Vaisse, Marie Baumann, Belle Lyonnaise. 3d, Messrs. G. Cooling & Son, Nurserymen, Bath. Extra prizes were awarded to S. B. Budd, Esq., Bath; Mr. W. Smith, Kingsdown, Bristol; and Messrs. Cross & Steer, nurserymen, Salisbury. In the class for twelve blooms, Mr. Budd was 1st, with very good examples of Arthur Dickson, Marquis de Castellane, Comtesse d'Oxford, La France, Alfred Colomb, Captain Christy, Charles Lefebvre, François Michelon, Souvenir de Paul Néron, Duke of Wellington, Belle Lyonnaise, and Duchess of Bedford; 2d, Messrs. C. Cooling & Son; 3d, Mr. J. Mattock. Mr. G. Humphries, Chippenham, had the best twelve Dahlias; Mr. T. Gibbs, Chippenham, being 2d, both with very creditable flowers. Single Dahlias were very pretty; Mr. G. L. Walters, Calne, being 1st; and Messrs. G. Cooling & Son, 2d. Mr. Walters also had the best twenty-four spikes of Gladioli, Mr. G. Humphries being 2d. French and German Asters were well shown, Mr. Walters taking the 1st prizes in each class.

Fruit.—The best two bunches of black Grapes came from Thomas Harris, Esq., nicely coloured examples of Black Hamburghs; R. Henley, Esq., being 2d with the same. Mr. Harris had the best two bunches, showing good Buckland Sweetwater; Mrs. Harris being 2d with this also. Mr. Angell had the best dish of Peaches, Mr. Thomas Harris coming 2d. Mr. Angell had the best dish of Nectarines also, staging some excellent fruit. Melons were well shown, Messrs. Brinkworth and Harris taking the leading prizes. Mr. J. B. O. Angell had the best collection of six dishes of fruit, staging good black and white Grapes, Melons, Peaches, Nectarines, and Plums. Mr. J. O. Brinkworth was 2d. Cooking Apples were very finely shown, and there were evidences that the Apple crop in this part of Wiltshire is much better than in other parts of the country. Dessert Apples were also very good, and so were such hardy fruits as Plums, Gooseberries, and Morello Cherries.

Vegetables.—These were generally of good quality, but Potatos fell below their usual average of fine development, owing to the character of the season. We were glad to see that the judges in this part of the country give the preference to quality of tuber instead of to mere size, as some judges do in other parts of the country. Celery was very good indeed, Cucumbers the same, Peas very fine in the pod, and covered with a rare bloom, Scarlet Runners were very good. Mr. J. Powney had the best four dishes of Potatos—a very good clean lot; Mr. Sell being 2d, with tubers only just inferior. In the classes for single dishes of round and kidney varieties excellent samples were shown. Onions were very fine, both the Spanish and Tripoli types, Carrots, Parson's Rhubarb, and other subjects being in fine condition.

The cottagers' vegetables and cut flowers, as well as their hardy fruits, were good, but it was said they were not quite so numerous as last year. But they were far ahead of what is seen in other parts of the country, where the cottager is not so much encouraged as in the West. Altogether it was a decidedly satisfactory exhibition, and, as usual, proved a decided financial success.

Chippenham and District Horticultural: *August 27.*—This was the fourteenth exhibition of a Society that originally started for encouraging cottage gardening, has made a rapid growth, and is now one of the best exhibitions of its kind in the West of England. How thoroughly it has succeeded in its praiseworthy purpose could be seen in the tents set apart for cottage productions. Had there been nothing else, no horticulturist would have had reason to regret a journey of many miles to look upon produce of a very high order of merit. The show was held in Monkton Park, which is spacious and full of fine trees; it is close to the town, and in every respect well adapted for the exhibition. The committee, who appear to work together heartily in furtherance of their special work, are assisted by a subscription list amounting to some £150, and on a fine day the takings at the gates reach the sum of £150 to £200. Great crowds come in from the surrounding villages. On this occasion the weather was wet; the long spell of dry weather came to a close, and rain fell persistently during the early part of the afternoon, and the coffers of the Society suffered thereby.

Fuchsias.—Here, as at Calne, Fuchsias are made a leading feature, and again Mr. Lye was placed 1st with fine plants similar to those shown by him at Calne on the previous day, and scarcely the worse for wear for their transit from one place to another, which justifies the somewhat close tying adopted by Mr. Lye. 2d, Mr. Hall, gr. to C. N. May, Esq., Devizes. Mr. W. C. Drummond, Bath, was the only exhibitor of three plants, staging remarkably good specimens. And in other classes for amateurs and cottagers, pretty, bushy, well grown and flowered plants were exhibited.

Stove and Greenhouse Plants.—Here was a class for nine specimens in or out of bloom, and Mr. J. F. Mould, nurseryman, Devizes, followed up his success of the previous day by again taking the 1st prize, showing a selection of plants he had at Calne on the

previous day. Equal 2d prizes were awarded Mr. Hale and Mr. Tucker, gr. to Major Clark, Trowbridge; the former had good examples of Croton Weismanni, C. pictus, Bouganvillea glabra, a capital Statice profusa, and Latania borbonica. Mr. Tucker had all flowering plants, a little irregular, but fresh and clean; his best examples were Allamanda Hendersoni, A. nobilis, Plumbago coccinea, very good indeed, and somewhat uncommon at this season of the year; Statice profusa, Stephanotis floribunda and Bougainvillea glabra. In the class for six plants, Mr. Sartain, gr. to Captain Bailey, Chippenham, was 1st, with small but clean and well-grown examples.

FLOWERING PLANTS.—Foremost amongst these were zonal Pelargoniums, Mr. George Tucker having the best plants, thoroughly well grown and flowered, but old varieties wanting in quality; 2d, Mr. D. Hendon, of Calne, with good plants also. Mr. Lye was the only exhibitor of Petunias, staging three fine plants, well grown and flowered, which he cultivates with so much care. Some excellent Cockscombs were shown by Mr. West, Awdry. Mr. J. T. Rigg, Chippenham, had the best nine tuberous-rooted Begonias, nicely grown and flowered examples; Mr. A. S. Coles, gr. to the Rev. T. A. Clarke, being 2d. The exhibition of these popular plants promises well for their future at Chippenham. A few Gloxinias were shown, but they were getting past their best. In the nurserymen's and gentlemen's gardeners' divisions the plants generally were good and well grown, though not large in size.

FOLIAGED PLANTS.—In the class for six ornamental foliaged plants, Mr. R. Walmsley was 1st with good examples, including Crotons, Palms, Dracænas, &c. Captain Bailey being 2d. Coleus were a good feature also, Mr. J. T. Rigg having the best six varieties.

FERNS.—Of these there was a remarkably good display. In the class for six varieties, open to all, Mr. Tucker was a good 1st, staging six handsome, even, well grown specimens of the following:—Gymnogramma Laucheana, G. peruviana cristata, a very fine Fern indeed; Adiantum Farleyense, A. cuneatum, A. peruvianum, and Asplenium Nidus-avis. 2d, Mr. Hall, with capital plants of Dicksonia antarctica, Davallia Mooreana, A. Farleyense, A. cuneatum, A. trapeziforme, and a seedling golden Gymnogramma. The best three Ferns and three mosses came also from Mr. Tucker, who had fine plants of Gymnogramma sulphurea, G. decomposita, Adiantum gracillimum, Selaginella Martensi variegata, S. Wildenovi, and S. pubescens. 2d, Mr. R. Walmsley, Luckman Park (Mr. McKay, gr.) The best six Ferns in another division came from J. E. Gladstone, Esq., Bowden Park (Mr. J. Webb, gr.), also with good well grown plants; Mr. R. Walmsley being 2d.

CUT FLOWERS.—Roses were a leading feature, and they made a very effective display. Messrs. Jefferies & Son, nurserymen, Cirencester, had the best thirty-six blooms, staging a very good lot of nice fresh well coloured flowers, consisting of Madame Victor Verdier, Alfred Colomb, Duchess of Bedford, François Michelon, Sénateur Vaisse, Mrs. Jowett, Madame Gabrielle Guizot, Annie Wood, Dr. Andry, Madame Hippolyte Jamain, Mons. E. Y. Teas, Marie Baumann, Duke of Teck, A. K. Williams, Mrs. Charles Wood, Rosieriste, Jacob, Charles Darwin, Madame Charles Crapelet, and Paul Jamain; 2d, Mr. J. Mattock, nurseryman, Oxford, who had good blooms of Marie Baumann, Maréchal Niel, Devienne Lamy, A. K. Williams, Louis van Houtte, Marie van Houtte, Anna Olivier, Madame Lambard, Duke of Connaught, Cornelia Koch, a charming white Tea; Richard Laxton, Souvenir de Madame Berthier, David Pradel, and François Michelon. 3d, Messrs. George Cooling & Son, Bath. Mr. G. Campbell, gr. to S. P. Budd, Esq., Bath, had the best twenty-four blooms, his leading flowers being Charles Lefebvre, Belle Lyonnaise, Captain Christy, Comtesse d'Oxford, Marie van Houtte, Souvenir de la Malmaison, Marie Baumann, Comtesse de Sereneye, Alfred Colomb, and Baron Rothschild; 2d, T. Hobbs, Esq., Lower Easton, Bristol. Mr. G. Humphries, nurseryman, Chippenham, had the best twelve blooms; the Rev. R. M. Ashe being 2d. Some remarkably good Roses were shown by cottagers.

DAHLIAS.—The best eighteen blooms came from Mr. Thomas Hobbs, Lower Easton, who had excellent examples of James Service, Mr. P. Wyndham, Charles Wyatt, Mr. Dodds, John Standish, James Vick, Hugh Austin, Lord Chelmsford, Mrs. Harris, Emily Edwards, &c. 2d, Mr. George Humphries. Mr. G. Horsell, Bathwick, was 1st, with twelve blooms; Mr. G. Tanner, Draycott Cerne, being 2d. In both cases the flowers were unnamed. Single Dahlias were numerous and very pretty; but while some exhibitors staged single flowers others had bunches of three or four varieties. Mr. A. A. Walters, florist, had the best, staging some remarkably good flowers, among them such fine varieties as Imogen, Rob Roy, Mauve Queen Improved, Defiance, Lucy Ireland, White Queen, and Purple Prince. 2d, Mr. T. Gibbs, Great Somerford. In the nurserymen's class Mr. G. Humphries had the best twelve Dahlias, and the best twelve single varieties also.

MISCELLANEOUS CUT FLOWERS.—The extent to which French and German Asters were shown, and their very fine quality, was a perfect surprise. In the class for twenty-four quilled varieties, Mr. H. Hooper, florist, Bath, was 1st, and Mr. A. A. Walters, 2d. With the same number of French Asters, Mr. G. S. Walters, Calne, was 1st, and Mr. A. A. Walters 2d. The Victoria types were very fine, and one or two were quite distinct in character. The Rev. R. M. Ashe, was 1st in two other classes of similar numbers. Gladiolus were well shown; also Verbenas in bunches, and striped French Marigolds were much better than we were accustomed to see them elsewhere.

In the cottagers' department the cut flowers were truly remarkable. Dahlias, Stocks, Asters, African and striped French Marigolds, Roses, Zinnias, &c., were all of remarkable quality, and very numerous. It is rarely that the floral productions of cottagers are seen in such a high state of perfection as at Chippenham.

FRUITS.—It is not necessary to go into many particulars respecting the fruit; as it was not numerous and the best kinds of fruit indifferent. Grapes were poor. Plums were well represented, and very good. Culinary Apple, were really superb; the Apple crop in this district of Wiltshire appearing to be better than in some other parts of the country. The best collection of eight dishes of fruit came from Mr. J. E. Gladstone, Mr. Riggs being 2d.

VEGETABLES.—Throughout the show these were of a superior character, and they were also very numerous. Mr. J. C. Webb staged the best collection of six varieties; the Rev. Mr. Ashe had the best collection of three dishes of Potatos. There were classes for Peas, autumn and spring Onions, Carrots, Turnips, Parsnips, Cauliflowers, Cucumbers, Celery, Cabbage, baskets of salads, &c. The cottagers' vegetables were very fine indeed.

Prizes were offered for agricultural roots by Messrs. Sutton & Sons, Reading, and others, and of these there was a good display, the season considered. In the cottagers' divisions there were prizes for home-baked bread, and the competition was very keen indeed.

Bath Horticultural: *Sept.* 3 *and* 4.—This Society held its twenty-ninth annual autumn show in the Sydney Gardens, on Wednesday and Thursday last, under most favourable circumstances as regards the weather, number and quality of exhibits staged in the various classes, all of which were stoutly contested. There was a large attendance of visitors in the beautiful gardens and five exhibition tents, which were well filled with foliage and flowering plants (the best that have been seen in Bath for a long time), and cut flowers—the Roses and Dahlias being shown largely (especially the former) and well, as also were fruits and vegetables. To give a full report of this excellent show would occupy too much space, suffice to say that the show was acknowledged by all to have been in many respects (especially in the plant classes) the best the Society has ever had—a fact which speaks well for its management, which is everything that could be desired, and for the growing popularity of the *fête*. Mr. Cypher, as usual at most shows at which he puts in an appearance, swept all before him in the big plant classes, and his noble Palms, and highly coloured Crotons, and grandly flowered Heaths, Allamandas, and Dipladenias, were greatly admired by gardeners and amateurs alike. The following are the principal awards made by the judges:—

PLANTS.—Fuchsias are always a grand feature at the Bath autumn show, consequently they occupy precedence in the plant division, there being five classes for them; and perhaps never has such a fine lot of plants been staged as were shown on Wednesday last. For nine varieties Mr. Lye, gr. to the Hon. Mrs. Hay, Cliffe Hall, Trowbridge, was 1st, with truly grand specimens, 9 feet high, and about 4 feet through at the base, of Star of Wilts, Pink Perfection, Lye's Favourite, Harriet Lye (lights); Final, Charming, Elegans, Hon. Mrs. Hay, and Bountiful (darks).—Mr. Tucker being a very good 2d, and Mr. G. Snell 3d. For six varieties, Mr. C. Fletcher, gr. to C. H. Gabriel, Esq., was 1st; and Miss Barron 2d. For four varieties, Mr. Riddick, gr. to Mrs. Pinder, was 1st; 2d, Mr. A. Southard, gr. to T. F. Walker, Esq.; and Mr. Hawkings, 3d. For a single specimen (light) Mr. Lye was 1st, with Gustave Doré, Mr. Snell 2d, with Marginatus; and in the corresponding class for dark Mr. G. Tucker was 1st, with a good specimen of Charming, and Mr. Lye 2d. Mr. James Cypher, nurseryman, Cheltenham, was 1st for fifteen ornamental foliage plants, showing, amongst others, Croton Prince of Wales, 5 feet through, and grandly coloured; Croton Sunset, 7 feet through, also beautifully coloured; Croton Warreni, having spiral-shaped, well coloured leaves; Cycas circinalis, &c.: Mr. Drummond, Bath, was 2d, his finest plant being Cycas revoluta. For nine varieties of ornamental foliage plants.—1st, Mr. D. Bloodworth, 2d Mr. Mould, gr. to — Bryant, Esq., and Mr. Hallett was 3d. For a single specimen of stove foliage plant.—1st, Mr. Mould, Pewsey, with a fine Gleichenia rupestris; 2d, Mr. Drummond, with Cycas revoluta. Mr. Cyper was 1st for twelve stove or greenhouse plants in bloom, with Erica Austiniana, 5 feet through, and well flowered; Ixora Williamsii, Ixora Colei, a grand plant; Allamanda nobilis, &c., Mr. Long, gr. to C. Gardener, Esq., being a good 2d, whose best plants were Ixora Williamsii, 5 feet high and 4 feet through, and grandly flowered; Lapageria rosea, &c.; 3d, Mr. Mould (Pewsey), also showing a good collection. Mr. G. Tucker, gr. to Major W. P. Clarke, was 1st in the corresponding class for six plants, his best plants being Bougainvillea glabra, Statice profusa, Lapageria rosea; 2d, E. Bryant, Esq.; 3d, Mr. Bloodworth, all showing well. Mr. Hawkings, gr. to T. Jolly, Esq., was 1st for three flowering plants; 2d, Mr. W. C. Drummond, in whose lot there was a nice plant of Ixora amboyensis. Mr. Long was 1st for specimen stove flowering plants, with a grandly flowered Ixora Williamsii; and Mr. Cypher a good 2d, with Stephanotis floribunda. There was only one entry in the class for six varieties of Orchids, namely, Mr. Cypher, who was awarded 1st prize for nice plants of Cattleya speciosissima, having seven spikes, Dendrobium formosum giganteum, eight spikes, having six flowers each; Lælia purpurata, Oncidium Lanceanum, Odontoglossum grande. Mr. Cypher was again to the front for six Heaths, showing fine plants of Erica Marnockiana, E. æmula, &c.; Mr. Mould (Pewsey) being 1st in a similar class with neat well flowered plants, and Mr. Bryant 2d. For a single specimen Heath, Mr. Cypher was again to the front with a grandly flowered plant of Erica Marnockiana, Mr. Long being a good 2d with Erica Wilsoni. Mr. Coke, gr. to A. P. Stancomb, Esq., was 1st for twenty exotic Ferns and Mosses, with a grand lot of plants, followed closely by Mr. Bryant and Mr. G. Tucker in that order; and in the corresponding class for twelve plants Mr. Tucker was 1st, and Mr. Jones, gr. to General Doherty, 2d. Mr. G. S. Hale was 1st for fifteen British Ferns. For six Pelargoniums Mr. Tucker was 1st for a neatly trained and well flowered collection, the plants being from 3 to 4 feet through; 2d, Mr. F. Slade; 3d, Mrs. Cansell; and for four ditto, Mr. Riddick secured the 1st place. For six variegated Pelargoniums, Mr. Lye was 1st, Mr. Fletcher 2d, and Mr. Hale 3d; and for a like number of tricolors Mr. Lye was again to the front, Mr. Drummond and Mr. Hallett being 2d and 3d in that order. Mr. Southard was 1st for Balsams, Mr. H. Jones was 1st for Achimenes, Mr. Tucker 2d, and Mr. Hawkings 3d. Mr. Bailey was 1st for Gloxinias, Mr. W. Clifford had the best six plants of tuberous Begonias, and Mr. Lye the best six Coleus.

CUT FLOWERS.—Gladiolus.—For eighteen varieties of Gladioli, S. Dobree, Esq., 1st; 2d, Mr. S. Brown, Weston-super-Mare; and for six varieties, Mr. A. Hooper was 1st, Mr. Tottle 2d, and Messrs. Cooling & Sons, Bath, 3d. Mr. Thomas Hobbs was 1st for twenty-four Dahlias, Mr. Shaw 2d, and Mr. Nation 3d; and for twelve varieties of Dahlias, Mr. G. Hamphries was 1st; for nine ditto, Mr. Shaw secured the chief place, and Mr. Truckle was 1st for single varieties.

ROSES.—Messrs. Jefferies & Son, Cirencester, were 1st for twenty-four Roses, among which were fine fresh blooms of Duke of Teck, Duke of Edinburgh, and Belle Lyonnaise; 2d, Messrs. Cooling & Sons, Bath; 3d, Mr. J. Mattock. Mr. S. P. Budd was 1st for twelve blooms, with a nice fresh lot; Mr. Fred. Harris 2d, and Mr. J. Burgess 3d. Mr. Budd was again to the front for twelve blooms, Mr. Hobbs 2d, and Mr. Narroway 3d. For twenty-four varieties of cut flowers Mr. Howe was 1st, with a choice lot, Mr. Bryant 2d, and Mr. Drummond 3d. Messrs. Laing & Co., Forest Hill, London, put up, not for competition, a grand stand of tuberous Begonia flowers, also Hollyhocks, each in fine form; as also did Mr. Tredwell. Messrs. Cooling & Sons Roses and Dahlias; Mr. T. Ware, Hale Farm, London, single Dahlias.

Table ornaments.—1st, Mr. Cypher. Hand bouquet.—1st, Mr. Cypher; 2d, Mr. Hoskings; 3d, Mr. Wakeman—all with choice flowers, neatly arranged.

FRUITS.—These were shown largely and for the most part well. For a collection of eight kinds Mr. A. Miller, gr. to H. Long, Esq., Rood Ashton Park, Trowbridge, was 1st, showing a good even lot. 2d, Mr. Nash, gr. to the Duke of Beaufort, Badminton House, Chippenham; 3d, Mr. Howe, gr. to Lewis Fry, Esq., M.P. Mr. Nash was 1st for eight bunches of Grapes (four vars.), showing in fine condition Black Alicante, Gros Colmar, Black Hamburgh, and Muscat of Alexandria; Mr. W. Taylor, gr. to Jas. Chaffin, Esq., being a very close 2d, showing Madresfield Court, Alnwick Seedling, Black Alicante, &c., all well finished bunches; 3d, Mr. Marshall. With three bunches of Black Hamburgh Mr. W. Taylor was easily 1st; and for two bunches, same variety, Mr. Frederick Edwards was 1st; Mr. Ellicot 2d, and Mr. Wakerman (gr., Mr Lovibond), Salisbury, 3d. For a like number of bunches of whites Mr. Kingston, gr. to W. Daubeney, Esq., was 1st, with fair bunches of Golden Champion. For any other black Grapes than Hamburghs and Black Muscats, 1st, Mr. Nash, with good bunches of Alicante. For two bunches of Muscats Mr. Shelton, gr. to W. K. Wait, Esq., was 1st; Mr. Ellicot 2d, Mr. Marshal 3d, and Mr. Coles obtained an extra award. Out of thirteen lots of six Peaches Mr. A. Miller had the best, Mr. Wakerman 2d, and Mr. W. H. Sintern the 3d prize. Mr. Miller was again to the front for six Nectarines, and for nine Nectarides Mr. Pymm was 1st, Mr. Richards, Somerley House, Ringwood, 2d; and Mr. W. Shaw 3d. Mr. Miller had the best green-flesh Melon (Best of All)—Mr. W. Taylor and Mr. Chislett, gr. to Lady Dynevor, 2d and 3d respectively, the last-named exhibitor being 1st for a scarlet-flesh, Mr. Satter 2d, and Mr. Nash 3d—forty-two fruits being staged. Figs, Plums, Apples, Pears, Cherries, and Filberts were shown largely and well.

Vegetables were also shown on a large scale and of extra quality throughout. Mr. W. Tylee had the best collection of twelve kinds, Mr. Smith the best of nine kinds; Mr. W. Jordan, 2d, and Mr. Chedzey 3d.

The cottager's classes were keenly contested, and the exhibits were remarkably good on the whole.

Scottish Horticultural Association.—The ordinary monthly meeting of this Association was held at 5, St. Andrew Square, Edinburgh, on Tuesday last, Mr. Alexander Milne (Dickson & Sons) presiding. Mr. Robert Lindsay, Curator Royal Botanic Gardens, read a paper on plants of recent introduction. After remarking that to Messrs. Douglas and Fortune more than to any others the country was indebted for the introduction of the largest number of our best plants, now to be found in almost every garden, Mr. Lindsay said that formerly collectors were sent out by horticultural societies to collect new plants from abroad, but that now many of the enterprising nurserymen in England and on the Continent made it part of their business to engage collectors for

this work. Attention was drawn to the splendid collection of original specimens of trees and shrubs now being exhibited at the Forestry Exhibition by the Messrs. Veitch, of London, which had been sent home from abroad by their own collectors. The essayist then went on to describe the new plants which had been introduced into this country since 1880, showing that Orchids formed the majority of plant novelties at the present time. Among other plants mentioned was Nepenthes Rajah, a wonderful species of Pitcher-plant, introduced by Mr. Burbidge from Borneo, having pitchers more than 1 foot long and 6 inches broad. Subsequently there was submitted a copy of the report by Mr. Elwes, F.L.S., F.H.S., on the International Exhibition and Botanical Congress recently held at St. Petersburg. The following plants and fruits were exhibited:—A new seedling Potato, by Mr. Bisset, Moncrieff House, Bridge of Earn, which received a First-class Certificate; a new Currant, Defiance, by Mr. Bowie, Chillingham Castle, which received a First-class Certificate; a very interesting collection of new plants, introduced by members of this Society, and shown by Mr. Lindsay; a fine collection of cut herbaceous flowers, by Mr. Ware, London; a good collection of flowering shrubs, by Mr. Chapman, Easter Duddingston; and a new seedling Lobelia, by Mr. Begg, Wardie Lodge, which was commended.

Sevenoaks Horticultural: *Aug.* 27. — The seventeenth annual exhibition of this Society was held, as usual, in Montreal Park, the seat of Earl Amhurst, the pleasure grounds as well as the park being thrown open to the visitors. The show was in every way a success, quite up to the standard of former years; the plants were especially good, and well represented in the different classes for flowering, fine-foliage, and Ferns.

In the open division for six stove and greenhouse plants in flower, Mr. A. Gibson, gr. to T. F. Burnaby Atkins, Halstead Place, was 1st, with fine plants of Dipladenia amabilis and boliviensis, Allamanda Hendersoni and nobilis, Eucharis amazonica, &c. Mr. J. Bolton, gr. to Mrs. Spottiswoode, Combe Bank, was 2d, with a nice group of plants, in which were Ixora Williamsi, Clerodendron fallax and Balfourianum, &c. For a single specimen stove or greenhouse plant, Mr. S. Cooke, gr. to De B. Crawshay, Esq., Rosefield, Sevenoaks, was 1st, with a fine specimen of Vanda suavis; Mr. Gibson being 2d, with a grand plant of Eucharis amazonica with thirty trusses of flower; Mr. Bolton and Mr. Meakin, gr. to C. R. Petley, Esq., Riverhead, being equal 3d with Allamanda Hendersoni and Begonia metallica respectively.

Ornamental foliage plants were largely shown, Mr. Bolton being 1st, with good plants of Kentia Fosteriana, Cycas revoluta, Latania borbonica, Croton Queen Victoria; Mr. Gibson 2d, and Mr. J. Goodman, gr. to Mrs. Crawshay, Bradbourn Hall, 3d. Ferns were well represented and in fine condition, Mr. J. Staples being 1st, with a fine lot, in which were Cyathea dealbata and medullaris, Goniophlebium subauriculatum, Adiantum cardiochlænum, and Davallia Mooreana, 7 feet across. Mr. J. Goodman was a good 2d, with Cyathea medullaris, Cibotium regale, Microlepis hirta cristata, &c. Mr. Bolton and Mr. A. Hatton, gr. to Mrs. Swanzy, The Quarry, equal 3d. British Ferns were well represented, Mr. Meakin being 1st, Mr. Bolton 2d, and Mr. Staples, gr. to H. Oppenheim, Chipstead Place, 3d. In the Orchid class Mr. S. Cooke was 1st, with six well flowered specimens. With six Fuchsias Mr. Meakin was 1st, Mr. Huntley, gr. to the Rev. T. S. Curteis, The Vicarage, 2d; and Mr. Hatton 3d. Caladiums were well shown. Mr. Meakin 1st, Mr. Hatton 2d, and Mr. J. Sharpe, gr. to F. Hatchett, Esq., Grove Park, Lee, 3d. The class for Begonias here admits of the fibrous rooted kinds being shown with the tuberous rooted varieties, with the result of a much better effect—Mr. Bolton being 1st, Mr. Hatton 2d, and Mr. Cooke 3d. For six zonal Pelargoniums Mr. S. Meakin was 1st, Mr. Hatton 2d, and Mr. H. Vallins, gr. to J. L. Worship, Esq., Manor House, Riverhead, 3d.

Plants suitable for table decorations were contributed by a number of exhibitors.—Mr. Cooke 1st, Mr. Gibson 2d, Mr. Carlton, gr. to Sir C. H. Mills, The Wildernesse, Seal, and Mr. G. Goldsmith, gr. to P. C. Hardwick, Esq., Hollanden, Tonbridge, equal 3d's. In the division for smaller growers for four stove or greenhouse plants, Mr. Vallins was 1st, Mr. J. Sharpe 2d, and Mr. F. Knight 3d. For ornamental foliage plants, Mr. Sharpe was 1st, and Mr. Vallins 2d. For four Fuchsias, Mr. Vallins was 1st, Mr. Wright 2d, Mr. Sharpe 3d. For zonal Pelargoniums, Mr. W. Leatchford, gr. to E. E. Cronk, Esq., Suffolk Place, Sevenoaks, was 1st, Mr. Knight 2d, and Mr. Vallins 3d. Groups of miscellaneous plants arranged for effect are one of the principal features of the Society's exhibition, and were as usual well done—Mr. G. Fennell, gr. to Mrs. Cazolet, Fairlawn, Tonbridge, being 1st, with a beautiful arrangement; Mr. Menkin 2d, Mr. Cooke 3d, and Mr. Bolton 4th. Groups of Ferns similarly arranged, were also well shown, Mr. F. Webber, nursery, Quarry Hill, near Tonbridge, being 1st, with a splendid group, principally Adiantums; Mr. Staples a good 2d, Mr. Fennell 3d, and Mr. Hatton and Mr. Goodman equal 4th's. In the second division for groups of miscellaneous plants, arranged for effect, Mr. Vallins was 1st, Mr. Mist, Ightham, 2d, and Mr. G. Wood, Sunbridge, 3d. Good groups, not for competition, were also shown by Mr. Carlton, Mr. C. F. Cattell, nursery, Sevenoaks, and Messrs. A. Jeffkins & Co., nursery, Westerham.

ROSES were shown in much better condition than is usual at so late a period in most seasons. For twenty-four distinct varieties, one truss each, Messrs. G. Bunyard & Co., nurserymen, Maidstone, were 1st; Mr. R. Grey, gr. to Earl Stanhope, Chevening, 2d; Mr. Seale, Vine Nurseries, Sevenoaks, 3d. For twelve, Mr. Mr. J. Sharpe was 1st; Mr. W. Blundell, gr. to G. Christy, Esq., Westerham Hill, 2d; and Mr. Bolton, 3d; Dahlis were well shown—for twenty-four, Mr. Cannell, Swanley, was 1st, and Mr. Seale 2d. For twelve, Mr. H. Jeal, gr. to F. Legros Clark, Esq., The Thorns, Sevenoaks, was 1st, Mr. Meaken 2d. For twelve Asters, Mr. G. Hardwicke was 1st, Mr. C. F. Cattell 2d, and Mr. Blundell 3d. For Gladiolus, Messrs. Bunyard & Co. were 1st, Mr. C. F. Cattell 2d. Collections of stove and greenhouse cut flowers were well shown, Mr. A. Gibson being 1st, Mr. Bolton and Mr. Cooke equal 2d. For three stands of flowers for table decorations, Mr. A. Hatton was 1st, Mrs. G. Fennell 2d, Miss Staples 3d, and Mr. J. H. Beach, florist, Bore Green 4th. For a single stand Mrs. Bishop, Croydon, was 1st, Miss E. Staples 2d, Mrs. Fennell 3d, and Mrs. Hatton 4th. For hand bouquet Mrs. Bishop was 1st; and for a basket of arranged flowers, Miss Seale. Arranged groups of wild flowers were also shown.

Fruit was exhibited in large quantities and in good condition. With a collection of six dishes, Mr. A. Henderson was 1st with good examples of black and white Grapes, a Melon, Peaches, Nectarines, &c.; Mr Fennell 2d; Mr. Staples 3d. With four dishes Mr. C. Noble was 1st, Mr. H. Neal 2d, Mr. W. Leutchford 3d. For the best Pine, Mr. Henderson was the only competitor, and showed a good Queen. For black Grapes, three bunches, Mr. Fennell was 1st, Mr. J. Evans, gr. to Sir J. Hawley, Leybourne Grange, 2d; Mr. Goodman 3d. For two bunches Mr. H. Neal was 1st, Mr. W. Leutchford 2d, and Mr. W. Martin, gr. to W Johnson, Esq., Claridge House, Sevenoaks, 3d. White Grapes, three bunches.—Mr. R. Gray, 1st; Mr. G. Tucker, gr. to J. H. Lovibond, Esq., Starts Hill, Farnborough, 2d; and Mr. B. Reeks, gr. to Mrs. R. W. Smith, Wadhurst Castle, 3d. For two bunches Mr. Leutchford was 1st, Mr. H. Neal 2d, and Mr. Noble 3d. For best collection of Grapes, three bunches, three vars., Mr. Tucker was 1st, Mr. Reeks 2d, and Mr. Henson, gr. to T. Johnston, Esq., Broomsleigh, Seale, 3d. For a Melon, Mr. Vallens was 1st; Mr. E. Ham, gr. to H. Johnstone, Esq., Hildenborough, 2d; Mr. Huntley 3d. Peaches were well shown by Mr. Goodman, who took the 1st, with a beautiful dish of Royal George, highly coloured; Messrs. G. Bunyard & Co. 2d; and Mr. G. Salter, gr. to F. Tooth, Esq., Park Farm, Sevenoaks, 3d. For Nectarines, Mr. Goodman was again 1st, with good Pine-apple; Mr. Turner 2d, Mr. Gibson 3d. For three dishes of dessert Plums Mr. Staples 1st, Mr. Fennell 2d, and Mr. Sears, gr. to W. J. Thompson, Esq., Kippington, 3d. For three dishes of culinary Plums, Mr. Gibson, Mr. Sears, and Mr. Bolton, were respectively 1st, 2d, and 3d. For three dishes of dessert Apples Mr. Staples was 1st, Mr. Bolton 2d, Mr. Fennell 3d. For three dishes of culinary Apples, Messrs. G. Bunyard were 1st, Mr. Sears 2d, Mr. G. Hubbard 3d. For three dishes of dessert Pears Mr. Staples was 1st, Mr. Sears 2d, Mr. Bunyard 3d. Dish of Cherries, Mr. Staples was 1st, Mr. Hatton 2d, Mr. Sears 3d. Collections of vegetables were also shown in large quantities, and in good condition. *A Correspondent.*

Obituary.

JAMES HENRY MANGLES.—It is with very great sorrow that we have to record the death of our valued friend and correspondent, James Henry Mangles. After a painful illness, he died at his residence, Valewood, Haslemere, on August 24, at the early age of fifty-two years. Courteous and urbane, with extensive knowledge and full sympathy with horticultural pursuits, Mr. Mangles' accession to the Council of the Royal Horticultural Society a few years ago was hailed with satisfaction by those cognisant with the wants of the Society and the capabilities of the new Councillor. Short as has, unfortunately, been his connection with the Society, Mr. Mangles amply fulfilled the wishes and expectations of his friends. He was full of energy and sympathetic zeal, he enlisted an extraordinary number of recruits; in numerous and varied ways he endeavoured to stimulate the flagging vitality of the Society. To him were principally due the two successful evening meetings held last year at the rooms of the Linnean Society. To him among but a few, we looked forward in the hope that his influence and zeal would sooner or later extricate the Society from the *impasse* into which, by force of circumstances, it has been driven at South Kensington. To him we looked to take a prominent part in finding a new place of meeting for the Society, and in reorganising its affairs on a broader and more distinctively national basis. But these hopes are sadly dimmed by his death; and, so far as he is concerned, we can only look back with mingled sorrow and gratitude. As a horticulturist Mr. Mangles' speciality was the Rhododendron. He was as much interested in the latest crosses of a Waterer or a Davies as in the discoveries of Hooker in Sikkim, and of later explorers in Sumatra. No labour was too great, no distance too remote, to present an obstacle to him when a Rhododendron was to be seen. He made them, in fact, the study of his life. It is to be deplored that his knowledge to a large extent dies with him. He published but little save in the form of occasional contributions to the journals, and we are not aware whether he has left any manuscript record of the results of his numerous experiments in hybridising the species. Visitors to the Royal Horticultural Society will remember the ample collection of noble specimens that he was in the habit of bringing to the Society's meetings, and the members of the Scientific Committee had frequent occasion to admire the full knowledge of species possessed by him and the valuable illustrations of hybridisation which he submitted to them. To the last, we believe the agonies of a painful illness were partially alleviated by the inspection of specimens brought for naming or other purposes by his gardener. Those species which required some slight protection were grown in long canvas houses with straight sides and ridged roof, which he called his cathedral houses, and from which the canvas blinds could be removed at will. The plan answered admirably, as the specimens he showed amply testified, and the plants even when out of bloom show the beauty that always characterises vigorous growth. From these houses came the numerous specimens of which we have been privileged to give illustrations from time to time, including that published to-day, and which we little thought, at the time he brought it to us, would have to serve in some sort as a tribute to his memory.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 3, 1884.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rain all.
Aug.	In.	In.	°	°	°	°	°	°			In.
28	29 49	—0.37	68.0	53.0	15.0	59.1	— 1.1	50.9	74	N.W. : S.W.	0.09
29	29.62	—0.24	65.1	51.0	14.1	56.6	— 3.5	48 9	76	N.W.	0.00
30	29.69	—0 18	67.5	52.0	15.5	59.4	— 0.6	54.2	84	N.W.	0.09
31	29 59	—0 29	68 5	58.5	10.0	62.9	+ 3 1	58.7	87	W.	0.03
Sept. 1	29.52	—0 36	64.8	55.5	9.3	59.1	— 0.3	54.0	83	N.W. : W. SW.	0.46
2	29.58	—0.31	67.3	53.3	14 0	59.2	— 0.1	53.0	83	S.W. : W. SW.	0.07
3	29 50	—0.40	67.9	51.2	16.7	59 3	+ 0.2	51.2	73	S. : S.S.W.	0.10
Mean	29.57	—0.31	67.0	53.5	31 5	59.4	— 0 5	53.1	80	N.W.	0 84

Aug. 28.—Rain in early morning. Dull day. Rain from 6 P.M., fine at 10 P.M.
— 29.—Fine and bright in early morning. Dull day. Fine night. Lightning in E.
— 30.—Frequent showers during day, short bright intervals. Rain falling occasionally throughout the evening.
— 31.—Dull day and night. Rain falling at 10 P.M.
Sept. 1.—Rain falling from 9 A.M. till 2.30 P.M. Bright from 3 P.M. Very fine night.
— 2.—Fine day. Two claps of thunder between 1.30 P.M. and 2 P.M., with rain. Very fine night.
— 3.—Fine day, bright mostly. Fine clear night.

LONDON: *Atmospheric Pressure.*—During the week ending August 30, the reading of the barometer at the level of the sea decreased from 30.14 inches at the beginning of the week to 29.99 inches by 3 P.M. on the 24th, increased to 30.5 inches by midnight on the same day, decreased to 29.99 inches by 9 A.M. on the 25th; increased to 30.16 inches by 9 A.M. on the 26th, decreased to 29.65 inches by 9 A.M. on the 28th, increased to 29.91 inches by 9 A.M., and decreased to 29.84 inches by 3 P.M. on the 30th, and was 29.87 inches by the end of the week.

The mean reading of the barometer for the week was 29.92 inches, being 0.14 inch lower than last week, and 0.11 inch below the average of the week.

Temperature. — The highest temperature in the shade in the week was 86°, on the 24th. The mean of the seven high day temperatures was 67°.4.

The lowest temperature was 48°., on the 26th; on the 25th the lowest temperature was 53°.5. The mean of the seven low night temperatures was 51°.5.

The greatest range of temperature in one day was 33°, on the 27th; the smallest was 8°, on the 27th. The mean of the seven daily ranges was 15°.9.

The mean temperatures were—on the 24th, 69°.6,

on the 25th, 58°.3; on the 26th, 53°.3; on the 27th 53°.3; on the 28th, 59°.1; on the 29th, 56°.6; and on the 30th, 59°.4; and these were all below their averages (excepting the 24th, which was 9° above) by 2°.2, 7°.1, 7°, 1°.1, 3°.5, and 0°.6 respectively.

The mean temperature for the week was 58°.5, being 6°.7 lower than last week, and 1°.8 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 148°.5, on the 24th. The mean of the seven daily readings was 114°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 38°.5, on the 26th. The mean of the seven readings was 42°.

Rain.—Rain fell on four days to the amount of 0°.52 inch, of which 0°.33 inch fell on the 27th.

ENGLAND: *Temperature.*—During the week ending August 30 the highest temperatures were 87°.6, at Cambridge, 86° at Blackheath, 85° at Hull; the highest at Liverpool was 64°, at Brighton 75°.8, at Plymouth 79°. The general mean was 79°.5.

The lowest temperatures were 40°.2 at Wolverhampton, 41° at Hull, 41°.3 at Cambridge; the lowest at Blackheath 48°, at Bradford, Leeds, and Preston, 47°. The general mean was 44°.6.

The greatest ranges were 46°.3 at Cambridge, 44° at Hull, 43°.4 at Wolverhampton; the smallest ranges were 17°.4 at Liverpool, at Brighton 29°.8, at Plymouth 32°.6. The general mean was 36°.9.

The mean of the seven high day temperatures was highest at Plymouth, 69°.6, at Brighton and Nottingham 68°.3; and was lowest at Bolton 61°.6, at Sunderland, 62°.2, at Liverpool 63°.9. The general mean was 66°.3.

The mean of the seven low night temperatures was highest at Plymouth, 54°.8, at Preston 52°.7, at Brighton 51°.8; and was lowest at Hull, 45°.9, at Wolverhampton 47°.8, at Bolton 48°.2. The general mean was 51°.

The mean daily range was greatest at Hull, 21°.5, at Nottingham 19°.3, at Cambridge 19°; and was least at Liverpool, 12°.3, at Bolton, Sunderland, and Preston 13°.4. The general mean was 16°.2.

The mean temperature was highest at Plymouth, 60°.6, at Brighton and Blackheath 58°.5; and was lowest at Bolton, 53°.3, at Sunderland 53°.9, at Hull 55°.1. The general mean was 56°.6.

Rain.—The largest falls were 1.98 inch at Liverpool, 1.69 inch at Bolton, 1.62 inch at Preston; the smallest falls were 0.22 inch at Hull, 0.31 inch at Sunderland, and 0.32 inch at Nottingham. The general mean fall was 0.78 inch.

SCOTLAND: *Temperature.*—During the week ending August 30 the highest temperature was 78°.5, at Edinburgh, at Paisley the highest was 65°.2. The general mean was 72°.1.

The lowest temperature in the week was 40°.2, at Dundee and Aberdeen; at Leith the lowest temperature was 44°.4. The general mean was 43°.2.

The mean temperature was highest at Edinburgh, 56°, and lowest at Aberdeen, 53°.9. The general mean was 54°.8.

Rain.—The largest fall was 1.70 inch, at Aberdeen, and the smallest fall was 0.22 inch, at Edinburgh. The general mean fall was 0.73 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."—BACON.

STRAWBERRIES DYING OFF.—Can any of our readers give the reason of Strawberry Vicomtesse Héricart de Thury dying off? They are potted in 5-inch pots, in good rich soil, and every day I have to throw away twelve or fifteen plants, which suddenly die off. All my other sorts that I have potted are doing remarkably well, but this is the only one that does not succeed. I have mixed a few in with the other sorts, giving them all the same treatment, yet they die off. *H. N.*

Answers to Correspondents.

BEGONIAS AND GESNERAS DISEASED: *H. & Co.* The appearances are like those produced by red-spider or thrips, or both. Indeed, we found traces of both on the Begonias.

CUCUMBERS: *E. T.* The roots sent were normal, so we think it must have been a bad case of ordinary gumming.

GRAVEL WALKS: *H. A. Porter.* Boiling water in which salt to the proportion of 1 pint to the gallon of water, applied by means of a watering-pot with a rose, and during dry weather, will kill all weeds, but you must protect the living edging, if any. Turf is not hurt by the salt water when it is not applied directly to it.

INSECTS: *D. & Co.* Your bulbs of Eucharis and Vallota are in a rotten condition, and are consequently infested by a great number of minute white mites, and some very small larvæ of some Dipterous insect. These are usual accompaniments of rotten vegetable matter, and not the original cause of the disease, these creatures not attacking healthy plants or roots.

MELONS: *J. B.* Your plants are badly infested with a species of Vibrio, insects that in some years are very prevalent, attacking the roots, and forming warty excrescences, which attacks cause general unhealthiness in the plants, and in bad cases the cessation of growth and fall of the fruit in a premature stage.

NAMES OF FRUIT: *J. B.* 1, Violette Hâtive Nectarine; 2 and 3, Noblesse Peach; 5, Grosse Mignonne Peach. The others cannot be recognised without some knowledge of the leaves and flowers.

NAMES OF PLANTS: *Mary W.* 1, Cratægus Crus-Galli, var. pyracanthifolia; 2, Cotoneaster affinis.—*C. E. F.* 1, Myrica gale; 2, Gnaphalium silvaticum; 3, Oxyria reniformis.—*J. H. S.* 1, Croton augustifolius; 2, Thibaudia acuminata; 3, not recognised; 4, Nerium Oleander; 6, Monarda fistulosa.—*C. W. A.* Gleditschia, but which we cannot tell from the specimen sent—probably the inermis variety of G. triacanthos.—*W. G. and C. & S.* Euonymus europæus.—*A. W. Tait.* Chrysanthemum uliginosum.—*E. May.* Leycesteria formosa.—*J. C.* Lysimachia nemorum.—*W. L.* Abelia serrata.—*Camjee.* 1, Dendrobium canaliculatum; 2, Epidendrum floribundum; 3, Buphthalmum salicifolium; 4, Stachys coccinea.—*E. P. Dixon.* Brassica campestris.—*A. N., Uckfield.* Rubus phœnicolasius.—*A. M.* Eryngium Olivierianum.—*G. R.* Polygonum cuspidatum.—*W. M. B.* When the specimen reached us it was smashed and discoloured beyond recognition. It is a Labiate.

PANSIES: *May.* The flowers do not possess any unusual merit, that you need name them.

PARCEL OF FRUIT: *J. B.* Never reached us.

PEACHES AND NECTARINES FOR OPEN AIR: *C. Dimmick. Early:* Early Grosse Mignonne (true), Hales' Early, Medium, Royal George, Grosse Mignonne, Belle Beauce. *Late:* Sea Eagle, amongst Peaches; Nectarines—Lord Napier, Pitmaston Orange, and Pine-apple.

PEACHES AND NECTARINES ON SAME STOCK: *A. W. Le Maitre.* These freaks are anything but uncommon, as the readers of our columns will well know.

PEACHES DISEASED: *Samuel Finney & Co.* We cannot tell the exact cause, but it may proceed from "gorging" the roots by much watering. Fruit grown in pots is sometimes so affected.

RHODODENDRON GRAFTING: *F. P.* To be answered next week.

YELLOW TURNIP: *M. Cuthbertson.* A pretty specimen—firm and good-flavoured, and moreover a good keeping sort for late crops. It should find favour with exhibitors, or any one requiring Turnips of this colour.

CATALOGUES RECEIVED.

MESSRS. BARR & SON, King Street, Covent Garden—Bulbs and Plants.
G. BRUCE, Aberdeen—Bulbs.
W. SAMSON & CO., AND W. T. SAMSON, Kilmarnock—Bulbs, Forest, and Fruit Trees in General.
W. TOOGOOD, Southampton—Bulbs.
CLARK BROTHERS & CO., Carlisle—Bulbs.
STEPHEN BROWN, Weston-super-Mare—Bulbs.
P. J. PERRY, Banbury—Bulbs.
A. M. C. JONGKINDT-CONINCK, Tottenham Nurseries, Dedemsvaart, Netherlands—Conifers.
W. TAIT & CO., Dublin—Bulbs.

COMMUNICATIONS RECEIVED.—R. H. Munday.—Diss.—H. H. Norie.—D. T. F.—De Mar.—J. G. B.—R. C. E. H.—W. H.—A. D.—C. Y. M.—H. E.—C. W. D.—H. E., Ryde.—Dr. Bonavia.—B. W.—Asa Grey.—A. F. B.—A. W. B.—C. B. P.—Bruce Findlay.—C. R.—R. P.—H. Ward.—G. C.—Crystal Palace.

Markets.

COVENT GARDEN, September 4.

MARKET very quiet; supplies still heavy. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	1 6
Figs, per dozen	0 6	0 9	Pine-apples, Eng., lb.	6 0	..
Grapes, per lb.	0 6	3 0	Peaches, per doz.	2 0	10 0
Kent Filberts, lb.	0 6	0 7	Plums, ½-sieve	4 0	9 0
Lemons, per case	10 0	14 0	Pears, French, doz.	1 0	1 9

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0	Horse Radish, bund.	3 0	4 0
Asparagus, English, per 100	3 0	5 0	Lettuces, Cabbage, per dozen	1 6	..
Aubergines, each	0 4	..	— Cos, each	0 2	..
Beans, French, lb.	0 4	..	Marrows, each	0 2	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Cabbages, per doz.	1 0	1 6	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 6	..	Onions, per bunch	0 6	..
Cauliflowers, English, dozen	3 0	4 0	— Spring, per bun.	0 6	..
Celery, per bundle	1 6	2 6	Parsley, per bunch	0 9	..
Cucumbers, each	0 6	1 0	Peas, English, quart	1 6	..
Endive, French, per dozen	2 6	3 6	Radishes, per doz.	1 6	..
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per strike	2 0	..
			Tomatos, per lb.	1 0	..
			Turnips, new, bun.	0 8	..

POTATOS.—Kent Regents, 80s. to 100s.; Kent kidneys, 70s. to 100s.; Champions, 70s. per ton. Trade heavy.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Lapageria, red, 12 blooms	1 0	2 0
Arum Lilies, 12 blms.	3 0	6 0	Lavender, 12 bun.	6 0	8 0
Asters, 12 bunches	3 0	6 0	Marguerites, 12 bun.	3 0	6 0
Bouvardias, per bun.	0 9	1 0	Mignonette, 12 bun.	1 0	4 0
Calceolaria, 12 sprays	0 4	1 0	Pelargoniums, per 12 sprays	0 6	1 0
Carnations, 12 bun.	2 0	6 0	Primula, double, bun.	1 0	1 6
Chrysanth., 12 bun.	3 0	9 0	Pyrethrum, 12 bun.	2 0	6 0
— large, 12 blooms	3 0	6 0	Rhodanthes, 12 bun.	4 0	6 0
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	4 0
Dahlias, 12 bunches	3 0	6 0	— (outdoor), 12 bun.	2 0	6 0
Eucharis, per doz.	3 0	6 0	— coloured, doz.	4 0	9 0
Forget-me-not, 12 bunches	2 0	6 0	Stephanotis, 12 spr.	3 0	6 0
Gardenias, 12 blms.	3 0	6 0	Stocks, 12 bunches	3 0	6 0
Gladiolus, various, 12 bunches	6 0	12 0	Sweet Peas, 12 bun.	1 6	4 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Sultan, 12 bun.	2 0	4 0
Lapageria, white, 12 blooms	2 0	3 0	Tuberoses, per doz.	0 6	1 0
			White Jasmine, bun.	0 6	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Foliage Plants, various, each	2 0	10 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Fuchsias, per doz.	3 0	6 0
— (common), dozen	6 0	12 0	Heliotrope, doz.	3 0	6 0
Asters, per dozen	3 0	6 0	Hydrangea, per doz.	9 0	18 0
Begonias, per doz.	4 0	12 0	Lilium longiflorum, per dozen	6 0	18 0
Bouvardia, dozen	9 0	18 0	— lancifolium, doz.	6 0	18 0
Calceolarias, per doz.	4 0	9 0	— auratum, doz.	12 0	24 0
Chrysanth., dozen	4 0	9 0	Marguerite Daisy, per dozen	8 0	12 0
Cockscombs, doz.	2 6	4 0	Mignonette, per doz.	3 0	6 0
Coleus, various, doz.	2 0	4 0	Myrtles, per doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Palms in variety, each	2 6	21 0
Dracæna term. doz.	30 0	60 0	Pelargoniums (show), per dozen	4 0	9 0
— viridis, per doz.	12 0	24 0	— scarlet, per doz.	2 0	6 0
Erica, various, doz.	9 0	18 0	Petunias, per dozen	3 0	6 0
Euonymus, various, per dozen	6 0	18 0	Rhodanthes, p. dozen	4 0	6 0
Evergreens, in var., per dozen	6 0	24 0	Solanums, dozen	9 0	15 0
Ferns, in var., dozen	4 0	18 0			
Ficus elastica, each	1 6	7 0			

CORN.

At Mark Lane on Monday supplies of English Wheat being small prices were quoted steady as compared with the previous Monday, but not better. Of Foreign Wheat arrivals have been heavy, buyers consequently acted with considerable reserve, and the day's business was small and disappointing at about the rates of Monday se'nnight. Flour was dull at the recent easier prices. Maize was barely so firm. Barley was slack, although there was a little more enquiry: prices were unchanged. Oats were firmer on the week; common qualities have advanced 3*d.* and 4*d.*, and the better grades are at length participating in the improvement.—Wednesday's Wheat trade was dull. English was in small supply, and not worse in price than on Monday; foreign was flat. Barley was without quotable alteration. Maize was firmer. Oats were again rather dearer.—Average prices of corn for the week ending August 30:—Wheat, 35*s.* 1*d.*; Barley, 32*s.* 1*d.*; Oats, 20*s.* For the corresponding period last year:—Wheat, 43*s.* 2*d.*; Barley, 30*s.* 5*d.*; Oats, 22*s.* 2*d.*

CATTLE.

At the Metropolitan Market on Monday supplies of cattle were fully adequate to demand, which was dull. Choice cattle were scarce, and realised quite previous rates; but for second qualities lower rates had in some cases to be taken to close sales. The sheep supplies were light, and prices rather higher in consequence, although the demand was not brisk. Calves sold badly. Quotations:—Beasts, 4*s.* 8*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 4*s.* 8*d.* to 5*s.* 10*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*—On Thursday the very inclement weather checked business. Beasts sold at late rates, but a great many sheep remained on hand.

HAY.

Tuesday's Whitechapel Market report states that trade was very dull, supplies were good, and top prices of Clover and hay lower. Quotations:—Prime Clover, 95*s.* to 115*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 115*s.*; best meadow hay, 80*s.* to 95*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 36*s.* per load.—On Thursday there were short supplies, and business was suspended on account of the weather.—The Cumberland Market report states that there was a fair supply, at the following quotations:—Prime old Clover, 100*s.* to 112*s.*; inferior, 60*s.* to 75*s.*; prime old hay, 80*s.* to 90*s.*; new, 70*s.* to 84*s.*; and straw, 30*s.* to 35*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that the supplies continue good of home growth, and trade rather slacker. Quotations:—Kent kidneys, 70*s.* to 90*s.*; ditto Regents, 70*s.* to 90*s.*; Essex Shaws, 60*s.* to 70*s.*; Magnum Bonums, 70*s.* to 80*s.*; Early Roses, 80*s.* to 95*s.* per ton.—The imports into London last week consisted of 40 bags from Hamburghs, and 1533 from Stettin.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 16*s.* 6*d.*; Wear, 15*s.*; East Hartlepool, 16*s.* 3*d.*; South Hartlepool, 15*s.* 3*d.*; Tees, 17*s.* 3*d.*

Government Stock.—Consols closed on Monday at 100⅞ to 100⅝ for delivery, and 100 1/16 to 100⅛ for the account. On Tuesday prices for delivery were as on the preceding day, and 100⅝ to 101 for the account. Wednesday's closing prices were 100⅝ to 100⅞ for delivery, and 100 1/16 to 100⅛ for the account: the same figures were recorded at the close on Thursday.

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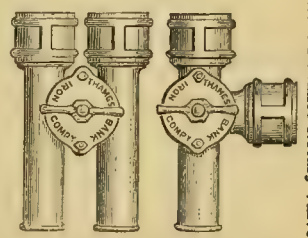
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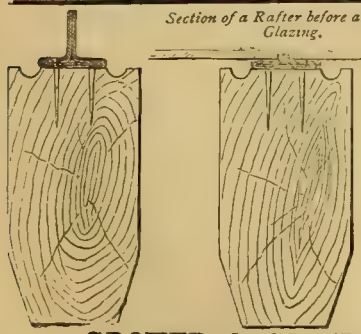


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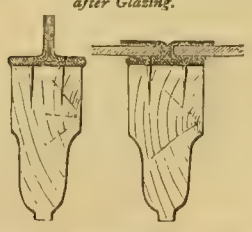
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		Marks.	Marks
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,, sclerocarpa	Sept.	10	80
Areca lutescens	April	4	25
,, 5,000 Seeds, 100 marks			
,, 10,000 Seeds, 160 marks			
,, madagascariensis	June	4	20
,, rubra	Jan.	2	15
,, 5,000 Seeds, 50 marks			
Astrocaryum Ari	Nov.	15	120
Attalea speciosa	May	30	..
Bactris maraja	Nov.	0	40
Copernicia cerifera	Jan.	10	80
Desmoncus sp. Rio	May	10	..
Diplothemium candescens ..	March	15	130
,, maritimum	March	12	100
Elaeis guineensis	May	12	100
Euterpe edulis	May	6	50
Geonoma gracilis	March	5	30
,, 5000 Seeds, 120 marks			
,, Schottiana	June	5	30
,, sp. Quéluz	June	8	60
Caryota sobolifera	irregular	6	40
,, urens	irregular	6	40
Cocos campestris	Jan	7	50
,, flexuosa	March	5	30
,, oleracea	Jan.	10	80
,, plumosa	irregular	5	30
,, 5000 Seeds, 250 marks			
Cocos procopiana	Nov.	20	180
,, Weddelliana	Dec.	7	55
,, 5,000 Seeds, 250 marks			
,, 10,000 Seeds, 450 marks			
Coffea arabica	May	2	15
,, yellow fruited variety ..	May	3	25
,, var. MARAGOGIPE ..	May	5	40
,, per bushel, 200 marks			
,, var. MURTA	May	5	40
,, per bushel, 160 marks			
Glazovia insignis	Dec.	8	60
Livistonia sinensis	Aug.	2	12
,, 5000 Seeds, 50 marks			
Maximiliana regia	Aug.	20	..
Oreodoxa oleracea	March	2	10
Pandanus utilis	irregular	3	20
,, 5,000 Seeds, 80 marks			
,, 10,000 Seeds, 150 marks			
Ravenala madagasc.	irregular	8	50
Philodendron bipinnatifidum ..	April	3	20
,, speciosum	April	3	20
,, 5,000 Seeds, 75 marks			
,, 10,000 Seeds, 120 marks			
Vriesia hieroglyphica	June	5	30

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PTERIS SERRULATA CRISTATA COWANI, new, in 3-inch pots, 6s. per doz.
LASTREA ARISTATA VARIEGATA, in 3-inch pots, 4s. per doz.
TEA ROSES in variety, a grand stock in 5-inch pots, 12s. per doz.; 7-inch pots, 24s., 30s., and 36s. per doz.
GRAPE VINES in fruit, with six and seven bunches on each plant, 12s. 6d. and 15s. each; for fruiting in pots or planting Vineries, 5s., 7s. 6d., 10s. 6d., and 12s. 6d. each, according to strength. Stock in grand condition.
Plants sent to compensate for carriage. The usual allowance to the Trade. The Vineyard and Nurseries, Garston.

PLANTS for EARLY FORCING.
RHODODENDRONS, grown in the natural loam of our Stoke nurseries, well set with flower-buds, 30s. per dozen.
,, large bushes, well set with flower-buds, 42s. and 60s. per dozen.
AZALEAS, Ghent, and other varieties, well set with flower-buds, 18s. and 30s. per dozen.
,, large Ponticums, for cut blooms, 30s. per dozen.
,, Mollis, well set with flower-buds, 18s. and 30s. per dozen.
,, Amœna, fine large clumps, good shape, 18s. and 30s. per dozen.
SPIRÆA JAPONICA, fine clumps, 12s. and 18s. per dozen.
CATALOGUES on application.
W. MAULE AND SONS, The Nurseries, Bristol.

NEW RASPBERRY,

BAUMFORTH'S SEEDLING.

From the great reputation this splendid new Raspberry has attained for size, quality, and heavy cropping, the demand for canes has been enormous the last season, and I believe, from information received, I may this year anticipate orders far exceeding last.

Extract from the "Gardeners' Chronicle," March 1, 1884, p. 280.

RASPBERRY — BAUMFORTH'S SEEDLING.

"Planters of Raspberries should not omit to obtain this excellent sort, and when once they have given it a fair trial they will plant it in quantity. It has the character of being an excellent bearer, in good seasons bringing a fair second crop of fruit to maturity. The plant is vigorous, carries stout dark green foliage, and large broad-pipped dark crimson fruit. It is much valued on the strong loamy soils of Bucks."

From Mr. D. MELVILLE, *Gardener to* Mrs. Hornsby, *St. Vincents, Somerby.*

"Having had ample opportunity of judging the merits of your excellent Raspberry, Baumforth's Seedling, I must congratulate you on behalf of what I consider, without doubt, the best Raspberry in cultivation. The fruit is an extraordinary size, much larger than any variety of Raspberry I am acquainted with. Excellent flavour, in shape of berry round with dark crimson colour, a vigorous grower, and a most prolific constitution, supplying a quantity of fine fruit in the autumn from the season's young wood. I would strongly recommend intending planters to give Baumforth's Seedling a fair trial, which, under ordinary treatment, is certain to give satisfaction."

Early Orders respectfully solicited.

PRICES:—

Planting Canes .. .. 3*s.* 6*d.* per dozen, 20*s.* per 100.
Fruiting Canes .. .. 5*s.* ,, 30*s.* ,,

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THE YORKSHIRE SEED ESTABLISHMENT, HULL.

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FINEST QUALITY. LOWEST PRICES.

	Per doz.	Per 100
HYACINTHS, White Romam	2 0	15 0
,, White Italian, stronger growth, a week later	2 0	15 0
,, Blue Roman, pretty colour	1 6	10 6
,, Double, pale rose Italian—this forces white: a lovely variety	2 0	15 0
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NARCISSUS, Double Roman, with yellow intermixed	2 0	12 6
,, Paper-White, pure white, lovely ..	1 9	10 6
,, Stella, very large white, with yellow cup, new	3 6	25 0
,, (Corbularia) citrina, pale lemon, a lovely frilled cup	7 0	55 0
JONQUILS, sweet scented, yellow, single	1 0	0 6
,, ,, ,, double	2 0	12 6
TULIPS, Duc van Thol, red and yellow ..	1 0	6 6
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LILIUM HARRISI, white trumpet, the grandest of all	12 0	80 0
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TUBEROSES, Double White African, splendid	6 0	45 0

All ready for immediate delivery. 5s. worth and upwards Carriage Free.

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ADIANTUM CUNEATUM, in 48's and 32's, very good.
,, FARLEYENSIS in 48's
CYPERUS ALTERNIFOLIUS VARIEGATUS.
DRACÆNA STRIATA, Green, a fine variety for Conservatory.
GARDENIAS in all sizes.
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JOHN LAING & CO.
Special Offer of White Begonias.

Seedlings from three best whites, large tubers, per dozen 12*s.* Producing fine decorative plants. Most useful for cutting. Free by Parcels Post.

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LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
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INSECTICIDE (SOLUBLE IN WATER)

For destroying ALL INSECTS and PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage. It cures Mildew and Blight on Fruit or Foliage, and a weak solution Kills all Vegetable Grubs, Turnip Fly, &c. Clears Grapes from Mildew or Mealy-Bug without affecting the bloom. Thickened with a little clay makes a good winter dressing. Destroys Lice and Fleas on Animals and Birds. Sold by Seedsmen and Chemists, 1*s.* 6*d.*, 2*s.* 6*d.*, and 4*s.* 6*d.* a bottle. Per gal. 12*s.* 6*d.*, or less in larger quantities. Per post 3*d.* extra.
A treatise on FIR TREE OIL as an Insecticide, its application to Plants and Animals, sent Post-free on receipt of address, by the Manufacturer,

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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

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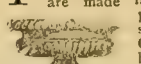
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Long.	Heat of 4-in. Pipe.	Price of Boiler and *set of Fittings.
A, 19 in.	150 feet	£5 10 0
B, 22 in.	300 ,,	6 15 0
C, 24 in.	400 ,,	8 5 0
D, 26 in.	500 ,,	9 10 0
E, 28 in.	600 ,,	10 15 0
F, 32 in.	700 ,,	12 5 0
G, 36 in.	850 ,,	13 15 0
H, 42 in.	1000 ,,	15 10 0
I, 48 in.	1250 ,,	17 5 0
J, 54 in.	1600 ,,	19 10 0
K, 60 in.	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c

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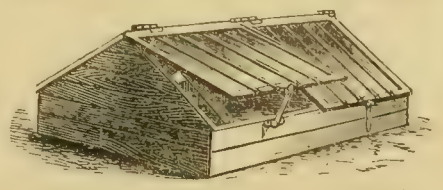
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6 feet long, 4 feet wide, packing cases free	£2 15 0
12 feet long, 4 feet wide, ,, ,, ,,	4 15 0
6 feet long, 5 feet wide, ,, ,, ,,	3 15 0
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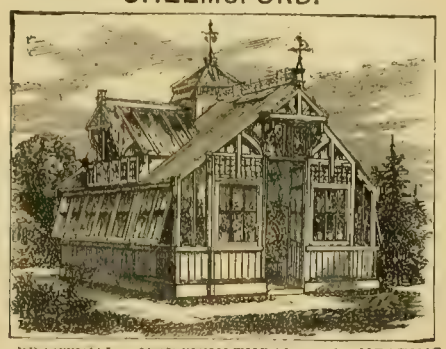
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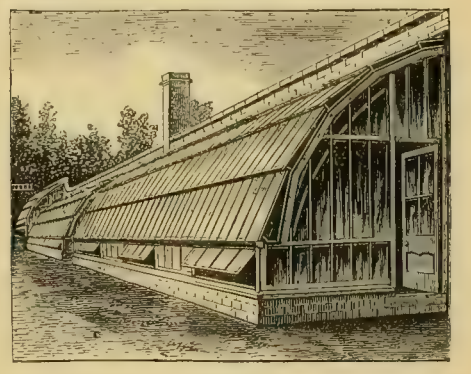
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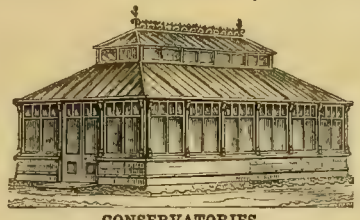
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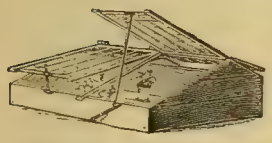
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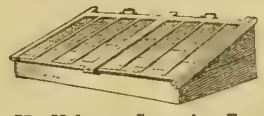


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These Frames are 11 inches deep in front, 22 inches deep at back, and 32 inches in the centre. Front or back lights turn over. Set-opes are provided for ventilating. All painted four coats of best oil colour, the lights glazed with best 21-oz. English glass.



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These Frames are 13 inches deep in front, and 24 inches deep at the back; the lights are 2 inches thick, with an iron bar and one handle to each light. All painted four coats of best oil colour, the lights glazed with 21-oz. English glass.

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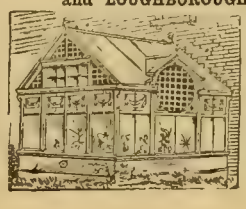
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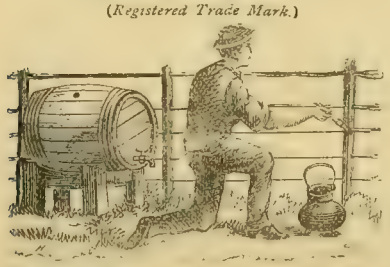
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HILL AND SMITH'S BLACK VARNISH,
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Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—SIRS,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

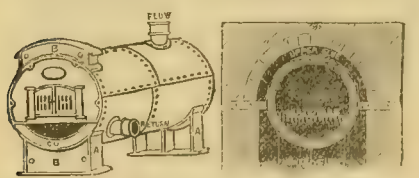
CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

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Recently Improved and Reduced in Price.



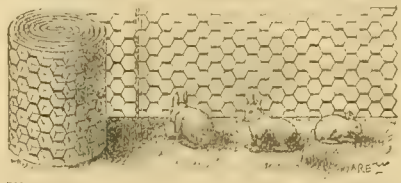
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4-inch Pipes, 1*s.* 6*d.* per yard.
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PATENT RED-RUBBER GARDEN HOSE.
Stands severe tests of Government Departments, thus proving superiority of quality. Lasts four times as long as ordinary Indiarubber Hose, Lighter in Weight, Greater in Strength, and Cheaper in the long run than any other Hose for Garden Use.

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Private Customers Supplied at Trade Prices.

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MERRYWEATHER & SONS,
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Iron Hurdles, Gates, Tree Guards, Iron and Wire Espalier, &c., &c.



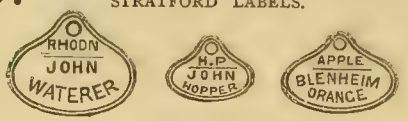
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TANNED NETTING,
Specially selected for Garden Use.
2 yards wide, 1½*d.*, and 4 yards wide, 3*d.* per yard run.
Scrim, Hessian, and **Tiffany,** for protecting Fruit Trees and shading Greenhouses, from 2½*d.* per yard and upwards.
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BAMBOO CANES.—Thick for splitting and thin for using whole. The largest holder in England.
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J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
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JAMS, SOUPS,
BOTH IN WHITE GLASSES,
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SCHOOL of the ART of LANDSCAPE GARDENING and the IMPROVEMENT of ESTATES, CRYSTAL PALACE, S.E.
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Mr. MILNER has moved his Offices to the above address, where his professional work is now carried on.

Gentlemen having Waste or Unprofitable Land
SHOULD APPLY FOR
PAMPHLET ON NUT TREES
TO
Mr. COOPER, F.R.H.S.,
CALCOT GARDENS, READING, BERKS.

The Official Report
Of the Committee of the National Apple Congress, held at Chiswick in October, 1883.
THE ROYAL HORTICULTURAL SOCIETY will issue, in or about OCTOBER NEXT, a Full Report of the above, compiled by Mr. A. F. BARRON, Superintendent of the Royal Horticultural Society's Gardens, and Secretary of the Committee. Edited by the Rev. George Henslow, M.A., F.L.S., F.G.S. It will be in book form, octavo size, and contain about 200 pages, embracing:—
1. A General Report on the whole of the exhibits—arranged in ten separate groups or divisions, according to district—including the observations of the Committee, with cultural and other details by the several exhibitors, &c.
2. Tabulated lists of selected varieties of Apples for each separate district, &c.
3. A Descriptive Catalogue with classification of the whole of the varieties exhibited, numbering over 2000.

It is proposed to admit a limited number of first-class ADVERTISEMENTS, and, as a large sale is anticipated, it will be a specially valuable medium for Fruit and Seed Growers, Florists, Horticulturists, Garden Implement Makers, &c.
Advertisements will be inserted in all issues at the one price.
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Belgian.
BULLETIN d'ARBORICULTURE, de FLORICULTURE, et de CULTURE MARAICHERE. A monthly horticultural work, with superb Coloured Plates and Illustrations. Published since 1865, by F. BURVENICH, F. PAYNAERT, E. RODIGAS, and H. J. VAN HULLE, Professors at the Horticultural School of the Belgian Government at Ghent. Post-paid, 10*s.* per annum.
H. J. VAN HULLE, Botanical Gardens, Ghent, Belgium.

Farms, Estates, Residences.
Any one desirous of Renting a Farm or Residence, or Purchasing an Estate, can have copies of the
MIDLAND COUNTIES HERALD supplied free for six weeks on stating the purpose for which the paper is required, forwarding name and address, and six halfpenny stamps for postage, addressed "*Midland Counties Herald* Office, Birmingham." The *Midland Counties Herald* always contains large numbers of advertisements relating to Farms, Estates, and Residences for Sale and to be Let.

PARTNER.—Advertiser is anxious to meet with a Gentleman who would join him in Purchasing and Working a Large and Valuable Nursery and Seed Business.—Full particulars on application to A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

WANTED, a HEAD GARDENER, where another man is kept; must be thoroughly practical and experienced, and have good references from previous employers.—State wages required and references, by letter only, in the first instance, Mr. SALAMON, Thornton House, Thornton Road, Clapham Park, S.W.

WANTED, IMMEDIATELY, a good plain HEAD WORKING GARDENER, married, no family, to live in the Lodge. Wife to attend Gate. Good personal character. Wages £1 per week, with vegetables, milk, and fire-wood.—V., Foot's Cray, Kent.

WANTED, a GARDENER, to understand Glass and Kitchen Garden. Wages, 23*s.* per week; house, gas, and firing found. Age, from 30 to 40; must be married, and no children.—Stile Hall, Kew Bridge Road, Brentford. Call between 12 and 4 P.M.

WANTED, in a Gentleman's garden, a SECOND GARDENER, to take charge of Glass-houses and Fruit.—Apply, stating terms, to A. B., Mr. James, Silversmith, Stevenage.

WANTED, an UNDER GARDENER, to live in Bothy.—He must have a good knowledge of the work. Wages 16*s.* per week, with milk and vegetables.—J. C., Aldershot Park, Aldershot.

WANTED, a young man, as UNDER GARDENER, about 20 years of age; one with some knowledge of Houses preferred.—State experience, and wages expected, to GEO. MILNE, The Gardens, Titley Court, Titley, Herefordshire.

WANTED, a FOREMAN for a Nursery in Wales, with a good knowledge of Nursery Work and well acquainted with the Propagation of Evergreens and Conifers. A married man preferred.—Apply stating age, wages expected, and where formerly employed, to WELSH NURSERY, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, AT ONCE, a steady industrious young MAN, accustomed to Kitchen Garden.—E. F. CROCKER, The Gardens, Ham Green, near Bristol.

WANTED, a married MAN, without family, about 30, to take charge of Pleasure Grounds.—Must thoroughly understand his business, and have a good character from last situation.—H. F., Worthampton House, Great Stanmore.

WANTED, a strong active young MAN, accustomed to General Outdoor Garden Work. Wages 14*s.* per week and bothy.—F. NEWMAN, Fernihurst, Shipley, Yorks.

JOHN STEVENS, The Nurseries, Coventry, has a VACANCY for a young LADY, to Learn the Florist and Seed Trade. Could reside with the family.—Address as above.

WANTED, in the office of a large Nursery, a MAN of experience, whose duties would mostly be in the Order Department, and in attending Customers.—Full particulars as to experience, wages required, &c., to D. E. F., Messrs. Hurst & Son, Seed Merchants, 152, Houndsditch, E.

WANTED, in the office of a large Nursery, a YOUTH with some knowledge of Book-keeping. - T. HEWITT AND CO., Solihull, Birmingham.

WANTED, a COWMAN, at Scarisbrick Hall. To a steady, industrious, sober man (age about 30 or 35), this will prove a very comfortable place. The man leaving has been with me seven years, leaving of his own accord. The duties are to look after ten Cows, and milk the same; to feed and attend to Pigs; to rear about twenty Calves in each year. Wages 20s. per week. A new cottage with garden at a low rent.—For any further particulars, apply to Mr. HEPBURN, Scarisbrick Hall, Ormskirk.

WANTED, a MAN, for Painting and Glazing, and rough Carpentering.—State wages required to Messrs. SMALL AND SONS, Lawn Nurseries, Ilkeston, near Notts.

WANT PLACES.

**** *Gardeners and others seeking situations are WARNED to be careful in their dealings with so-called Horticultural Agents, and are CAUTIONED NOT to SEND STAMPS or MONEY to any Agent unless they have good reason to know that he is a responsible man, likely to be able to fulfil his engagements.*

They are also specially advised not to send ORIGINAL TESTIMONIALS to Advertisers who may be unknown to them, without a special application for the same by letter.

THE LIVERPOOL HORTICULTURAL COMPANY (JOHN COWAN), Limited, The Vineyard and Nurseries, Garston, are in a position to recommend a capable trustworthy Man as GARDENER and FARM BAILIFF, to any Nobleman or Gentleman who may be in want of such a man.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

SCOTCH GARDENERS.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh, has at present on his list a number of SCOTCH GARDENERS, waiting re-engagements, at wages ranging from £50 to £100 per annum, and he will be pleased to supply full particulars to any Nobleman or Gentleman requiring a trustworthy and competent Gardener.

R. B. LAIRD AND SONS (successors to the late Firm of DOWNIE & LAIRD) can at present recommend with every confidence several first-rate SCOTCH GARDENERS, whose character and abilities may be thoroughly depended upon, either for Large Establishments or Single-handed Situations; also FOREMEN, UNDER GARDENERS, and FARM BAILIFFS.—17, Frederick Street, Edinburgh.

B. S. WILLIAMS begs to intimate that he has at present in the Nursery and upon his Register some excellent Men, competent either to fill the situation of HEAD GARDENER, BAILIFF, FOREMAN, or JOURNEYMAN. Ladies and Gentlemen requiring any of the above will please send full particulars, when the best selections for the different capacities will be made.—Holloway, N.

GARDENER (HEAD), where two or more are kept.—Age 30, single; good character from last and previous situations.—C. B., Bower Farm Cottage, Southgate, N.

GARDENER (HEAD), where one or more are kept.—Practical experience in all branches. Good testimonials.—H. C., 3, Fairview Terrace, Rowe's Road, Southgate, N.

GARDENER (HEAD).—A GENTLEMAN wishes highly to recommend a Head Gardener who is leaving his service owing to the house, &c, being about to be sold.—Mr. LINTOTT, Shopwyke House, Chichester.

GARDENER (HEAD), to any Lady or Gentleman requiring the services of a thoroughly practical Gardener in all the various branches.—Age 42, married, no encumbrance.—SAMUEL PICKERSGILL, Newton House, Falkingham, Lincolnshire.

GARDENER (HEAD), to any Lady or Gentleman requiring a good practical Gardener.—Mr. HENDERSON, Gardener to J. Deacon, Esq., Mabledon Park, Tonbridge, wishes to recommend his Foreman, Wm. Couzens, as above. Total abstainer.

GARDENER (HEAD), to any Lady or Gentleman requiring the services of a thoroughly competent and trustworthy man.—Age 44, married; Scotch. Could undertake Management of Land and Stock if required; excellent character and references.—W. M., Gardener, 13, East Bond Street, Leicester.

GARDENER (HEAD); age 33.—Mr. C. DIXON, Gardener to Lady Holland, Holland House, Kensington, will be pleased to recommend a thoroughly practical man as Head Gardener to any Lady, Nobleman, or Gentleman, requiring the same. Sixteen years' experience, eight years as Head.—Address as above.

GARDENER (HEAD).—Age 33, married, no family; thoroughly understands every branch of the profession; successful Orchid Grower; eighteen years' experience; five years in present situation; leaving through estate being sold. Highly recommended by present employer, W. J. Steward, Esq.—GEO. WYTHES, The Gardens, Thirlestaine Hall, Cheltenham.

GARDENER (HEAD WORKING).—Age 30, unmarried; fourteen years' practical experience in good establishments. Highest references as to character and ability.—D. MACKENZIE, Ingmire Gardens, Sedbergh, Yorkshire.

GARDENER (WORKING).—Age 40, married; understands his duties. Four and a half years' good character from last place.—G. G., 4, The Villas, Blindley Heath, South Godstone, Surrey.

GARDENER (HEAD WORKING).—Age 27, married, 2 children; fifteen years' experience in all branches of Gardening. Land and Stock if required.—M. W. STULLANDS, Ticehurst, Sussex.

GARDENER (HEAD WORKING).—Age 40; experienced in all branches. Wife could take Dairy or Laundry. Good references.—W. W., 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING).—Age 40, three in family; disengaged at Michaelmas. Twenty years' experience. Highest references.—GARDENER, Cazenove House, Clapham Common, S.W.

GARDENER (HEAD WORKING).—Age 27, married, no family; nine and a half years' experience in good places. Well recommended from present and previous places.—H. JACQUES, Cransley, Kettering, Northamptonshire.

GARDENER (HEAD WORKING), where he will have two or three hands under him.—A GENTLEMAN wishes to recommend his Head Working Gardener, as above.—For character apply to BAILEY DENTON, Esq., Orchard Court, Stevenage.

GARDENER (HEAD WORKING).—Age 42, one child (age 9); well versed in Early and Late Forcing, and the General Requirement of a Large Establishment. First-class references.—H. IRELAND, Iron Gates, near Ottery St. Mary, Devon.

GARDENER (HEAD WORKING), where one or two are kept.—Single; fifteen years' experience in Early and Late Forcing of Fruit, Stove and Greenhouse Plants, Orchids. Two years' excellent character from last place.—E. BUCKETT, Sarisbury Green, near Southampton.

GARDENER (HEAD WORKING), where three or more are kept.—Thoroughly experienced in Early and Late Forcing of Fruit, Cut Flowers, Stove and Greenhouse Plants, Flower and Kitchen Gardening, Land and Stock.—Y., 23, Salisbury Road, Upper Holloway, London, N.

GARDENER (HEAD WORKING).—Age 38; married, two children; understands Vines, Melons, Cucumbers, Stove and Greenhouse Plants, Flower and Kitchen Gardening. Good character.—B. B., Whitly Road, Rye Common, Hoddesdon, Herts.

GARDENER (HEAD WORKING), where more are kept.—Married, no family; highly respectable, energetic and trustworthy. Twenty-six years' first-class experience in every branch of the profession. Superintend Land and Stock if required. Satisfactory reasons for leaving; excellent character.—M. R., Springwood, Dartford, Kent

GARDENER (HEAD WORKING), or FOREMAN, where several are kept.—Age 26, married; three years' character from last and previous employers.—SMITH AND SON, Streatham Hill, S.E.

GARDENER.—Age 32, married; understands the Management of Vines, Cucumbers, Melons, Tomatos, the Cultivation of all kinds of Flowering Plants; also the Work of the Kitchen Garden and Hardy Fruit Trees. Wages, with cottage, 25s. per week. Testimonials good.—W. L., Myrtle Cottage, Freemantle, Southampton.

GARDENER (SINGLE-HANDED), or where two or three are kept.—Age 25; eleven years' experience in all branches. Can be highly recommended.—Write, stating full particulars and wages, to G. H., 3, Devonshire Place, Childs Hill, Kilburn, N.W.

GARDENER (SECOND), inside and out.—Age 25; two and a half years' good character.—H. H., Benhilton Mount, Sutton, Surrey.

GARDENER (SECOND).—Age 25; well experienced. Can be highly recommended.—G. GUY, 47, Essex Street, Reading.

GARDENER (SECOND), in a good establishment; age 24.—Mr. W. G. HAZELL, The Vineries, Wood Green, wishes to recommend a young man who has served under him for nearly three years.

GARDENER (SECOND).—Age 22; has had good experience in Vineries, Peach-houses, Plant-houses, and also Flower and Kitchen Gardening.—A. E. BUSH, Lilford Hall Gardens, Oundle, Northamptonshire.

GARDENER (SECOND), or as FLOWER and KITCHEN GARDENER.—Age 28; good references. Please state wages.—F. E., Albion News Rooms, Blackfriars Bridge, S.E.

GARDENER (SECOND), where Head Gardener assists, or FIRST JOURNEYMAN in good establishment; age 25.—Mr. RYE, Sneyd Park, Bristol, can with confidence recommend a young man as above.

GARDENER (SECOND), or JOURNEYMAN, Inside or Out, in a good establishment.—Age 23; good character from last and previous places.—J. LEE, Nun Monkton, near York.

GARDENER (SECOND), or JOURNEYMAN in the Houses, in a good establishment.—Age 21; good character. Bothy preferred.—A. WRIGHT, The Gardens, West Harling Hall, Thetford, Norfolk.

GARDENER (SECOND, or UNDER), in a good establishment.—Age 22; well up in all branches. First-class references.—F. PRIDGEON, Legbourne Road, Louth, Lincolnshire.

GROOM and PLAIN GARDENER.—Married, small family; country preferred. One and a half years' good character. Could Milk a Cow. Willing to make himself generally useful.—PORTER, 10, Wells Buildings, Hampstead, N.W.

FOREMAN.—Has been for some time in one of the largest Orchid establishment in France. Very highest references. Bothy preferred.—R. C., 180, High Street, Southampton.

FOREMAN, in a good establishment.—Age 25; understands Cucumbers, Melons, Vines, Pines, Peaches, Stove and Greenhouse Plants.—G. H. GREEN, Gardener, Enville Hall, Stourbridge, Staffordshire, can with confidence recommend a man as above.

FOREMAN (GENERAL, or otherwise), in a first-class establishment.—Mr. THOMSON, Gardener to the Duke of Grafton, Wakefield Lodge, Stony Stratford, Bucks, can recommend a thoroughly practical and experienced man as such.

FOREMAN (GENERAL), in the Houses, in a good establishment, where everything is well carried out.—Age 25; twelve years' experience in good establishments—three years as Foreman. Good character.—A. P., The Gardens, Byfleet Lodge, Weybridge, Surrey.

FOREMAN (OUTDOOR), or ROSE GROWER.—Age 30; fourteen years' first-class experience. Three and a half years' good character.—J. B., 5, Sandringham Terrace, West Green, Tottenham, N.

FOREMAN, or good SECOND.—Age 26; thorough knowledge of the profession. Good references.—C., Mr. Bible, Woodnehl, Stevenage, Herts.

PROPAGATOR and GROWER in a Nursery (indoors).—Young; well recommended.—W. J. C., Mr H. Barnet, 417, High Street, Cheltenham.

To Nurserymen.

PROPAGATOR, Stove, Greenhouse, and Soft-wooded.—Age 25; five years in present place in London Nursery.—H. RIDDLE, Lee's Nursery, Wood Lane, Isleworth.

JOURNEYMAN (INSIDE, good), or KITCHEN GARDENER and PLEASURE GROUND FOREMAN.—Age 23. Good wall hand. Two good references.—T. FULLER, 1, Gladstone Villa, Southfield, Wandsworth, Surrey.

JOURNEYMAN, in a Gentleman's establishment.—Age 23; good character. Five years' experience.—C. H., 6, Rutland Road, Perry Hill, Catford.

JOURNEYMAN, in the Houses; age 22.—J. JEFFERSON, The Gardens, Carlton House, Worksop, Notts, wishes to recommend a young man who has served under him for the past two and a half years.

TO NOBLEMEN and GENTLEMEN.—The Advertiser (age 37, married) is desirous of Taking Charge of extensive Gardens and Glass, where the surplus is sold to defray expenses. Good Forcer of Fruit, Flowers, and Vegetables. Highly recommended.—C. H. Dale, 231, High Road, Lee, Kent.

TO GROWERS of PLANTS and FRUIT in General for Market.—The Advertiser (age 37), a thorough practical man, is open for an engagement; can also undertake the Erecting and Heating of all Houses for the above purposes. Highest references.—Address particulars to A. B., Messrs. Cutbush & Son, The Nurseries, Barnet, Herts.

IMPROVER.—Age 21, with seven years' experience; desires a situation where he can further Improve himself in the Houses. Total abstainer. Good character from present Head Gardener.—WILLIAM CANN, 19, Waterloo Place, North Shields.

IMPROVER.—An intelligent youth (nearly 19); five years' experience Indoors and Out. Two years' good character from present, and three from previous situation. Bothy preferred.—W. SILLS, The Gardens, Shoreham Place, Sevenoaks, Kent.

TO GARDENERS.—A. W. WARD, Longford Castle, Salisbury, would be pleased to recommend a deserving youth (age 17), who has been two years in the houses here, to any Gardener requiring a sharp, hard-working lad.

TO FLORISTS.—Wanted, by a youth (18), a situation with a Florist, where a small salary would be given to commence with, and a good opportunity of promotion. Only been out three months.—CHARLES WALL, Aldborough Borobridge, near York.

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Seed Trade.

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To Nurserymen and Florists.

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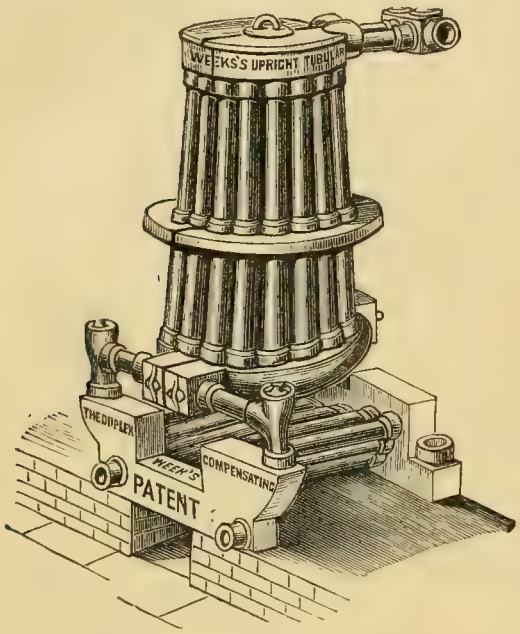
Seed Trade.

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TO FLORISTS.—Wanted, re-engagement by a young LADY. Thoroughly understands the Business throughout all its branches. First-class London experience. Good references.—E. P., 114, Terminus Road, Eastbourne.

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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 6, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 559.—Vol. XXII. {New Series.} SATURDAY, SEPTEMBER 13, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. Post-free, 5½d.

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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Thursday Next—(Sale No. 6725)

FLOWERING ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 18, a COLLECTION of ORCHIDS in Flower, comprising, amongst others, one of the finest plants in the country of the rare Masdevallia Chelsoni.

On view morning of Sale, and Catalogues had.

Thursday Next (Sale No. 6726)

VERY VALUABLE IMPORTATIONS.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, September 18, at half-past 12 o'Clock precisely, Grand Importations of CATTLEYAS and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Specimen Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 25, at half-past 12 o'Clock precisely, the entire COLLECTION of ORCHIDS formed by the late T. D. Cunningham Graham, Esq., Dunlop House, Dunlop, Ayrshire, and now belonging to his late Gardener, Mr. D. Kemp, who intends to dispose of the whole entirely without reserve. The collection comprises, amongst other rare and valuable things:—

Angræcum sesquipedale, very large, 4 feet high
Miltonia Clowesii majus, 2 feet across
Vanda Lowii, splendid healthy plant
Cypripedium grande, two strong growths
Cattleya Trianæ Massangeana
Cypripedium selligerum majus
,, punctatum violaceum
Vanda suavis, Manchester var.
Zygopetalum Sedeni
Cypripedium albo-purpureum
Lælia anceps Hilli
Vanda Lowii, splendid plant
Lælia anceps Barkerii
Cypripedium marmorophyllum
Lælia purpurata alba
Sobralia zantholeuca, true
Vanda Sanderiana, well-rooted plant
Cypripedium caudatum, 2 feet across
Dendrobium filiforme
Cœlogyne Massangeana
Vanda suavis (Veitch's var.)
Masdevallia Harryana splendens
Cypripedium microchilum
,, insigne Maulei
,, euryandrum
Dendrobium densiflorum
,, Guibertii
,, thyrsiflorum Walkerianum
Epidendrum prismatocarpum "Veitch"
Vanda insignis, true
Cymbidium Lowianum, fine plant of Russel's var.

Also other magnificent specimen VANDAS, a grand plant of CYPRIPEDIUM DOMINIANUM, with over 30 young growths; splendid specimen CATTLEYA INTERMEDIA, over 100 Bulbs and 20 young growths; AERIDES, SACCOLABIUMS, CŒLOGYNES, ODONTOGLOSSUMS, LÆLIAS, ONCIDIUMS, PHALÆNOPSIS, CALANTHES, a few NEPENTHES, &c., all in the grandest possible health.

On view morning of Sale, and Catalogues had.

Sales Every Monday, Thursday, and Saturday.

DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Great Horticultural Sale Week.

IMPORTANT NOTICE to NURSERYMEN and FLORISTS.

MESSRS. PROTHEROE AND MORRIS beg to call special attention to the following SALES of HEATHS and other PLANTS, all of which have been arranged to take place the same week.

Their Sales for this particular week will comprise in the aggregate nearly 8000 lots, and have been arranged in this manner to enable country buyers to attend them all during the one visit to London.

Offices and Auction Rooms, 67 and 68, Cheapside, E.C.

Tuesday Next.

MASDEVALLIA HARRYANA—

An Extraordinary Importation.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, at half-past 12 o'Clock precisely, a magnificent COLLECTION of MASDEVALLIA HARRYANA, just brought home and offered by Mr. Maw (the Collector). Out of several thousand plants seen in flower, only the finest varieties were selected, and every plant offered has a dried flower to correspond, which will be on view and at the disposal of the purchaser. It will be seen by these blooms that this is the finest lot of Masdevallia Harryana ever brought before the public, most of the flowers being of unusual size and possessing the most striking colours, many of the varieties being quite unique. Large masses will be found amongst the importation, and all the plants are full of breaks.

On view the morning of Sale. Catalogues may be had of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

ESTABLISHED ORCHIDS from well known collections.

MESSRS. PROTHEROE AND MORRIS will include in their SALE at the Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 16, about 300 Lots of ESTABLISHED ORCHIDS, from well-known collections, amongst which will be found:—

Cattleya Sanderiana, splendid specimen
,, Wallisi
Odontoglossum bictonense album
,, aspersum
,, Cervantesi decorum
,, Coradinei
Odontoglossum odoratum sulphureum
Calanthe Textori
Dendrobium Ainsworthi
,, Harveyanum
Lælia anceps Dawsoni
Oncidium Jonesianum
,, bicolor

and others. On view morning of Sale and Catalogues had.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE.

To commence punctually at 11 o'Clock, in consequence of the unusually large number of 1140 lots.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. B. Maller to SELL by AUCTION, on the Premises, The Burnt Ash Nursery, Lee, Kent, S.E., adjoining the Lee Railway Station, on TUESDAY, September 16, at 11 o'Clock precisely, 20,000 Winter-blooming HEATHS, beautifully grown, and well set with bloom-buds, and which are unsurpassed in the Trade, comprising:—

15,000 Erica hyemalis
3,000 ,, gracilis
1,000 ,, caffra
Large quantities of ventricosa, grandinosa, melanthera, and others
Thousands of Erica hyemalis in small pots, for growing on
1000 Epacris
1000 Decorative Palms
1000 Grevillea robusta
7000 Solanum capsicastrum, well berried
2000 Adiantum cuneatum, graciliimum, and Pacotti
1000 Cyclamen persicum
1000 Ampelopsis Veitchii
6000 Bouvardias, including the double white and red Alfred Neuner, and President Garfield
2000 Genistas

Maréchal Niel and other dwarf ROSES; 600 PASSION-FLOWERS, English grown; AZALEAS and CAMELLIAS, double white PRIMULAS, extra strong; STEPHANOTIS, HOYAS, GARDENIAS, and other Stock.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B. The Auctioneers desire to call attention to this Annual Sale. The Stock is in unusually fine condition, as in previous years, and intending purchasers are invited to inspect it.

Lea Bridge Road Nurseries, Leyton, E.

UNRESERVED SALE.—EXPIRATION of LEASE.

GREAT ANNUAL TRADE SALE of WINTER FLOWERING HEATHS and other PLANTS, by order of Mr. John Fraser.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Lea Bridge Road Nurseries, Leyton, E., close to Hoe Street Railway Station, on WEDNESDAY, September 17, at 11 o'Clock precisely (in consequence of there being upwards of 1100 lots), without reserve, many thousands of winter-blooming and other HEATHS, remarkably well grown, including hyemalis, gracilis, hybrida, candidissima, Parmentiera rosea, persoluta alba, and others; EPACRIS of the choicest kinds, 1500 AZALEA INDICA, 2000 CYCLAMEN PERSICUM, 1000 GENISTA FRAGRANS, 400 Double White PRIMULAS, in 40 and 48 pots; Tea-scented and Noisette ROSES, SOLANUM CAPSICASTRUM in berry, several hundreds of well-grown CAMELLIAS, well set with bloom; CLEMATIS INDIVISA LOBATA, and other GREENHOUSE CLIMBERS; 1500 early flowering CHRYSANTHEMUMS, 200 Maréchal Niel and other ROSES, from 7 to 10 feet; a large quantity of fine plants of AMPELOPSIS VEITCHII, a variety of GREENHOUSE PLANTS, fine healthy young plants of LAPAGERIA ALBA and ROSEA SUPERBA, a beautiful lot of about 300 ARAUCARIA EXCELSA, CLEMATIS JACKMANNI, a splendid lot of variegated IVIES, and other stock.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tottenham, N.

GREAT ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS, by order of Mr. John Maller, to commence punctually at 11 o'Clock, there being upwards of 1200 lots in one day.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Brunswick Nursery, Tottenham, N., close to White Hart Lane Station, Great Eastern Railway, on THURSDAY, September 18, at 11 o'Clock precisely, upwards of 1200 lots of remarkably well-grown STOVE and GREENHOUSE PLANTS, mostly in No. 48 and 32-pots, and fit for immediate sale, consisting of 20,000 WINTER BLOOMING HEATHS, beautifully grown and abundantly set with flower, including ERICA HYEMALIS, GRACILIS CAFFRA, ASSURGENS, WILMOREA, and other best kinds.

5000 remarkably well berried Solanums
1000 handsome Palms
5000 Bouvardias
1000 Grevillea robusta
5000 well-grown Ferns
4000 Tree Carnations, best varieties
1000 Epacris
4000 Genistas
1000 double white Primulas

500 Ficus elastica, 1000 Euphorbias, 500 Myrtles, large Azaleas and Camellias for cutting, 1000 Acacias in variety, many thousands of small Ericas, Genistas, and Ferns for growing on, Euonymus ovatus aureus in pot, and many thousands in stores, Shrubs for potting, and other Stock.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The whole of the stock is in first-rate condition, the Ericas being especially well set for flower.

Sidcup, Kent, S.E.

GREAT TRADE SALE

Of WINTER-BLOOMING HEATHS and other PLANTS, comprising probably one of the largest Stocks ever offered in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory & Evans to SELL by AUCTION, on the Premises, The Longlands Nursery, Sidcup (about ten minutes' walk from Pope Road Station, South-Eastern Railway), on FRIDAY, September 19, at 11 o'Clock punctually, in consequence of there being upwards of 1000 lots,

40,000 WINTER-BLOOMING HEATHS,

which are particularly well grown and beautifully set with flower, consisting of

15,000 Erica hyemalis
10,000 ,, gracilis
5,000 ,, persoluta alba
5,000 ,, Cavendishi
5,000 ,, ventricosa
4000 Genistas
3000 Solanums, well berried
2000 Adiantums
2000 Cinerarias
1000 Double Primulas

and other Stock.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—Messrs. Gregory & Evans in announcing this, the first of their Annual Sales, beg to call the attention of the Trade to their unrivalled Stock of ERICA HYEMALIS, GRACILIS, ADIANTUMS, &c., as advertised above, the whole being in unusually fine condition. The Stock will be offered in extra large lots and an inspection is invited.

Friday Next—Without Reserve.

ESTABLISHED ORCHIDS, including 1000 ODONTOGLOSSUM ALEXANDRÆ, finest varieties.

Important to the Trade and other large Buyers.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 19, at half-past 12 o'Clock precisely, a large quantity of ORCHIDS, established and semi-established, selected with the view to meet "Trade requirements." None of the plants have flowered, and varied, new, and superb varieties may be looked for. Care has been taken to select species most sought after. This is an unusual opportunity for the Trade, as the plants will be sold without reserve.

On view morning of Sale, and Catalogues had.

Clapham, S.W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Rose Nursery, 30, High Street, Clapham, S.W., near the Clapham Road Railway Station, on TUESDAY, September 23, at 12 o'Clock precisely, by order of Mr. G. B. Fischer, the Surplus Stock of STOVE and GREENHOUSE PLANTS, the whole of which are remarkably well grown, and in the best health and condition, including Asp distras, Hoyas, Stephanotis, Dracænas, Ficus, Gardenias, Camellias, Azaleas, a fine assortment of Palms and Ferns, two nearly new; Conical Boilers, &c.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Ealing, W.

ABSOLUTE SALE of the whole of the STOCK in TRADE, Horses, Van, and effects, without the slightest reserve.

IMPORTANT to the TRADE.

MESSRS. PROTHEROE AND MORRIS having sold the Nursery are now instructed to SELL by AUCTION on the premises, the Haven Green Nursery, Ealing, W., about ten minutes' walk from the Ealing Railway Stations, on WEDNESDAY, Sept. 24, at 12 o'Clock precisely, the whole of the well grown GREENHOUSE PLANTS, including about 20,000 Maidenhair Ferns in No. 24, 32, 48 and 60 pots; Bouvardias, 1000 Lomaria gibba, 2300 Cyperus, 2000 Marguerites, 800 Azaleas, 4000 Geraniums, Palms, Pinks, Carnation, Chrysanthemums, Evergreen and Deciduous Shrubs, two HORSES, VAN, UTENSILS in TRADE, and numerous effects.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises; of Messrs. M. and H. TURNER, Solicitors, 22, Sackville Street, W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Brighton.—Preliminary Notice.

By order of the Executors of the late Mr. Thomas Killick.

IMPORTANT CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nursery, Dyke Road, Brighton, on WEDNESDAY and THURSDAY, October 8 and 9, the whole of the remarkably well grown NURSERY STOCK, 15,000 Dwarf Roses, AGRICULTURAL IMPLEMENTS, HORTICULTURAL REQUISITES, three HORSES, and the HOUSEHOLD FURNITURE and effects.

Further particulars will appear.

N.B. The valuable FREEHOLD BUILDING ESTATE TO BE SOLD. Particulars of the Auctioneers.

Brixton.

Five minutes' walk from Loughborough Junction Station, and only 2½ miles from the City or West End.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Dowling to SELL by AUCTION, on the Premises, the Swiss Nursery, Angel Road, Brixton, on THURSDAY, September 25, at 12 o'Clock precisely, the beneficial INTEREST in the LEASE of the NURSERY, comprising Half an Acre of Ground with 7 Greenhouses, held for an unexpired term of nearly Forty Years at a quit-rent of only 1s. per annum. Also the Interest in the Agreement for Lease of piece of GARDEN GROUND, situate in Alington Place, with 3 Greenhouses. Immediately after the Sale of the Leases will be offered in suitable lots the whole of the GREENHOUSE PLANTS, large Camellias and Azaleas, Shrubs, UTENSILS in TRADE, the remaining HOUSEHOLD FURNITURE, and other items.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wimbledon, S.W.—Preliminary Notice.

GREAT CLEARANCE SALE of unusually well-grown NURSERY STOCK, in consequence of the expiration of the Lease of a portion of the Home Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. D. S. Thomson to SELL by AUCTION, on the Premises, The Nursery, Wimbledon, on MONDAY, October 20, and three following days, about 10 Acres of remarkably well-grown Nursery Stock.

Further particulars of which will be Advertised.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in Flower will take place on TUESDAY, September 30, and they will be glad to receive an intimation from Gentlemen desirous of including Lots on or before the 20th inst.

Sale 217.

HIGHLY IMPORTANT UNRESERVED SALE of the well-known COLLECTION of ESTABLISHED ORCHIDS, formed by Oscar Lamarche, Esq., of Liège, and enjoying a reputation probably unequalled on the Continent.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above Collection by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 7, at half-past 12 o'Clock precisely. Many grand things will be included, amongst others may be mentioned:—

Vanda Lowi, an unique specimen with thirty-two leaves
Dendrobium Shroederi
,, Gimberti
Cypripedium Haynaldianum
,, Stonei
,, Dominianum
Masdevallia troglodytes
Lælia superbiens
Cattleya Gaskelliana, white variety
,, Trianæ alba
Anguloa Ruckeriana
Cœlogyne Massangeana vera
Oncidium tetracopis
Vandas in variety, a grand lot
Lælia Perrini

Catalogues may now be had on application at 67 and 68, Cheapside, E.C.

Valuable Specimen Orchids.

MESSRS. SMITH AND DEWAR beg to intimate that they are honoured with instructions to OFFER by AUCTION, on THURSDAY, September 18 at 12 o'Clock, within 79, George Street, Edinburgh, the whole of the important and valuable

COLLECTION of SPECIMEN ORCHIDS,

from Newbattle Abbey Gardens.

The plants are all in splendid health and condition, and include amongst others several fine specimen Vandas, including the Dalkeith tricolor and Veitch's suavis, and a fine variety of Vanda coerulea; grand specimens of Coelogyne cristata, Dendrobium fimbriatum, oculatum giganteum (magnificent variety), grand specimen, with over forty bulbs and twenty new growths; also Dendrobiums densiflorum and Wardianum, Masdevallia Veitchiana, Lindeni, Harryana, Chimæra (true) Chimæra Backhousiana, Wallisi, bella, &c; also many fine Odontoglossums, Alexandræ, Pescatorei, Andersoniana, Sanderianum, &c.; Cypripediums, Cattleyas, Lælias, &c.

Catalogues now ready and will be forwarded on application to Mr. PRIEST, Gardener, Newbattle Abbey, or to the Auctioneers.

Melbourne Nursery, Anerley.

Lately occupied by the General Horticultural Company.

MESSRS. MEAKIN, MAY AND MAY will SELL or LET by AUCTION, at the Mart, Tokenhouse Yard, E.C., on TUESDAY, September 23, at 2 o'Clock, the above valuable FREEHOLD PROPERTY, covering over 2 Acres, and having Greenhouses and Conservatories (over 20,000 feet of glass), Engine, Furnaces, Manager's House, &c., all in working order. Excellent frontages to main roads.

Particulars, Plans, and Conditions at the Mart, of Messrs. JESSOPP AND SON, Bedford; and of the Auctioneers, 111, Anerley Road, Anerley, S.E.

Eccleston Nursery, Prescot.

IMPORTANT SALE of excellent NURSERY STOCK, HOLLIES, RHODODENDRONS, AUCUBAS, ANDROMEDAS, YEWS, LIME TREES, CAMELLIAS, CONIFERÆ, and other valuable productions, which have been transplanted within three years.

MESSRS. ARTINGSTALL AND HIND are instructed by Mr. John Stead, to SELL by AUCTION, on WEDNESDAY, September 24, at 12 o'Clock prompt, at Eccleston Nursery, Prescot, Lancashire, about 3000 valuable EVERGREENS and SHRUBS.

The whole may be inspected one week prior to Sale, and Catalogues obtained from Mr. STEAD, or now on application to the Auctioneers, 45, Princess Street, Manchester.

Royal Oak Nursery, Goldsworth, Woking.

Close to Goldsworth Old Nursery. 1 mile from Station of London and South-Western Railway.

EXPIRATION OF LEASE.—CLEARANCE SALE.

MR. H. W. COPUS is favoured with instructions from Mr. Newey, who is giving up Business in consequence of Expiration of Lease, to SELL by AUCTION, on WEDNESDAY, October 8, at 12 o'Clock precisely, the whole of the fine grown NURSERY STOCK, comprising 20,000 (6 in. to 2½ ft.) Rhododendrons and Stocks, 2000 Aucuba japonica, 5000 Green and Variegated Holly, 1 to 7 ft.; Perry's Weeping and Golden Holly, 1000 Roses, standard and half-standard, true to name; 5000 Ligustrum ovalifolium, 2 to 4 ft.; Cotoneaster Simonsii, 4000 Spruce Firs, 10 0 0 Common Laurels, 6 in. to 3 ft.; Laurustinus, 10,000 Chestnut, 2 to 5 ft; 4000 Yews, 2 to 6 ft.; fine well furnished Green and Variegated Box, Lawsoniana viridis, 2 to 4 ft., Deutzia gracilis, large quantity of well grown Specimen and Border Plants, Flowering Shrubs, Virginian Creepers, Ivies, Gooseberries, Currants, &c.

Catalogues can be had post-free of the Auctioneer, 16, Friary Street, Guildford, Surrey, or at the Nursery, Woking, Surrey.

Preliminary Announcement.

WHITTINGTON NURSERIES, near LICHFIELD.

MR. GEO. MARSDEN is instructed by Mr. Holmes to SELL by AUCTION, at the above Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, 1884, commencing at 10 o'Clock each day, a magnificent selection from this well-known Nursery, comprising several thousands of Standard APPLES and PEARS, Pyramid PEARS on Quince, LARCH, OAK, SPRUCE FIRS, &c; EVERGREEN and DECIDUOUS SHRUBS, including Purple Beech, Scarlet Oak, Aucuba, Box, Holly, Portugal Laurels, Common Laurels of sorts, Yews, &c.; a choice assortment of CONIFERÆ PLANTS of all sizes; ROSES, Maréchal Niel, Gloire de Dijon, &c., very fine; Seedling and Bedded Plants of TREES and SHRUBS in great variety.

Catalogues will be ready fourteen days prior to the Sale, and may be had on application at the Nurseries; or of the Auctioneer, Wirksworth.

Kent.

FOR DISPOSAL, a thoroughly genuine and very old-established NURSERY and FLORIST'S BUSINESS, part Leasehold and part Freehold, with a good Market Connection. Terms moderate, and can be arranged.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

Scotland.

FOR SALE, a NURSERY and FLORIST'S BUSINESS. The business, successfully carried on for the last thirty years by Mr. Neil Wilson, at The Vineries, about 3 miles from Rothesay, Bute, consisting of 2½ acres of Land, 7-roomed Dwelling House, and about 7000 square feet of Hothouses, in good order, all renewed within the last two years. The stock includes many thousands of Cyclamens, Arums, Pelargoniums, and Hydrangeas; a Camellia-house, 100 feet by 30 feet, and a Maréchal Niel house. Being on high ground, and absolutely free from fogs, this Nursery is particularly suitable for supplying the Glasgow market with flowers and plants in winter. The Feu Duty is £12 10s. 8d. per annum. Mr. Wilson has retired from business.

Apply to JOHN L. WILSON, 96, High Street, Rothesay.

Worthing, Sussex.

TO BE SOLD, several walled-in GARDENS, varying from ¾ Acre to 2 Acres. Well adapted for Greenhouses.

Apply, R. PIPER, Auctioneer, South Street, Worthing.

TO BE LET, on Lease (with Immediate Possession), capital NURSERY GROUND, partly stocked, with 5 large Glasshouses or Forcing Pits, and Heating Apparatus to same, with Large Dwelling-House and suitable Outbuildings, Sheds, &c.; the whole covering about 1 acre, situated within about a mile of three Railway Stations and about 5 miles from London.

For particulars apply to Messrs. LANDER AND BEDELLS, Surveyors, 6, John Street, Bedford Row, W.C.

TO LET, a NURSERY, 4 miles from Covent Garden, containing thirteen modern-built Houses (about 15,000 feet of Glass), well heated; 5 roomed House, 4-stall stable, two Van-houses, water on premises. Well stocked with Palms, Dracænas, Ficus, &c. Stock optional or suitable PARTNER would be accepted.

M. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

J. TYDEMAN, AUCTIONEER, VALUER, and ESTATE AGENT, Waltham Cross, N., is open to receive instructions for HORTICULTURAL SALES and VALUATIONS. Every attention given and moderate charges.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

New Illustrated Catalogue.

JOHN MATTHEWS, Royal Pottery, Weston-super-Mare, having issued a New Illustrated CATALOGUE of Terra Cotta Vases, &c., begs to intimate that all previous ones are withdrawn from this date.—August 25, 1884. Price List of Garden Pots, &c., Illustrated Catalogue, 1s. 6d.

Rhododendrons.

ISAAC DAVIES AND SON in offering the above, beg to state that their stock of the following is finer this year than it has ever been, and they do not remember a season when their Plants were so thickly covered with flower-buds.

RHODODENDRONS, hybrid seedlings, various colours, fine bushes, 3 to 4 feet, 30s. to 40s. per dozen; 2½ to 3 feet, 18s. per dozen, £7 per 100.

" selected hybrid seedlings, with colour labelled on each plant, fine bushes, 2½ to 4 feet, 24s. to 36s. per dozen.

" choice named kinds (including many beautiful varieties of our own raising), fine bushy plants, 1½ to 3½ feet, 30s., 40s., to 60s., per dozen.

* Over 90 in every 100 of the above well set with buds.

RHODODENDRONS, mixed hybrid seedlings, in great variety of colours, and from early and late strains, nice bushy plants, 15 inches high, 50s. per 100.

" seedlings from our choicest and newest kinds, each variety kept separate, and can be supplied in a fair proportion of each, bushy plants, 9 to 12 inches high, 30s. per 100.

Plants suitable for Potting.

RHODODENDRONS, hybrid seedlings, of various colours 1½ to 2 feet, green, bushy plants, all covered with buds 15s. per dozen, £5 per 100.

" PRÆCOX, good bushy plants, covered with buds, 12s. to 18s. per dozen.

AZALEA MOLLIS, seedlings, from three or four of the best varieties, distinct light and dark colours, each kept separate, nice bushes, five to ten buds on each, 9s. per dozen, 50s. per 100.

" PONTICA, bushy plants, well budded, 6s., 9s. to 12s., per dozen.

" DAVIESII, beautiful trusses of white sweet-scented flowers, best of all for forcing, fine plants, well-budded, 24s. to 36s. per dozen.

" AVALANCHE, pure white sweet-scented flowers, very compact and bushy growing plant, nice plants, well-budded, 2s. 6d. each, 24s. per dozen.

ANDROMEDA FLORIBUNDA, nice bushes, a mass of flower-buds, 12s. per dozen.

PERNETTYA SPECIOSA (our own variety), quite hardy, berries pink when ripe, well berried plants, 12s. per dozen.

SKIMMIA JAPONICA, well established (twelve months) in pots, very green, and thickly covered with berries, large and well formed plants, 18s to 24s. per dozen.

Our CATALOGUE of our own Novelties and General Nursery Stock will be ready in the course of a week.

All goods free on rail, but a small charge will be made for package. Cash or reference from unknown correspondents.

Ormskirk, Lancashire.

EVERGREEN HEDGES.

ARBOR VITÆ, American, 2 to 3 feet, 6s. per doz., 30s. per 100; 3 to 4 feet, 8s. per doz., 50s. per 100; 4 to 5 feet, 10s. per doz.

CUPRESSUS LAWSONIANA, 2 to 3 feet 6s. per doz., 40s. per 100; 3 to 4 feet, 10s. per doz., 80s. per 100; 4 to 5 feet, 18s per doz, 120s. per 100.

HOLLIES, Green, 9 to 12 inches, 12s. per 100; 12 to 15 inches, 16s. per 100; 15 to 18 inches, 3s. per doz., 20s. per 100; 1½ to 2 feet, 9s per doz., 50s per 100; 2 to 2½ feet, 12s. per doz, 80s. per 100; 2½ to 3 feet, 21s. per doz; 3 to 4 feet, 30s. per doz.; 4 to 5 feet, 42s. per doz.

THUIA LOBBII, 3 to 4 feet, 15s. per doz., 100s. per 100; 4 to 5 feet, 18s. per doz., 130s. per 100; 5 to 6 feet, 24s. per doz, 160s. per 100.

The above are all well grown, have been recently transplanted, and will remove with safety.

JNO. JEFFERIES AND SONS, Royal Nurseries, Cirencester.

NARCISS and DAFFODILS.—A fine Collection of all the leading sorts, including most of the new and newer varieties.

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

SNOWDROPS. For grand new varieties, a great advance on the old sorts,

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

LILY OF THE VALLEY. Two new varieties, with much larger bells, and more vigorous habit.

See our Bulb CATALOGUE, free on application.

WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

HUGH LOW AND CO. have pleasure in informing their friends and the Public that their stock of WINTER and SPRING FLOWERING PLANTS at Clapton Nursery and Bush Hill Park Nursery, Enfield, is this season unusually extensive and fine in quality, and well worth the notice of intending purchasers, who are very cordially invited to an inspection of the plants. Amongst other things are offered:—

Many thousands of ERICA HYEMALIS, of various sizes.
Many thousands of ERICA MELANTHERA.
Many thousands of ERICA GRACILIS, of various sizes.
Many thousands of ERICA VENTRICOSA COCCINEA MINOR, and other choice varieties of ventricosa
Many thousands of ERICAS of the best varieties, including candidissima, colorans, cerinthoides coronata in flower, caffra, Cavendishi, barbata major, grandinosa, persoluta nana, persoluta alba, assurgens, mammosa, &c.
Many thousands of HARD-WOODED ERICAS, in numerous fine varieties, a large number of which are extra sized.
Many thousands of CYCLAMENS.
Many thousands of GARDENIAS, intermedia and radicans.
Many thousands of GENISTAS.
Many thousands of EPACRIS.
Many thousands of AZALEA INDICA in variety, of various sizes.
Many thousands of AZALEA INDICA, Fielder's White, narcissiflora, and other white-flowering varieties.
Many thousands of CAMELLIAS, with flower-buds, various sizes.
Many thousands of GREVILLEA ROBUSTA.
Many thousands of SOLANUMS, well berried.
Many thousands of BOUVARDIAS, Red, White, and Pink.
Many thousands of LATANIA BORBONICA, various sizes.
Many thousands of PTYCHOSPERMA ALEXANDRÆ.
Many thousands of CORYPHA AUSTRALIS.
Many thousands of DRACÆNAS, in variety.
Many thousands of EUCHARIS CANDIDA and SANDERIANA.
Many thousands of CLIMBERS, Stove and Greenhouse.
Many thousands of TREE CARNATIONS.
Many thousands of ROSES, in pots, Maréchal Niel, Gloire de Dijon, &c.
Many thousands of the best GREENHOUSE PLANTS, such as Aphelexis, Acacias in variety, Acacia armata, Boronias, Chorozemas, Correas, Daphnes, Eriostemons, Genetyllis, Grevilleas in variety, Leschenaultias, Tremandras, Pimeleas, double white Chinese Primulas, &c.
Many thousands of VINES, Fruiting and Planting Canes.
JASMINUM GRANDIFLORUM, large winter flowering CATALONIAN JASMINE, can be offered by the 100 in bud.
GREENHOUSE RHODODENDRONS in variety, including Princess Royal and Princess Alexandra, which can be offered by the 100,
Many thousands of PELARGONIUMS, choice Show, French and Decorative varieties.
Also on hand a very large stock of ORNAMENTAL FOLIAGE and DECORATIVE PLANTS, PALMS, FICUS ELASTICA, ARALIA VEITCHII, and others, CROTONS, PANDANUS, &c. Suitable for Table Decoration.
OTAHEITE ORANGES, in fruit; LAURUSTINUS, on stems, fine white variety, full of buds.
AMPELOPSIS SEMPERVIRENS (Cissus striatus), and AMPELOPSIS VEITCHII, PAMPAS-GRASS in quantity.
FERNS in immense numbers. Many of the leading kinds can be supplied by the hundred, such as Adiantum cuneatum, Adiantum decorum, Adiantum gracillimum, Lomaria gibba.

Clapton Nursery, London, E.

PLANTS for EARLY FORCING.

RHODODENDRONS, grown in the natural loam of our Stoke nurseries, well set with flower-buds, 30s. per dozen.
" large bushes, well set with flower-buds, 42s. and 60s. per dozen.
AZALEAS, Ghent, and other varieties, well set with flower-buds, 18s. and 30s. per dozen.
" large Ponticums, for cut blooms, 30s. per dozen.
" Mollis, well set with flower-buds, 18s. and 30s. per dozen.
" Amœna, fine large clumps, good shape, 18s. and 30s. per dozen.
SPIRÆA JAPONICA, fine clumps, 12s. and 18s. per dozen.

CATALOGUES on application

W. MAULE AND SONS, The Nurseries, Bristol.

ANEMONES.

A. FULGENS, A. FULGENS MULTIPETALA.

Fine bulbs of these varieties. True English-grown.

A French mixed single and double, grand strain; habit vigorous and very brilliant colours, and all kinds of Bulbs.

See our Bulb CATALOGUE, free on application.

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FREESIA REFRACTA ALBA.—Early white blooming. Very sweet scented. One of the most useful Bulbs that can be grown.

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GLADIOLUS COLVILLII ALBA, "THE BRIDE."

30,000 of this useful white variety, useful for forcing or open ground.

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THE NEW YELLOW ROSE, HYBRID PERPETUAL,

GLOIRE LYONAISE.—This extraordinary variety is the finest Rose ever sent out in the Trade. It has been obtained by artificial hybridisation of the Rose Mme. Falcot with Baronne de Rothschild. This variety will be a fine one for Market purposes. The Rose Gloire Lyonaise will be sold by subscription at, per 1 Plant, 15s.; 6 Plants, £4; 1 dozen Plants, £7.

2000 Plants are for disposal, but as already many orders are subscribed, I beg to inform persons who intend to send orders to do so immediately, for the quantity disposable will be soon run out. Direct orders to

L. PAILLET, Horticulturist and Nurseryman, Chatenay, Seine, France—Established 1827.

M. L. PAILLET takes the opportunity of this Advertisement to offer, at a very low price, more than 70,000 ROSES of every description—Standards, Half-standards, low budded on Manetti and Brier roots. Fine splendid lot of ROSES on own roots, 1-yr. and 2-yr. transplanted. More than 20,000 MALMAISON and other good leading sorts are for sale. Also an immense lot of MANETTI STOCKS, LA GRIFFERAYE, and BRIERS, 1-yr. and 2-yr. transplanted, are offered for sale. Price will be sent on application.

CATALOGUE, printed in English, also sent on application

The Only Gold Medal

OF THIS YEAR

HAS BEEN AWARDED

TO

B. S. WILLIAMS

FOR

COLLECTION OF BULBS.

Extract from the "Standard," March 26, 1884:—

"But the great feature of the Show was the display of flowers furnished by Mr. B. S. Williams, *of Upper Holloway, which in six tiers occupied a hundred feet, or half the length of the whole conservatory, and for which he took the* **Society's Gold Medal.** *Here were the gaudy Tulip, spikes almost innumerable of Hyacinths, that loaded the air with their perfume, Azaleas of every hue known to that beautiful family, unpretending but pretty Cyclamens, and, above and beyond all, great clusters of Lily of the Valley, hanging their modest heads, and breathing a delicious fragrance."*

The Bulbs of this season are very fine. Early Orders are respectfully solicited for:—

HYACINTHS, Early Roman.
„ Named, for Pots and Glasses.
„ for Beds and Borders.
TULIPS, Single and Double.
NARCISSUS, Garden.
POLYANTHUS NARCISSUS.
CROCUS.
RANUNCULUS.
ANEMONES, Single and Double.
SNOWDROPS.
IRIS.
FREESIAS.

Please write for GENERAL BULB CATALOGUE, which will be forwarded free on application.

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

BULBOUS FLOWER ROOTS

A VERY EXTENSIVE & VERY SUPERIOR STOCK

EMBRACING

HYACINTHS LILIES CROCUS TULIPS &c

IN MOST CASES

FREE BY POST OR RAIL

PRICE CATALOGUE POST FREE.

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"NEWTON" NURSERIES 108 EASTGATE ST. CHESTER

Laing's Roman Hyacinths.

JOHN LAING & CO.

Our Bulbs are unequalled.

Free by Parcels Post.

12 for 2*s.* 9*d.*; 6 for 1*s.* 6*d.*, fine bulbs of Early White Roman Hyacinths. So chaste and useful for early winter blooming. Catalogue of Dutch Bulbs, Roses, Fruit Trees, &c., also free by post.

Bulb Merchants, Forest Hill, S.E.

DUTCH FLOWER BULBS.

Roman HYACINTHS, SNOWDROPS, and DAFFODILS, at Wholesale Prices.

Imported BULBS exceptionally fine this season.

Catalogue sent gratis on application to

E. J. JARMAN,
The People's Seedsman, Chard, Somerset.



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IMPROVED MUSHROOM SPAWN, per bushel of 1*s.* 4*d.* fourteen cakes 5 0

The best in the market: never fails.

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Upper Holloway, London, N.

PRIZE COB FILBERT TREES.

Gentlemen desirous of obtaining the true

WEBB'S PRIZE COB FILBERT TREES

for Autumn and Winter Planting, should send their Orders as early as convenient to

Mr. COOPER, F.R.H.S.,
CALCOT GARDENS, READING, BERKS,
of whom alone the various sorts can be obtained.

Price LISTS on application.

MESSRS. GREGORY AND EVANS'

GREAT SALE OF ERICAS

will take place on FRIDAY, September 19, when the following first-class goods will be offered by **MESSRS. PROTHEROE & MORRIS:—**

15,000 HYEMALIS.
10,000 GRACILIS.
5,000 PERSOLUTA ALBA.
5,000 MELANTHERA.
5,000 CAVENDISHII.
5,000 VENTRICOSA.
4,000 GENISTA.
3,000 SOLANUM.
2,000 ADIANTUM.
1,000 Double PRIMULA.
2,000 CINERARIAS.

CATALOGUES will shortly be issued.

15,000 HYEMALIS, in 60-pots.
6,000 GRACILIS, in 60-pots.
6,000 VENTRICOSA COCCINEA, in 60-pots.
6,000 VENTRICOSA MAGNIFICA, in 60-pots.
6,000 CAVENDISHII, in 60-pots.
12,000 GENISTA, in 60-pots.

Longlands Nursery, Sidcup.

TREES for AUTUMN PLANTING.

FOX and GAME COVERT PLANTS.
SEEDLING and TRANSPLANTED FOREST TREES.
ORNAMENTAL TREES and SHRUBS.
RHODODENDRONS and Ghent AZALEAS, well set with flower-buds.
APPLE TREES, Standard, 24*s.* per dozen, £7 10*s.* per 100.

Priced LISTS of each on application to
W. MAULE AND SONS, The Nurseries, Bristol.

DAFFODIL, or GARDEN NARCISSUS.—

Our Collection of these charming and fashionable flowers includes all the finest sorts in cultivation at moderate prices.

Awarded a Banksian Medal for our exhibits of Narcissus 1883 and 1884, by the Royal Horticultural Society. "A fine display was made by Messrs Collins & Co with various kinds of *the finest Daffodils.*"—*The Garden*, March 29, 1884.

Special quotations for large quantities to naturalise.

CATALOGUE of above and other Bulbs, with over 100 illustrations,

COLLINS BROS. AND GABRIEL, Bulb Growers and Importers, 39, Waterloo Road, London, S.E.



Lilium Harrisi (the Bermuda Easter Lily).

HOOPER AND CO. have now ready 10,000 fine Bulbs of this magnificent Lily. Destined to eclipse in usefulness and popularity every other Lily. It is by far the best of all Lilies for winter blooming, and is one of the most profitable flowers that can be grown. It may be had in bloom from early in December until April in the ordinary way, and by special culture flowers may be produced all the year round. This is no romance—it is a proven fact. L. Harrisi blooms with a freedom that is perfectly astonishing, and will even produce a second crop of flowers from the same bulb. One bulb produced last year 145 flowers on a single stem; of course this was an exception, but it illustrates its wonderful prolific character. Purest white, splendid form, long-lasting, and easily cultivated, this is indeed a plant to be desired by all.

Prices of Bulbs—Small, 1*s.* each, 10*s.* 6*d.* per dozen; larger, 1*s.* 6*d.* each, 15*r.* per dozen; extra, 2*s.* 6*d.* each, 24*s.* per dozen.

Prices to the Trade on application.

HOOPER AND CO., Covent Garden, London, W.C.

FLOWERING PLANTS

FOR AUTUMN AND WINTER.

STRONG, HEALTHY, AND FULL OF BLOOM.

ACACIAS, 18*s.* to 30*s.* per dozen.
AZALEA INDICA, 18*s.* to 60*s.* per dozen.
BOUVARDIAS, distinct, singles and doubles, 18*s.* per dozen.
CAMELLIAS, 30*s.* to 60*s.* per dozen.
CYCLAMEN PERSICUM (Smith's superb strain), full of buds, 5-inch pots, 18*s.* per dozen.
CYTISUS, 12*s.* to 18*s.* per dozen.
EPACRIS, best sorts, 18*s.* to 30*s.* per dozen.
ERICAS, HYEMALIS, WILMOREANA, CAFFRA, GRACILIS, AUTUMNALIS, &c., 6-inch pots, 18*s.* to 30*s.* per dozen.
GARDENIAS, 18*s.* to 30*s.* per dozen.
LAPAGERIA ALBA, 7*s.* 6*d.* to 42*s.* each.
LAPAGERIA ROSEA, 2*s.* 6*d.* each.
LIBONIA PENRHOSIANA, 12*s.* to 18*s.* per dozen.
PIMELEAS, very fine, 30*s.* per dozen.
PRIMULAS, best doubles, named, 30*s.* to 42*s.* per dozen.
PRIMULAS, double white and purple, 18*s.* per dozen.
TREE CARNATIONS, 5-inch pots, 24*s.* to 30*s.* per dozen.
GREVILLEA ROBUSTA, 5-inch pots, 12*s.* to 18*s.* per dozen.
FERNS, MAIDENHAIR, &c., in great variety; also STOVE and GREENHOUSE PLANTS.

Descriptive List Free.

Selections from above may be made at Dozen Prices. The Plants are remarkably fine and cheap.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.

To Nurserymen or Merchants requiring Roses for Exportation or Home Sales.

THE ADVERTISER begs to offer a choice and unique collection of ROSES, comprising:—
1000 STANDARD Tea-scented, in 30 best varieties.
1000 STANDARD Hybrid Perpetuals, in 30 best varieties.
250 STANDARD Maréchal Niel.
7000 DWARF Hybrid Perpetuals, in 50 choicest varieties.
2000 DWARF Teas and Hybrid Teas, on Seedling Brier.
1500 DWARF Maréchal Niel, on Seedling Brier.

The Plants are all in fine condition, and examples of superior cultivation. A LIST of sorts with Price and Terms for the purchase of the collection on application.

ROSARIAN, 41, Wellington Street, Covent Garden, W.C.

Novelty ! ! !

CUPRESSUS LAWSONIANA ROBUSTA.—Among a great many seedlings of Cupressus Lawsoniana of 1874, I have discovered one, quite distinct from the others by its rapid growth and robust form. There already being so many varieties of Cupressus Lawsoniana, I would not propagate it, only after the severe winters of 1879 and 1880, in which so many varieties of Cupressus were injured by frost, and the said variety did not suffer at all, I decided upon propagating it. Coniferæ culture being one of the chief cultures of my establishment, in which, during many years, the leading varieties of Cupressus are represented, I was able to carefully compare the said variety with the already existing ones, and can now offer it to the Trade as a true acquisition. As the name designates, this Cupressus is robust; in growth it mostly resembles the well known Cupressus Lawsoni erecta viridis (Waterer), whilst its colour is dark green, instead of being light green as in the latter variety.

Novelty ! ! !

THYMUS LANUGINOSUS fol. argenteo var.—In 1878 a beautifully variegated Thymus lanuginosus was found in my nursery. As it suffers neither from frost nor sunshine it can be fully recommended as a most valuable plant for rockwork. For prices apply to

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CARNATIONS AND PICOTEES.—Fine Seedlings from a splendid collection of choice named flowers. Per dozen, 1*s.* 6*d.*; per 100, 10*s.* 6*d.* Extra strong, per dozen, 2*s.* 6*d.*; per 100, 17*s.* 6*d.* Carriage free

DANIELS BROS., Town Close Nurseries, Norwich.

CINERARIAS.—Fine healthy transplanted Seedlings, from a grand strain of large and brilliantly coloured flowers, 1*s.* 6*d.* per dozen, post-free. Extra strong plants, 2*s.* 6*d.* per dozen, post-free. Beautifully illustrated CATALOGUE of Dutch Flower Roots, free on application.

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THE NEW RASPBERRY,

LORD BEACONSFIELD

(A SEEDLING).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883. Strong Canes, 15*s.* per dozen, £5 5*s.* per 100.

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AUTUMN & WINTER FLOWERING AND OTHER PLANTS.

WM. CUTBUSH & SON

(LIMITED),

DRAW THE ATTENTION OF TRADE BUYERS TO THEIR FINE STOCK OF ABOVE.

The following is a portion only of the Stock:—

ACACIA, of sorts.
APHELEXIS, of sorts.
AZALEAS, of sorts.
BOUVARDIAS, of sorts.
CAMELLIAS.
CYCLAMEN.
DRACÆNAS.
ERICA HYEMALIS, exceedingly good.
„ GRACILIS, nearly in bloom.
FICUS ELASTICUS.
PRIMULA, Double.
SOLANUM, very fine.
FERNS, PALMS, &c., in large quantities.

For further particulars see TRADE CATALOGUE, post-free on application.

To our friends who intend to visit us we advise them to come to Highgate first, and thence an easy drive to Finchly and Barnet.

A post card sent the previous day to Highgate would ensure one of the firm being at home.

HIGHGATE NURSERIES, LONDON, N.

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VENCESLAO KRUEPPER,

HORTICULTURIST, SEED GROWER, AND MERCHANT,

SPECIALITY OF

CAULIFLOWER,
VEITCH'S AUTUMN GIANT.

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TRIPOLI ONIONS.
All Varieties.

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Illustrated Priced CATALOGUE of Hyacinths, Tulips, and other Bulbs, containing the best of everything and low in price, may be had Post-free on application to

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PAUL'S NURSERIES,
WALTHAM CROSS.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25s., free on to the following rails:—Great Western, Great Northern, Great Eastern, London and North-Western, and Midland, other lines 30s., in sacks 15; 30 sacks £1 5s.; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

FRIDAY NEXT.—WITHOUT RESERVE.

ESTABLISHED ORCHIDS

INCLUDING

1000 ODONTOGLOSSUM ALEXANDRÆ

(FINEST VARIETIES).

IMPORTANT to the TRADE and OTHER LARGE BUYERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 19, at half-past 12 o'Clock precisely, a large quantity of

ORCHIDS—Established and Semi-established,

SELECTED WITH THE VIEW TO MEET TRADE REQUIREMENTS.

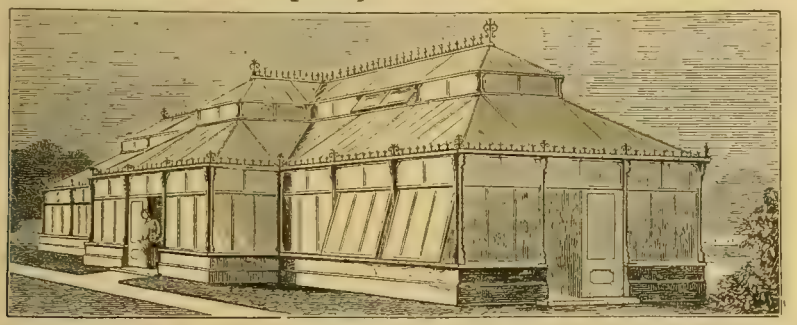
None of the plants have flowered, and varied new and superb varieties may be looked for. Care has been taken to select species most sought after. This is an unusual opportunity for the Trade, as the plants will be sold without reserve.

On view morning of Sale, and Catalogues had.

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BEST DESIGNS. First-quality Materials. CHEAPEST PRICES.

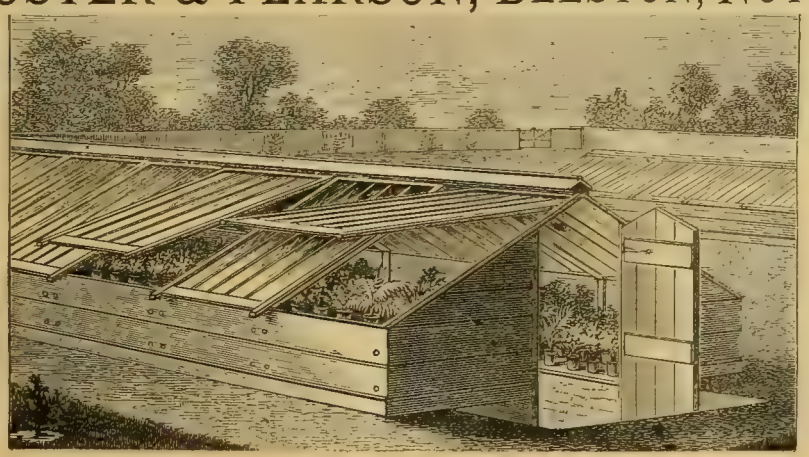


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CATALOGUES and LISTS post-free on application.

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NEW IMPROVED SPAN MOVABLE FRAME.



PRICE LISTS on application. CATALOGUES, 1s. each. Established 1841.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE,

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

ORCHID PEAT, PURE BRACKEN FIBRE (NO DEALERS SUPPLIED).

MR. EPPS informs his Friends that he is now enabled to execute all orders for this article most satisfactorily.
Depôt—Ringwood Station, Hants.

EPPS'S SELECTED PEAT.—Forty sacks, 4 bushels each, 2*s.* 6*d.* per sack; thirty, 2*s* 9*d.*; twenty, 3*s.* 6*d.*; ten, 4*s*; five, 4*s.* 6*d.* Sacks 6*d.* each.
Excellent PEAT for Rhododendrons and common purposes, 56*s.* per truck, 14*s.* per ton. Sample sack 2*s.* 6*d.*
LOAM, SAND, CHARCOAL, SPHAGNUM, &c.
See Special LIST. Also for the Trade.

GARDEN REQUISITES as supplied to the Royal Gardens. Cocoa-Nut Fibre Refuse, 1*s.* 3*d.* per sack; 10 for 12*s.*, 15 for 17*s*, 30 for 30*s.*; all sacks included. Trucks (loose), 33*s.* Selected Brown Fibrous Peat, 5*s.* per sack; 5 for 22*s.* 6*d.* Black Fibrous Peat, 4*s.* 6*d.* per sack; 5 for 20*s.*; sacks 4*d.* each. Coarse Silver Sand, 1*s.* 6*d.* per bushel, 25*s.* per ton. Yellow Fibrous Loam, Leaf-Mould, and Peat-Mould, each at 1*s.* per bushel. Chemical MANURES. Fresh Sphagnum, 6*s.* per sack. Garden Sticks and Labels. Russia Mats, &c. Tobacco Cloth and Paper, best in the market; Cloth, 8*d.* per lb.; Specialité Paper, imported solely by us, 10*d.* per lb., 28 lb. 21*s.* Shading materials of all kinds. Write for Price LIST.—W. HERBERT AND CO., THE HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, LONDON, S.E., *late* 19, New Broad Street, E.C.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag.
SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons.
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COCOA-NUT FIBRE REFUSE, best quality, as supplied to the principal Nurserymen and Nobility, 1*s.* per Bag; 15 Bags, 14*s.*; 30 bags, 25*s.*, sent to all parts; Truckload, 25*s*, free to rail. Best LOAM and PEAT.
A. FOULON, 32, St. Mary Axe, London, E.C.

BEESON'S MANURE

Is the best for all Horticultural Purposes.

In Tins, 1s. and 2s. 6d. Sealed Bags, ½ cwt., 8s.; 1 cwt., 13s.

MANUFACTURED BY

W. H. Beeson, Carbrook Bone Mills, Sheffield.

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Supplies can be obtained through all respectable Seedsmen and Florists in the Kingdom.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

FIR TREE OIL INSECTICIDE (Soluble in Water)

Effectually clears all Insects and Parasites from the Roots or Foliage of Trees and Plants. Kills all Vegetable Grubs, Turnip Fly, &c. Cures Mildew and Blight. Clears Grapes from Mealy Bug, &c., and makes a good Winter Dressing. Of all Seedsmen and Chemists, 1/6, 2/6, 4/6 a bottle. Per gallon 12/6, or less in larger quantities. *A Treatise on "Fir Tree Oil," and its application, sent free on receipt of address, by the Manufacturer*, E. GRIFFITHS HUGHES, MANCHESTER. Wholesale from HOOPER & Co.; CORRY, SOPER, FOWLER and Co; C. E. OSMAN & Co., and from all the London Seed Merchants and Wholesale Patent Medicine Houses.

Weeds Eradicated from Lawns.

WATSON'S LAWN SAND (the original Lawn Sand) destroys both Daisies, Plantains, Ribgrass, &c, and invigorates the Grass. Testimonials and instructions on application. 36*s* per cwt.; 28 lb tins, 10*s.*; 56 lb. kegs, 10*s.* each; sample tins, 5*s.*, 2*s.* 6*d.* and 1*s.*
W. D. BARBOUR, 3, Park Row, Leeds.

CHOICE FLOWERS AT CHRISTMAS

BY PLANTING NOW.

	doz	100
WHITE ROMAN HYACINTHS ..	2s 6d.	18s. 6d.
PAPER-WHITE NARCISSUS ..	1s. 9d.	12s. 0d.
DOUBLE ROMAN NARCISSUS ..	2s. 0d.	14s. 0d.
DUC VAN THOL TULIPS, Single	1s. 0d.	7s. 6d.

CHRISTMAS ROSES, extra strong clumps	each	dozen
	1 6 & 2	15 - & 21 -

Special low quotations for Bulbs for Outdoor Planting and Spring Bedding.

New Illustrated Catalogue post-free.

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SEED MERCHANTS AND NURSERYMEN,
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Laing's Begonia Tubers.

JOHN LAING & CO.

Special Offer of White Begonias.

Seedlings from three best whites, large tubers, per dozen 12s. Producing fine decorative plants. Most useful for cutting. Free by Parcels Post.

Begonia Growers, Forest Hill, S.E.

B U L B S.

Very long experience enables us to offer the BEST QUALITY at a moderate price, as proved by hundreds of testimonials.

ILLUSTRATED LIST, Descriptive, Select, and comprising important NOVELTIES, on application.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.

CLEMATIS JACKMANNI ALBA,

The WHITE Jackman's Clematis,

is now in bloom. All interested in this, the most valuable introduction of modern times, should come and see it. Book to Sunningdale Station, South-Western Railway, and ask for

NOBLE'S NURSERY.

Laing's Begonia Tubers

JOHN LAING & CO.

Collections of 1 dozen, named, our Selection :—
Singles, A 42/- ; B 36/-, C 30/-, D 24/-, E 18/-, F 12/-
Doubles, P 90/-, R 63/-, S 48/-, T 42/-
Collections unnamed, our Selection :—
Singles, G 21/-, H 18/-, J 18/-, K 12/-, L 9/- per doz.
Doubles, W 30/-, X 24/-, Z 18/- per dozen.
Singles, for bedding, M 40/-, N 30/-, O 24/- per 100.
Begonia Growers, Forest Hill, S.E.

FLOWERS AT CHRISTMAS.

BULBS FOR EARLY FORCING

OFFERED BY

HOOPER & CO.,

COVENT GARDEN, LONDON, W.C.

FINEST QUALITY. LOWEST PRICES.

	Per doz.	Per 100
HYACINTHS, White Roman	2 0	15 0
,, White Italian, stronger growth, a week later	2 0	15 0
,, Blue Roman, pretty colour	1 6	10 6
,, Double, pale rose Italian—this forces white : a lovely variety .. .	2 0	15 0
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NARCISSUS, Double Roman, with yellow intermixed	2 0	12 6
,, Paper-White, pure white, lovely ..	1 9	10 6
,, Stella, very large white, with yellow cup, new	3 6	25 0
,, (Corbularia) citrina, pale lemon, a lovely frilled cup	7 0	55 0
JONQUILS, sweet scented, yellow, single	1 0	6 6
,, ,, double	2 0	12 6
TULIPS, Duc van Thol, red and yellow ..	1 0	6 6
,, ,, plain scarlet	1 0	5 6
LILIUM HARRISI, white trumpet, the grandest of all	15 0	100 0
,, CANDIDUM, the White Lily .	3 6	21 0
TUBEROSES, Double White African, splendid	6 0	45 0

All ready for immediate delivery. 5s. worth and upwards Carriage free.

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Carters'

FORCING BULBS.

Plant at once to ensure white flowers at Christmas

CARTERS' White Roman HYACINTHS.
The best in the Market.
12 fine Bulbs, 2s. 6d. ; 24, 5s. ; 50, 9s. 6d. ; 100, 18s. 6d

CARTERS' Paper-White NARCISSUS.—
12 fine Bulbs, 2s. ; 24, 4s. ; 50, 6s. 6d. ; 100, 12s. 6d.

CARTERS' Extra Large SNOWDROPS.—
50 fine bulbs, 2s. ; 100, 3s 6d. ; 500, 16s. ; 1000, 30s.

ALL PARCELS CARRIAGE FREE.

For full particulars see CARTERS' ILLUSTRATED CATALOGUE of BULBS, ROSES, and PLANTS, gratis and post-free.

Seedsmen by Royal Command to H.R.H. the Prince of Wales,

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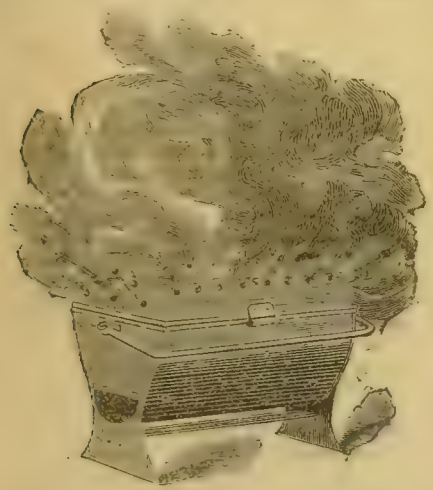
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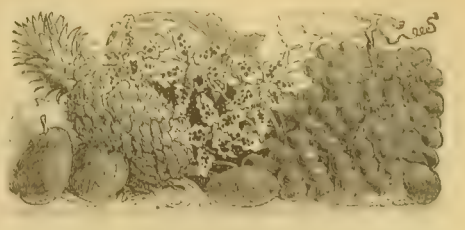
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 13, 1884.

ARUNDEL.

IF we suppose a traveller on his way to Normandy to fall asleep on the way, and to wake suddenly in the neighbourhood of Arundel, he might for the moment think that he had safely encountered the horrors of sea-sickness, and was traversing the fair land of Normandy. The wood-clad heights, the green meadows, the devious stream, the occasional outcrops of glaring chalk, all might assist the illusion—an illusion which the imposing Castle and the very French-looking Cathedral, erected by the piety of the Duke of Norfolk, would very materially strengthen. And yet this fair picture may be seen in our own county of Sussex, within a two hours' ride of the metropolis. The grounds of this noble demesne are marked by swelling downs, verdant undulations, and dense woods. The gardens have long been well known for the skill with which their manager, Mr. Wilson, contrives to satisfy the very large demands made upon him. Flowers also are required in prodigious quantities for church decoration and for domestic purposes. Nor, in such a climate, with plenty of water, with excellent appliances, and with a man of so much experience and skill in command, does the task appear a difficult one. We have no intention of attempting a description of this fine establishment, which, indeed, has already been described in our columns; but in a place like this there is always something of interest to be seen, and changes and alterations are constantly taking place.

The flower garden, of which we give an illustration (fig. 64, p. 337), is enclosed within the flint walls of the Castle, and is overtopped by the ruins of the old Keep. For the most part it is level, but at one end there are a series of terraces which greatly add to the imposing effect of the garden. Its plan and arrangement will be seen from the illustration, at present its tenants consist mainly of herbaceous plants, for "bedding stuff," once held in esteem here, and which was certainly a relief to the stern, grim, architectural features of the place, has given way to herbaceous plants, especially for such as supply flowers for cutting. These in their turn are to give place to a tennis lawn. Whatever fate be in store for this enclosure, let us hope the magnificent standard Portugal Laurels, among the finest that we have seen anywhere, may be spared. An annual trimming serves to keep these giants in condition and to render them excellent substitutes for Orange trees. If it be objected that such trees are formal and artificial, it may be remarked in reply that they are in harmony with the surroundings and serve to form the intermediate link between the rigid formalism of the surrounding buildings, many of which, from the restorations and additions going forward, have a painfully new look, and the freer, looser vegetation of the herbaceous plants and the crumbling Ivy-clad ruins of the Keep. How mild the climate is is shown by the existence against a wall of a tall Myrtle, in full bloom when we saw it, and which was

aised from a spray contained in the bouquet of the then Duchess in 1814. Not far off a standard Eriobotrya (Loquat) affords similar testimony to the climate, which, however, is not hot enough to allow the tree to produce fruit.

Among the many changes and alterations in progress, we may mention the erection of a huge Palm-house. This is an ecclesiastical-looking structure of red brick with massive buttresses, and an appearance as if light must be too much obstructed for plant growing. On entering, however, this impression is dispelled, as there is ample light. Ventilation, too, is well provided for by side-ventilators at the bottom, and a lantern ruuning along the top. Provision for heating is afforded by two flow and return pipes connected to one of Keith's boilers. As the chief object is to grow sub-tropical and cool Palms, Cycads, Tree Ferns, and other ornamental plants for church and house decoration, the provision for heating is ample, and of course the plants will be grown in pots or tubs for convenience of carriage. On the north side are excellent and commodious potting-sheds, and every provision for the designed purpose.

There is no special conservatory at Arundel, but the provision of small span-roofed houses and pits for growing decorative plants, and flowers for cutting, Epiphyllums, Eucharis, Adiantums, Strawberries, Melons, Cucumbers, Tomatos, and the like, is ample. Speaking of Tomatos reminds us of Mr. Wilson's opinion, that for winter work, where a Pine stove is available, Tomato cuttings do better than plants. Most of the pits are heated by a Trentham boiler.

We must pass over the numerous fruit-houses, as the fruit-room afforded at the time of our visit the most conclusive evidence of what had been in the houses. The late vineries, however, were perfect pictures, so full and even was the crop. Some 5000 pots of Dr. Morier Strawberry afforded an excellent prospect for the next forcing season. Mr. Wilson thinks very highly of this variety for early work.

Outdoor fruit was surprisingly abundant—surprising, that is, to one fresh from the Midland Counties. Golden Pippins, Ribstons, Hambleton Deux Ans, and other varieties, were laden with fruit; Peaches on the walls were abundant, and small fruit had been gathered in profusion.

The fruit room before alluded to would delight, not only a gardener, but an antiquary. A large room in a fifteenth century gatehouse of most picturesque appearance forms a fruit room, which fulfils all the requirements of such a place, while the massive carved oaken beams and the mullioned windows are a delight indeed to the visitor. Peaches may be had for money in Covent Garden, but money would not buy this unique apartment.

Mr. Wilson's wasp-trap is one whose efficiency we have witnessed elsewhere. It consists simply of two handlights, one slipped over the other; the lowermost is raised an inch or so from the ground, on which is spread a bait for the wasps. A hole is made at the apex of the pyramid of the lower light, affording a means of entrance to the cavity of the upper one. The incautious wasps, instead of making their escape by the way they came in, fly up through the hole in the top into the upper light, and having, as it seems, not sense enough to retrace their flight, are captured in large quantities.

Some notable trees are to be seen in the grounds, and beneath whose shade a herd (is that the right word?) of ostriches may be observed enjoying their freedom. Happy ostriches!—they need not trouble themselves about the proper spelling of Kœlreuteria paniculata; but, stupid things, we fear they are incapable of appreciating the beautiful foliage of the finest specimen of this tree it has ever been our lot to see; nor of the largest Gymnocladus in the country. Two magnificent specimens of Cupressus macrocarpa, over 50 feet in height, are remarkable for their symmetry. They were planted by Mr. Wilson in 1856. Cedars, Tulip trees, Morinda Firs, Deodars, Corsican Pines—we cannot enumerate them! Two magnificent Wellingtonias, however, demand notice, planted, one in 1858, one in 1859, and with magnificent boles furnished to the base with a thicket of branches and clothed with a dense coat of golden-brown soft bark.

The Queen and the late Prince Consort must be reckoned among the great tree planters of our period. The two trees planted by them here, in 1846, are satisfactory specimens of British Oaks. But, in truth, trees refuse to die here, and no wonder. At any rate Mr. Wilson showed us a fine standard Fig tree, in full leaf, with a crop of fruit upon it, and which was reputed dead for a period of twenty years. It was no such thing, however; after a long repose it resumed work, and, judging from present appearances, it will continue to do so for many a year to come.

Prolonged and repeated visits with systematic note-taking would be required to do justice to Arundel. Perhaps these few desultory memoranda, taken on the occasion of a flying visit, may be as suggestive as a fuller record would be, and then it is so much better to go and see. Let those do so who can—they will not be disappointed.

New Garden Plants.

BRAVOA BULLIANA, *Baker, n. sp.**

THIS is a most distinct and interesting novelty. It is a South American Amaryllid, presumably Mexican, that comes about half-way, in general appearance, between our old friend the Tuberose (Polyanthes tuberosa) and Bravoa geminiflora. It has the leaves and root-stock of the Bravoa, but is totally different in the flowers, which, although just like those of the Bravoa structurally, are much larger in size, with more conspicuous segments, and are dull greenish-purple outside instead of bright scarlet. It seems to bring the three genera, Bravoa, Polyanthes, and Agave, a shade closer to one another, its nearest affinity in the latter being the dwarf species of the subgenus Littæa, especially A. maculata. It has been imported and flowered by Mr. William Bull, who is to be congratulated on the introduction of such a distinct novelty. Another very distinct species of the genus, Bravoa sessiliflora, was gathered lately by Parry and Palmer in Central Mexico, and has been described and figured by Mr. W. B. Hemsley in vol. iii. of the Botany of Salvin and Godman's *Biologia Centrali Americana* (vol. iii., p. 338, tab. 86).

Root-stock an erect ovoid tuber, above 1 inch in diameter, the outer tunics pale brown, firm in texture, cut at the top into a great quantity of long persistent bristly fibres. Leaves produced contemporaneously with the flowers, two from the base of the stem and one from a little above it, lanceolate, bright green, glabrous, coriaceous in texture, acuminate, about half a foot long, 1—1¼ inch broad at the middle, with close transparent veins, and a minutely ciliato-denticulate hyaline edge. Peduncle firm, terete, green, flexuose, 2 to 3 feet long, with only a single small reduced leaf at the middle. Raceme half a foot long, consisting of five or six pairs of curved flowers; pedicels very short, bracts minute, deltoid. Perianth infundibuliform, 1¼ inch long, whitish outside, tinged with greenish-purple, dull yellow inside; tube abruptly curved at the middle, one-sixth of an inch in diameter low down, one-third of an inch at the top, full of watery honey at the base; segments ovate falcate in the expanded flower, one-sixth of an inch long and broad. Stamens inserted below the middle of the perianth-tube, just reaching to the tip of the segments; filaments filiform, anthers linear-oblong, versatile, one-sixth of an inch long. Ovary oblong, not distinctly free at the top. Style just protruded beyond the perianth segments; stigma tricuspidate, with three small ovate segments. *J. G. Baker.*

* *Bravoa Bulliana*, Baker, n. sp.—Acaulis rhizomate erecto tuberoso; tunicis exterioribus scariosis brunneis apice copiose setiferis; foliis basalibus productis paucis synanthiis lanceolatis viridibus semipedalibus coriaceis acuminatis margine denticulatis; pedunculo 2—3 pedali; floribus geminis brevissime pedicellatis laxe racemosis; bracteis minutis deltoideis; perianthio infundibulari albido purpureo-viridi tincto tubo abrupte curvato segmentis brevibus ovatis; staminibus inclusis; stigmate breviter exserto.

ACIPHYLLA SQUARROSA.

THIS extraordinary umbelliferous plant covers large tracts of land in various parts of New Zealand, where its dense tufts of spiny leaves render the country impassable. Sir Joseph Hooker describes it as a most remarkable, tall, unbranched, rigid, spinous herb, 5—7 feet high, with pinnate, jointed leaves, whose long, grassy, rigid, pungent divisions are spread out like a fan and with an oblong terminal raceme of many umbels nestling among rigid recurved spinous involucral leaves. The flowers are unisexual, sometimes monœcious, at other times dicœcious. The plant is very aromatic and full of a gummy, resinous juice, which is attractive to pigs, who grub up the roots for food. The plant is described and figured in Hooker's *Icones Plantarum*, t. 606, and in the *New Zealand Flora* of the same author, vol. i. (1853), p. 87. Another species, A. Colensoi, also grows in the northern and middle islands, both varieties being known to the settlers as Spear-grass or Wild Spaniard. The plant has proved perfectly hardy in this country, as near Edinburgh, where it was first flowered a few years since by the late Mr. Gorrie. Our illustration (fig. 61) was taken from a specimen which flowered during the past summer in the rich garden of E. J. Loder, Esq., of Floore, near Weedon, Northamptonshire, where the winter climate, though severe, is not so much so as to prevent the growth of this extraordinary plant.

ARBORICULTURE IN SCOTLAND.

(*Continued from p.* 296).

WHILST at Fochabers opportunity should be taken to pay a visit to the well managed estate of Cullen. Mr. Michie, who so ably contributes to the Forestry columns of the *Gardeners' Chronicle*, is the forester, and as one would expect, all operations are well carried out, and there is some very fine timber on the estate. Cullen is somewhat difficult of access; there is a coach daily fram Fochabers, but this would entail staying a night at Cullen; it would be more advisable to hire to Cullen and back from Fochabers—a most enjoyable drive. Again leaving Fochabers, in a short time we reach Elgin. A visit should be made to the ruins of the cathedral. From Elgin on to Forres, well known to all foresters as the residence of the late Mr. Grigor, who did such good service to his country in bringing so prominently into notice the good qualities of the true native Highland Pine, as grown from home-saved seeds, condemning most justly the worthless Hagenau variety, which had been sold and planted in large quantities, no doubt causing considerable loss to proprietors on whose estates it was planted. At Forres is one of the first "hydropathic" establishments, surrounded by woods, principally Pine; the climate here is very mild and salubrious. Some 5 or 6 miles away is the estate of Darnaway, well timbered and well managed, and worthy of a visit. Mr. Scott, we believe, is the wood manager. A few miles from Forres, on the road towards Inverness, is Brodie, a small compact estate, with some remarkable trees about it. The rail passes through this property. The next point of interest will be Inverness, the country between Nairn and Inverness being mostly under corn and Turnips. From Inverness, well named the capital of the Highlands, excursions could be made for weeks, there being so many remarkable places—straths, glens, forests, &c.—within reasonable distance. One of the most beautiful spots at Inverness is the cemetery, on a natural mound, a glen being on each side. The Gaelic name for it is "Tom-na-hurich." The view from here is superb. To the north-east is the Moray Firth, to the north the fertile "Black Island," and to the north-west "Beauly," Belladrum, and Beaufort Castle, surrounded with Pine forests; the "Muir of Ord," the Highland mart for cattle and sheep; and in the distance the fine estates of Conon House and Braham Castle. Dingwall is a few miles to the north, and some 5 miles

to the west of Dingwall is "Strathpeffer," the Harrogate of Scotland. Culloden should not be forgotten. Near the gardens at Culloden House is a fine Spanish Chestnut, which occasionally ripens its fruit, and a very fine purple Beech. West of Inverness to Skye and north to Cape Wrath and Wick, the scenery is magnificent, being so varied—loch, moor, mountain, and forest—that one might spend weeks in exploring the straths and glens. Strath Glass and Strath Affaric were described to me by an inhabitant as being particularly beautiful. I do not expect, however, that in the short tour I have endeavoured to describe that time would be found to visit many of these picturesque spots, but advantage should be taken when we have endeavoured to name only those places that can be readily visited, and where hotel accommodation is good and charges reasonable, excepting at Oban.

This place is always overdone during the tourist season, and if the Highland games should be taking place at Inverness, it is useless endeavouring to find accommodation; but the visitor should return to Nairn, or on to Beauly, or even return to Forres, at either place good accommodation can be obtained. Many places of note have been left out, such as Inverary, &c., as being difficult of access; but I feel sure, when a visit has been once made, there will be a wish to return and explore more fully the land of the "loch, mountain, and moor."

Some of the largest and handsomest Scotch Firs (true Highland Pine) are growing on the estate of Fordell, near Inverkeithing, the residence of G. M. Henderson, Esq. The late Mr. Foulis, who was gardener and forester on the estate for many years, a few years since was kind enough to show them to me, and I do not know any in Scotland to equal them, the boles are so straight and of such large size that they must be of great age. A nice day might be spent by leaving Edinburgh by first the coach or by rail to Queensferry, visiting Hopetoun, crossing the Firth to Inverkeithing hiring a machine there, calling on the gardener, at Fordell, and asking permission to see the Pines, then driving on to Aberdour, leaving Donibristle, a seat of the Earl of Moray, now in ruins, on the right, and walking by the Firth to Burntisland, taking the steamer from there to Edinburgh.

There is still another estate in Scotland that should be visited, if possible, and that is Castle Kennedy. What Murthly in the North is for Conifers, Castle Kennedy is in the South. Mr. Fowler has planted here in large groups all the Conifers of note. Araucaria imbricata, Abies Nordmanniana, Abies nobilis, Abies Douglasii, and its variegated form, A. D. Stairii, named in compliment to his employer, the Earl of Stair; Cupressus, Retinosporas, &c., will be found here; there is also at the head of the Black Loch a fine row of Beech, planted by instruction of General Lord Stair somewhere about the date of the battle of Blenheim. There is an interesting story attached to these trees, and which fixes their age to a day, and which Mr. Fowler tells in his quiet homely

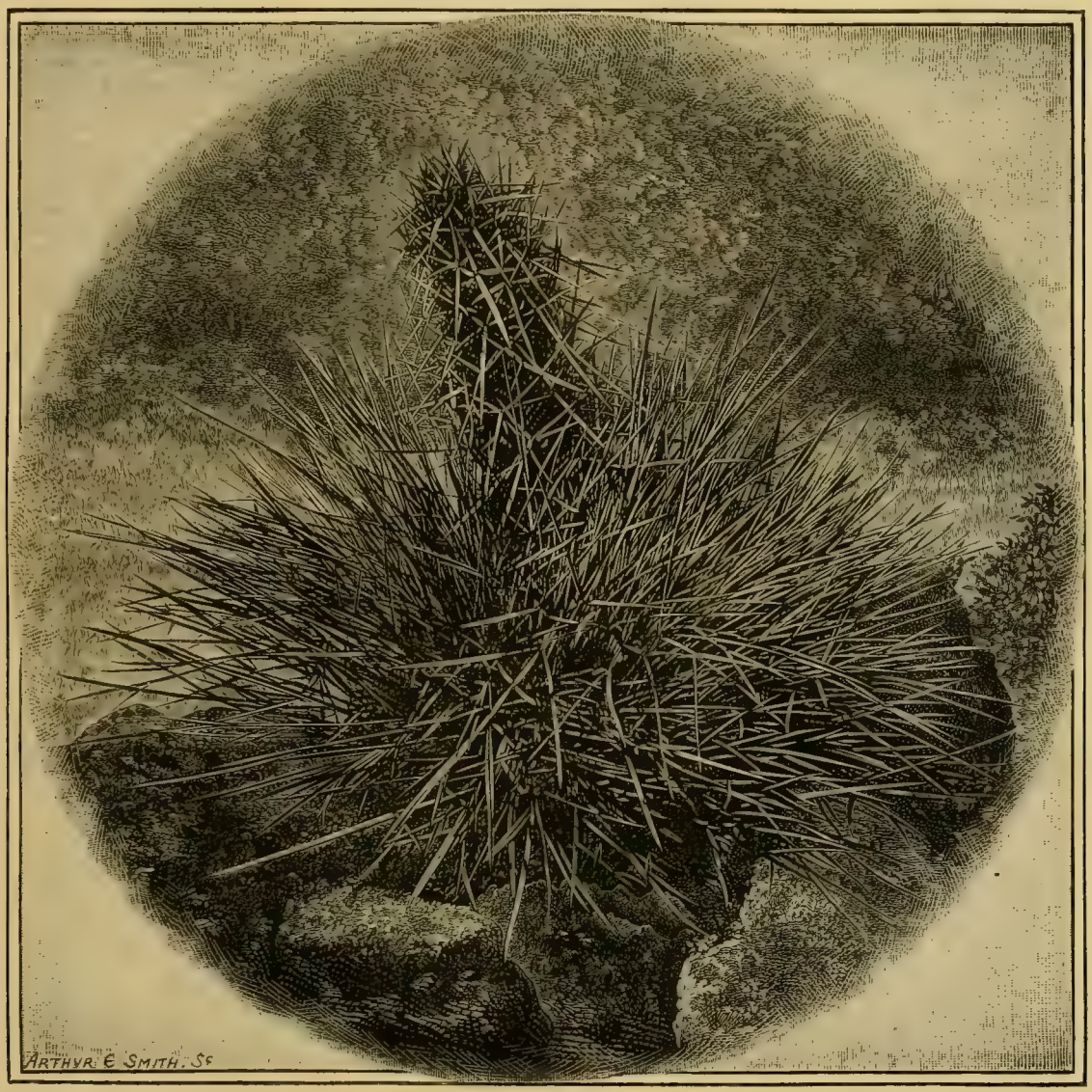


FIG. 61.—ACIPHYLLA SQUARROSA. (SEE P. 328.)

at Inverness to return south by the Caledonian Canal. The scenery is one continual source of pleasure, as you steam down Loch Ness and Loch Lochy to Fort William, where you come into the land of "Lochiel," whose name still stirs the heart of the Highlander. Fort William is also noted for its distillery, where the "dew of Ben Nevis" is manufactured; from thence through Loch Linnhee to Oban. From Oban you have choice of rail, *viâ* Dunblane, to Edinburgh or Glasgow, or by steamer, *viâ* the Crinan Canal, through the Kyles of Bute. The rocks in many places are covered with Hymenophyllum tunbridgense or H. Wilsoni—I am not certain which variety. As you steam up the Firth of Clyde you pass numerous delightful residences and towns, including Rothesay, a now fashionable watering place. On the left are Innellan, Dunoon, and Kirn, also seaside

manner. The Castle Kennedy Grapes are also still as great a treat to see as formerly, when they used to be seen at exhibitions. The route to reach Castle Kennedy from Glasgow is by Ayr, Maybole, &c. Near Maybole is Culzean Castle, the seat of the Marquis of Ailsa, a finely timbered property; and a few miles further south is Kilkerran, the seat of Sir J. Ferguson, Bart., a fine estate, with deer forest, and a glen some 10 miles in length. After Castle Kennedy there is nothing in the South of Scotland nearer than Drumlanrig, a few miles north of Dumfries.

I must now close our descriptive tour, and hope that my somewhat erratic attempt may be of service. *W. H.*

ENVILLE HALL, STOURBRIDGE.

THE fine grounds of this noble demesne are now open twice a week to the public by order, and it need scarcely be stated that they are visited by large numbers from Stourbridge and the surrounding industrial centres. The grounds are now in admirable condition, and as more rain has apparently fallen in this district than in the less favoured South, everything, despite the prevailing drought in the midland districts, looks wonderfully fresh and bright, and testifies to the fostering care and intelligence of Mr. George Green, the head gardener. Something of the old enthusiasm respecting the bedding-out system stirs the beholder as he looks upon the well filled beds, so bright and effective under the brilliant sunlight, and the ribbon borders aglow with lines of pleasant colours. The ribbon border in front of the wall which forms the boundary line close by the cricket ground is composed of a line of yellow Calceolarias at the back, then a line of scarlet, and in front of this a line of white zonal Pelargoniums, then a band of Coleus Verschaffelti, in excellent condition, with a line of the old variegated Pelargonium, Golden Chain forming the front line. This ribbon line is continued round a portion of the flower garden under the belt of shrubbery, in which Hollies and Acer Negundo variegatum play a conspicuous part. Here the front line is Golden Chain, behind it Ageratum Imperial Dwarf, a crimson Nosegay Pelargonium, a white zonal ditto, and then a back line of the old variegated Pelargonium Flower of the Day. The lines of colour are perfect. This long ribbon line appears to be quite in keeping with the place, and it is greatly admired by the many visitors. About the fine stretch of lawn forming the site of the flower garden there are many beds, mainly circular, much raised in the centre, and effectively filled. It is striking masses of colour rather than elaborate artistic arrangements that are sought for, the rich wealth of evergreen and summer foliage around makes some such floral display quite harmonious. There are some charming masses of pale blue-purple, formed of a Verbena raised at Enville, edged with the old tricolor Mrs. Pollock; there is a mass of white zonal Pelargoniums, edged with crimson Tropæolum, also pink zonal, edged with Mrs. Pollock, and the latter edged with blue Lobelia. There are embroidered beds also among them, in which Coleus, Pyrethrum Golden Feather, Alternantheras, and others play an important part. Near to the mansion, railed off from the intrusion of the public, is a smaller flower garden, in which charming beds, arranged after the manner of those at Heckfield, are seen to great advantage.

What noble trees stand up tall and straight against the sky!—lofty Elms, spreading Chestnuts, Planes of great extent, umbrageous Oaks, purple Beech of marvellous size and rich colour; Horse Chestnuts and Limes in groups that appear as if they had been planted centuries ago; Yews of great age; green-leaved Beech of surpassing size and splendour; variegated Hollies, in green and gold, and rare specimens of the Fir tribe. Nature has done wonders for Enville, its undulations are the work of slow but ceaseless change, and the landscape gardener has left subtle touches of artistic beauty to bear testimony to his genius. Look at that fine group of Tulip trees, and near it such a group as one seldom sees of the Venetian Sumach, with its elongated and feathery flower-stalks in large ed panicles, singular in appearance, and very graceful. All the Pine tribe appear in glorious luxuriance, save and except an Araucaria here and there, that has felt the effects of the severe frost in years past. There is a lofty glaucous variety of Cedrus atlantica, of broadly pyramidal habit, very imposing in its rich hue of silver. Cryptomeria japonica is perfectly at home here, and very fine and healthy specimens of it can be seen.

In the large conservatory there is a great collection of plants, and Mr. Green speaks in the highest terms of the value of the tuberous rooted Begonias as invaluable decorative plants in such a building. Here are some of the finest specimens of Indian Azaleas, of pyramidal form, that we have seen for many a day; indeed, Enville abounds with Azaleas, and they are found of great value for cutting purposes. In the plant-houses can be seen a large and varied collection of flowering plants for decorative purposes, Orchids, &c. A hasty look through the Peach-houses, vineries, &c., showed that everything was in good condition, though the labour at the disposal of Mr. Green is inadequate to the requirements of the place.

What a boon these splendid gardens must be to the population dwelling along that broad fringe of the Black Country immediately contiguous to them. On the whole the many visitors behave well: pity it were otherwise, for the indiscretions of visitors have in some instances led to the closing against the public of gardens similar to those at Enville. Let us hope these famed pleasure grounds will long remain open to visitors, to walk in and enjoy the ravishing natural beauty that abounds on every hand in such rich profusion. *R. D.*

BULBS.

(*Concluded from p.* 300)

CORMS.—As usually understood, corms, or "solid bulbs," as they are also called, differ from bulbs in this, that the scales on the outside are dry and few in number, while the base, or lower part of the stem from which they spring, is greatly dilated. The depôt of nutriment in this case is therefore in the stem, not in the scales.

The Crocus and the Gladiolus afford familiar examples of the corm. Their mode of growth is the same as to general principles as that of the bulbs. The Gladiolus, for instance, affords an illustration of a terminal corm; the main stem ends in the inflorescence which, together with the old corm, withers after flowering, leaving a lower bud of axillary origin to carry on the growth in the next season. A Gladiolus corm examined in the spring of the year shows the withered remnants of the old corm, surmounted by the new one, from the base of which proceed the roots. On removing the base of the sheathing leaves small buds may be seen in the axil, which will not flower this season, but in a subsequent one.

In the Crocus the new corms formed in spring are developed from the top of the old corm. They are for a longer time dependent on the old corm than in the case of the Gladiolus, as may be seen by the fact that roots proceed from the base of the new corm in spring, while at the same period, in the case of the Crocus, there are no roots yet produced from the new corm, the withering old corm still retaining its roots. "Every living part of a Crocus," says Mr. Maw, "is annually replaced. The corm tunic is the only permanent record of perennial existence, and even this in its living state lasts but a year." The general mode of growth is thus essentially similar to that already mentioned in the case of the Tulip. Considering, then, the short time that a Crocus has wherein to develope its flowers, its leaves, and its successional corms, the folly of cutting off the leaves prematurely becomes the more apparent.

TUBERS.—For our present purpose we may consider a tuber to be a thickened shoot, without any investing scales, but with one or more "eyes"—that is, buds. In a bulb or a corm the central stem from which the scales and leaves proceed is short and thick; in a tuber it is usually more or less elongated. It is, however, rather in their production at the ends of longish thread-like branches that the difference mainly consists. Tubers are generally grouped by gardeners as forms of roots; but this arrangement by no means pleases the botanist, and is indeed fatal to clearness of conception, while the treatment that is appropriate to a tuber is by no means suitable to a root. The technical difference, not to mention differences of structure and mode of growth, consists in the fact that in a tuber there are eyes or buds, while a true root is destitute of these productions. Nevertheless there are, as has been already mentioned, some awkward intermediate formations, the plague of the botanist, the despair of the devotee of exact science, which will not fit in comfortably with any definition that may be framed; such are the tubers of the Dahlia, of terrestrial Orchids, the thick stem of the Cyclamen, or the pseudobulb of the epiphytal* Orchids, and many others. However different morphologically—that is, structurally—they are but illustrations of Nature's method of compassing the same ends by varied agents. They are very interesting to the morphologist and physiologist, but of little value to the systematic botanist, because they afford little or no indications of real affinity, plants of the most diverse lineage having in this matter similar structure. The most useful course appears to be to allude to such of these formations as are most important to the cultivator, and to do so from his point of view and that of the physiologist. So considered, all these nondescript structures fall very naturally and conveniently under the head of Reserve-organs, taking their place as such by the side of seeds, buds, bulbs, and other organs of storage, and illustrations of intermittent energy or suspended animation.

First and foremost in importance is the Potato, "the noble tuber." Great as is its importance to us, that importance is largely artificial. Of the seven or eight hundred species of Solanum known in a wild state only some half-dozen are known to produce tubers, and only one (S. tuberosum) the Potato *par excellence*, has been brought into cultivation. So far, all the numerous varieties of Potato in cultivation are mere seedling or selected variations from this one species. The point we would here impress is that the formation of tubers so important to us is clearly of vastly less significance to the members of the genus Solanum, in which, indeed, it can only be looked on as exceptional. The object of the cultivator should be directed, not so much to the conditions under which the members of the genus Solanum naturally grow, as to the peculiar conditions which have caused one particular species in an especial manner to develope tubers. It must never be forgotten by the thoughtful cultivator that particular plants—wild plants—do not as a rule grow under the conditions which are the most favourable to them, but where they can hold their own in face of the severe competition to which they are exposed, and in spite of the many adverse conditions by which they are handicapped. This truth was long ago insisted on by Dean Herbert, one of the foremost physiologists and cultivators of this country, and it is a truth that should be full of encouragement to the gardener, who often has it in his power to remove any given plant from the struggle with competitors, and not only to banish adverse conditions, but to place the plant under the most favourable circumstances possible for its development. This is what has been done partially for the Potato; partially, because only with reference to the production of tubers, the tendency to the formation of which has been by the art of man, and the plasticity of the plant, enormously increased. But this development of one organ has been obtained at the expense of some compensatory drawbacks, foremost among which is an enhanced tendency to become diseased, or at any rate a diminished power of resistance when attacked.

The tuber of the Potato is nothing but the thickened end of an underground branch. As it is destined to remain underground no true leaves are formed, and therefore any food it may get is conveyed to it, not formed by or in it. That it is a branch is shown by its origin from the stem or haulm, and this is further shown by the presence of the eyes or buds. The Fir-cone Potato, a variety occasionally met with, resembles a long Fir-cone, or an Asparagus shoot, the nature of which latter is obvious. It is, in fact, a terminal bud, such as before described, but one in which the central portion is enormously thickened, which ceases to grow at the tip (definite), but which is capable of lateral growth by development of shoots from the "eyes," as may be seen when "sets," or so-called "seed-Potatos," commence their growth. Its essentially bud-like character is shown by the occasional formation of small tubers in the axils of the leaves. Any one who will compare a Strawberry "runner" with a Potato will see how close the correspondence really is. From the underground portion of the stem or haulm of the Potato slender branches are thrown out, which terminate in tuberous buds that do not directly develope true leaves, but become separated from the parent plant in course of time, and serve as a means of propagating it. From the aboveground portion of

* Epiphytal, a term applied to plants which grow upon other trees, but which, as they do not penetrate beneath their surface, do not derive any nourishment from them.

the stem of the Strawberry issues a long slender branch, which terminates in a bud, in which true leaves are directly developed, and which becomes in time detached from the parent plant, and serves to propagate it. In all essentials the resemblance is close; the difference is associated with the circumstance that in the one case the growth takes place below-ground, where the leaves could not work if they were produced; in the other the growth is above-ground, and the leaves can effect their purpose so completely that the food stored up in the offset of the Strawberry is actually largely obtained by its own leaves, and not conveyed thither from other sources.

Practical Inferences.—The life history of the Potato, as here sketched in outline, illustrates the propriety of not allowing the tubers to produce roots or to sprout till we are ready to plant, because all such growth must be at the expense of the parent tuber. But if planted before such growth takes place, then as soon as new roots are formed they are at once available to supply the tuber with water, and do not overstrain it in carrying on those wonderful changes which convert a dormant mass of cellular tissue into a focus of movement and chemical and physical change.

So, too, we may see that the practice which some follow of rubbing off the "chits" or shoots that may have been produced before planting is so much waste; they will form again, it is true, but a wanton injury will have been done, and time will have been lost. It is the practice with some when planting to suppress all the eyes but one near one end of the tuber. The reason given for this is that the one left will be able to avail itself of the food provided for the rest. But if a good haulm is to be made—and that, it must be admitted, is the necessary precursor to a good crop—it must be bad practice to suppress the many for the sake of the one—to have one group of leaves and roots only instead of many. But supposing growth goes on uninterruptedly, the roots which emerge from the base of the shoots grow, divide and subdivide, multiply exceedingly, according to the nature and quality of the soil.

The value of the earthing-up process usually adopted consists in this: the earth drawn up round the collar increases the food supplying surface, gives the roots more range, secures a greater supply of air to the roots through the loose soil, and, provided it be not raised too high, is of unmixed benefit to the plant. Moreover, under certain circumstances, it may prevent the spores of the Potato-fungus being washed down into the soil—an argument used by Mr. Jensen in support of his practice of "high moulding." The first object of the cultivator is to encourage free, rapid, and healthy growth of root and haulm. The reason is obvious; root and leaf are necessary to the growth of the plant, and essential to the formation of the tubers. Once provided with a good supply by means of the true roots and leaves, the plant sets itself to work to provide for the future. It may do this in two ways—by the formation of flowers, fruit, and seed, or by the production of tubers. We may here leave seed production out of our calculations, because in most cases it is the tubers we want, not the seeds, save in exceptional cases. At the same time that the roots below-ground and the haulm above-ground are doing their work, collecting and preparing the food, the tubers are gradually developing below-ground on the subterranean portions of the stem.

In its native country the Potato is exposed, after the growing season, to a period of drought, and all above-ground vegetation dries up where with us it rots. In either case the destruction of the leafage is complete, and were it not for the tubers safely ensconced below-ground, the chance of perpetuating the plant would be small. True it might be propagated by seed, but only a small proportion of seed is formed; that is subject to depredations from birds, and liable to other accidents; and, moreover, reproduction by its means is necessarily a slower process than that by the tubers buried safely beneath the ground, out of the reach of hungry animals or birds, and placed under more equable climatic conditions than they would be above-ground, where cold nights, and even frosts, succeed to torrid days. The question obviously arises whether in this country autumn planting might not be more beneficial than that in spring. But it must be remembered that the Potato in our fields and gardens is under very different conditions to what it is in the wild state. Our cold wet soils are not at all well adapted to keep such succulent masses; and, again, our spring frosts play havoc enough as it is with the young shoots, and would do still more in the case of autumn-planted tubers, unless protected. *Cassell's "Popular Gardening."*

HORTICULTURAL NOTES IN RUSSIA.

(*Continued from p.* 301.)

Moscow.—A note on the Botanic Garden has already appeared, and I have to add a few remarks upon other horticultural features of the city. In one of the shops were several attractive pots for sale of Muscari ramosum var. monstrosum, known sometimes as the "Feather Hyacinth." It had a novel appearance for greenhouse or room decoration, and seems fit to rank among the best of the hardy plants used for the purpose. Opposite the famous restaurant known as the Hermitage is a kind of open-air bazaar for the sale of plants. There are also shops and greenhouses, but the greater number of the plants for sale are hardy trees and herbaceous plants. An astonishing number of them are planted in baskets ready for removal. Such a thing as Levisticum officinale one would not expect to find, but there were many of it. More easy it was to understand the tasts for Bryonia dioica, our common Bryony, which forms such handsome wreaths and pretty foliage. Dielytra spectabilis was one of the most beautiful of the plants growing in these baskets. The trees grown, or rather planted in them, were chiefly Poplars, which about Moscow are exceedingly common. They are used for avenues and in every possible way. Sometimes they are met with cut into shape as Box used to be with us, and often they are made to form standards. In the Petrowsky Academy of Horticulture no less than thirty-two kinds are cultivated.

We were interested to know the various kinds, but from the number of them, and from the very early stage of growth it would be hazardous to mention names, especially as many trees have not quite the aspect they have in our climate. This difference was shown conspicuously by the Lime, which never seemed to possess the graceful appearance we are familiar with; it was more dense and thickset with stiff twigs, apparently stunted, so that the bark of comparatively small trees was quite rugged. The look of the tree was sometimes so different that one naturally turned to the buds to be quite sure of its identity. Among cut flowers we found little to remark; the Rose evidently holds, as rightly it should, the first place, and one immense bouquet of pale buds was peculiarly arranged with the sprigs of Euonymus radicans variegata. The effect was novel, but not altogethers atisfactory to our taste.

Near Moscow we visited the Petrowsky Park, which enjoys a fine elevated situation and is famed for its fine trees. It is of immense size, and in some parts is remarkably picturesque from the numerous country houses built of round timber in very ornamental style, and often decorated with a good deal of colour, the effect of which is all the better, perhaps, from the surrounding forest of foliage in which these houses appeared to be buried. The Birch is, perhaps, the commonest tree in Russia, but we saw it nowhere else in the large groves which are formed of it here, and though we could well admire its graceful habit and foliage, we were most struck by the effect of the forest of white tree trunks below through which the eye could not reach, and our impression of this characteristic scene is perhaps stronger than of any other of similar nature. The Larches attracted our attention from their size and fine development, and there were some avenues of this tree which seemed to point it out as capable of very fine effect for this purpose. The Spruce Fir was also fine in this park. Ægopodium Podagraria, the Goat-weed, was common here, as it is almost everywhere. Pile-wort was also very common, forming splendid sheets of golden colour. A form of Ranunculus auricomus, with lower leaves not lobed or incised, was extremely showy in the grass, extending here and there into masses. This was the most ornamental of the wild plants we saw. In this park is situated the Academy of Forestry, Gardening and Farming, which was the chief object of our visit. In passing through there is not much that strikes the visitor as being above and beyond what he has seen before, but, no doubt, it would be of greater interest could an extended visit be made, to observe the working of the Academy—how it endeavours to attain the objects it has in view. We should observe that this establishment was instituted at the time the serfs were freed, in order to spread over the land, by its students, that knowledge which was to be of infinite use to them in their new condition. The students here are taken from parishes whence they are recommended, and from what we were told they have free instruction, or pay a premium, according to certain circumstances. The results of teaching cannot be considered quite satisfactory, if, as I was told, the students are better up in theory than practice, and that they are not cared for by employers to do practical work. It must be said that many things combine to make the scientific teaching of horticulture a matter of no small difficulty, and the only thing that can be done in the present day, probably, is to supplement really good practice by scientific lectures, as now, and for some time past, carried on at Kew.

Cratægus sanguinea, generally in Russia, as far as it was possible to learn, takes the place of the common Quick for hedges, which though hardy does not succeed well, but here another species, C. coccinea, is said to answer still better. Our attention was drawn to C. amurensis, introduced by Dr. Regel, which makes a fine tree from its large and luxuriant foliage and black fruit. One of the trees used for hedges is Caragana arborescens, but its habit is apparently too loose to be satisfactory, though we often saw hedges of it in St. Petersburg as well as in Moscow. A hedge of Spruce Fir we had not seen before; it was clipped as any other hedge, and apparently formed an efficient screen and a good fence. In the houses were two plants quite new to us, the one called Systemon Fischeri, of which nothing is known in this country, unless possibly under some other name; and Cinchona speciosa, evidently not a true Cinchona, but very ornamental, with fine broad leaves. *R. Irwin Lynch.*

Florists' Flowers.

The Amaryllis.—The resting period has now arrived, and the plants must have no more water, with the exception of a few that may have made late growths. These may be watered a little longer, until the growths are completed. The small offsets potted in the spring have by this time made nice bulbs, and these do not ripen so early as those that have reached the flowering stage. We repot the whole collection in January, but I like to have the compost ready three or four months before it is required. It can be laid up in a corner of some open shed or outhouse, and its constituent parts become incorporated together before it is required. It may be that I am inclined to attach undue importance to the mixing of composts so long before they are required, but plants always seem to do better when the compost is prepared some time before it is wanted. We use for the Amaryllis about three parts loam to one of good turfy peat, one of leaf-mould, one of decayed manure, and some sharp sand. Those who have paid very high prices for their bulbs will not think it too much trouble to grow them so that the best results may be obtained. During the resting period the bulbs should be kept in the pots in which they were grown, and as cool and dry as possible. A greenhouse or vinery at rest are the best places for them, unless they are kept in a house which has been entirely set apart for their culture.

The Azalea.—This is also the resting period of this useful greenhouse plant. At p. 828 of the last volume instructions were given for pushing the plants on in heat, until the buds were well set. The plants have arrived at that stage now, and if they were grown in a house by themselves it is easy enough to give them the treatment they require. The temperature should gradually be reduced by admitting air more freely, until the ventilators are left quite open night and day. The plants should be placed out-of-doors until the cold weather and late autumn rains set in. Specimen Azaleas are much benefited by being placed out-of-doors for about six weeks in the autumn after the buds are well set. Cuttings that were put in during the month of July may now be potted-off singly in small pots. They will become well established before the winter. Good established plants can be obtained so cheaply that it is not worth while to propagate plants, but some amateurs amuse themselves by doing so. In warm weather the leaves may be syringed daily to keep them free from thrips and red-spider. Some varieties produce too many flower-buds, these must be thinned out to give those that remain a better chance to produce well developed flowers. Azaleas with their flowering growths tied down

closely, and with the flower-buds not thinned out, will produce the flowers huddled together so closely, crushing each other so out of form, that the plants are offensive rather than objects of beauty to delight the eye as they ought to do.

PRIMULAS.—The single and double forms are alike the most useful of plants for furnishing the conservatory during the winter and spring months. The best single varieties, as well as the double forms, are propagated by cuttings. These may be put in at any time during the summer. The plants from which the cuttings are to be taken should be placed in a house near the glass, and be kept rather dry at the roots for a few weeks before taking the cuttings off. If this is done they are not at all liable to damp off; but they should be planted separately in small pots, using fine sandy soil rather moist; and if they are placed in a close hand-glass they will not require any water for two or three days. Watering them as soon as they are put in and giving them too much after causes many of them to rot; indeed, it requires some management to prevent many of them from rotting off during the winter; a damp cold atmosphere is bad for them; they do best in a warm airy greenhouse, damp being kept out by using the heating apparatus. These plants are frequently over-potted, and a greater mistake it is not possible to make. They will not produce larger or better plants in an 8-inch pot than they will in a 6-inch one. The single and double Primulas exhibited by Messrs. Cannell, of Swanley, in London, during the previous two winters were grown in deep 4½ or 5-inch pots, and better plants could not be desired. The flowers were numerous, large, and of splendid quality. Such examples as those are grown in houses where they can have exactly the treatment they require, but they will do in any house, if they are placed near the glass, and not allowed to suffer from damp or cold. We are now potting the earliest into their flowering pots, the later plants being potted into small sized pots to be grown on to succeed them. The glass lights should be pulled off whenever the weather is fine.

FUCHSIAS.—This useful old plant is not excelled for giving masses of flowers during the late summer and autumn months, and is as well adapted for large conservatories as it is for small greenhouses. Small plants allowed to flower in 5 or 6-inch pots are exceedingly useful; we seldom use sticks for them; they are allowed to grow in their own free way, with shoots hanging over the sides of the pots, bent with the weight of the clusters of white and scarlet drops. They continue to flower a long time, if the seed-pods are removed as fast as they are formed. They are not much troubled with insect pests, but red-spider attacks the leaves, and does considerable damage to them. It is not easy to destroy it when the plants are in flower, but they may be kept off by syringing the leaves and keeping the plants in a healthy growing condition in the early stages of their growth. *J. Douglas, Great Gearies, Ilford.*

Orchid Notes and Gleanings.

VANDA TRICOLOR AND V. SUAVIS.—The splendid houseful of all the best known varieties of these at Mr. B. S. Williams' nurseries, Upper Holloway, goes far to prove that these plants thrive best when grown moderately cool and with shade. The home-grown plants which have just produced such a great display of bloom are very dark green in colour, and the foliage is hard and fleshy, but here and there the eye lights on a yellow-looking specimen, which is a newly acquired plant in every case. If fairly healthy and unspotted, the treatment adopted will bring back to its proper dark green colour even the yellowest and most unsightly subjects, so that the possessors of such plants need not despair of bringing theirs back to health if they imitate his treatment. *J. O. B.*

ODONTOGLOSSUM PESCATOREI.—Simple as the matter might seem to an expert, we often have flowers of Odontoglossums submitted to us to determine whether they are those of O. Alexandræ (*i.e.*, crispum) or of O. Pescatorei; we therefore take the opportunity of giving an illustration (fig. 62) of the typical O. Pescatorei, by which it will be seen that the peculiar form of the lip, which the species rather closely retains throughout all its varieties, affords a means of clearly distinguishing it from the irregularly-shaped, crimped, and fringed lip of O. Alexandræ, and thus furnishes a good general test by which to distinguish the one from the other. O. Pescatorei, as a rule, has flowers rather smaller than those of the ordinary O. crispum, and is also much more branching in its flower-spikes than those of that species. A stout well-flowered plant of it, such as we often see, with gracefully branched spike bearing from 100 to 150 of its snow-white flowers, brightly marked in their centres with violet and orange, is a very lovely and attractive object, and one which lasts a very long time to reward the grower for his care. O. Pescatorei has not yet got to the height of its fame, although it was discovered by Funck and Schlim in Pamplona and Ocaña, at a high altitude, in the year 1847, and was flowered by Linden and others in 1851, and although it has ever since been well represented in our collections for many years, nothing like a marked variation was seen in the flowers of the different specimens, a few spots more or less on the labellum, or a difference in the arrangement of those marks, constituted the chief difference; and, notwithstanding that the plant was always beautiful when in flower to a casual observer the flowers were all much alike. However, in 1882, with one gigantic stride from the ordinary form to that which every one at present regards as the grandest variety which will ever be imported, Messrs. James Veitch & Son, of Chelsea,

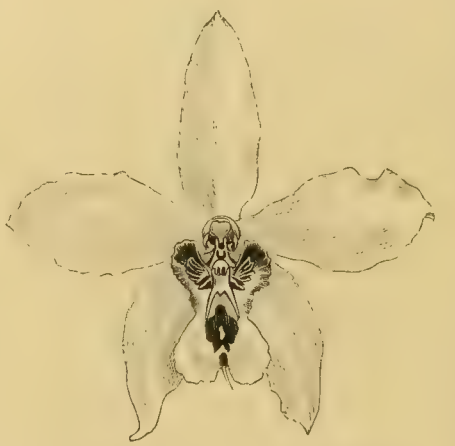


FIG. 62.—TYPICAL ODONTOGLOSSUM PESCATOREI.

made a great break with their O. P. Veitchianum—a lovely variety, with flowers of the most perfect form, the sepals and petals being heavily blotched, even to the tips. In 1883 several finely marked varieties bloomed with Messrs. F. Sander & Co., of St. Alban's, out of their immense importation, and the best of them were secured by Messrs. James Veitch & Son at Messrs. Protheroe & Morris' auction rooms, Cheapside, for 70 guineas. It was of the O. P. Veitchianum class, but differed from it in having purple bands and blotches not reaching quite so far up the petals. The variety was afterwards named by Prof. Reichenbach O. P. Schröderianum, in honour of Baron Schröder, of The Dell, Staines, into whose magnificent collection both these beauties have passed. O. Pescatorei, however, so far as we have seen it, does not seem anything like so variable as O. Alexandræ, although the importations often give forms the first flowering of which presents very large flowers. This is from two causes: the first flower-spikes are generally unbranched, and the flowers are larger in consequence, bnt on becoming branched they get back to the ordinary size. The second cause is, that freshly imported pieces often send up an abnormal growth, half bulb, and finishing up at top with a short flower-spike, the flowers on which generally get to an unusual size on account of their getting, as it were, the strength of a bulb. Often have buyers been deceived in buying such plants, and finding that when they flower in the ordinary way they are only ordinary varieties, or that the plants died, the abnormal flower-spikes being their last efforts. Unfortunately for the easy identification of O. Pescatorei, a few years ago Mr. Lehmann discovered and sent over a lot of what was called O. Alexandræ Lehmanni, a variety which in all its characteristics seems exactly intermediate between O. Pescatorei and O. Alexandræ. It is a lovely and a variable variety, not yet generally known, and as it is distinct enough to be easily recognised we must welcome it, and forgive its encroachment on the other kinds. O. Pescatorei is a strictly cold-house, moisture, and shade-loving Orchid, and one of the most thrifty and free-flowering when grown in a cool pure atmosphere.

BARKERIA SPECTABILIS, B. CYCLOTELLA, &C.—A very successful and simple method of growing these Barkerias is adopted at Mr. B. S. Williams' nurseries, Upper Holloway, where there is a very fine healthy stock of them. They are grown in shallow pans, and suspended in a cold, airy, sunny house similar to that in which New Holland plants are grown. The plants are kept always moist at the roots, and the sturdy reddish-green foliage with which they are plentifully covered tells plainly that they are safe in their cool quarters. Mr. Williams intends to keep them at a very low temperature all the winter, the air in the house being kept rather dry. *J. O. B.*

COOL-HOUSE ONCIDIA.—I am pleased to see Mr. J. O'Brien advocating cool-house treatment for so many of these, so often grown too hot; but I may say as to Oncidium incurvum that my experience of this plant has been as follows:—I had three fine plants carrying annually spikes of 150 blooms each, as grown in the Cattleya-house. Being rather full there, they went into the cool-house, and while there they hardly grew at all during this lovely summer, when even a cool-house was warm. When I made lately more room for Cattleyas the three Oncidia were returned to their old quarters. The change in the growths is wonderful in only a month. I cannot judge accurately the number of blooms they would have borne in the cool-house, for unfortunately the spikes were eaten off at once by a slug; but they were weaker than those produced in the Cattleya-house. I do not lay this down as a law, for perhaps my plants came from a low elevation as compared to some, but I would say if they do well now in any house, leave them there till they show evidence of declining. *De B. Crawshay.*

A NATIVE GLADIOLUS.

FEW people who witness the magnificent display of Gladioli of Messrs. Kelway and others at our flower-shows at this season, and which are derivatives rom various South African species, are aware that Great Britain may boast of one native species closely allied to the one not uncommon in cultivated fields in Italy and France. Gladiolus illyricus, or, as some consider it, G. communis var. illyricus, was discovered some years since in the New Forest. Messrs. Dyer and Trimen, in the *Journal of Botany* for 1864, p. 280, tell us that it affects chiefly broad green open tracts in the Forest, sometimes occurring in the midst of the Bracken (Pteris), and more rarely amidst Fir plantations, where the Gladiolus attains a height of upwards of a yard, with as many as ten flowers on a spike. According to the authorities above mentioned, it prefers dry open unsheltered spots on a sandy soil to sylvan situations, and it probably increases freely by offsets, as a large number of small corms are concealed under the meshes of the fibrous covering of the corm at its base. It is to be hoped, therefore, that this interesting plant may not be exterminated, though some of our friends who have visited the locality have not been so fortunate as Messrs. Dyer and Trimen. (See fig. 63.)

EDGE HALL.

UNTIL I found myself at Manchester I was not so much alive to the contiguity of Lancashire and Cheshire as I ought to have been. A visit to Mr. Wolley Dod, according to his kind invitation, became inevitable when such a northern latitude had been reached. It took only a few hours to get from Didsbury to Edge Hall; the weather was unexceptionable, and the fine old family mansion, which was built, I believe, in the reign of Charles I., looked as beautiful as ever, and appeared to the greatest advantage. Its Ivy-clad walls, old-fashioned windows and venerable appearance altogether are excessively pleasing, and the background of Welsh mountains gives a charm to the landscape which cannot be exaggerated. Mr. Wolley Dod, beyond all doubt, lives in the depths of the country. Country sights and country sounds meet the visitor at every turn, and there are no tall factory chimneys to be an eyesore to him, and what he might,

perhaps, consider to be worse, there are no chemical-laden blasts to pour ruin over his plants. But he is not exempted from the common lot of man for all that, and he has his sorrows to bear. There is a lack of ozone in the atmosphere which lessens the colour of his flowers, the clouds hang about him too much, and shut out the benignant influences of the sun, the soil is too retentive of moisture. Such are his plaints, and no doubt there is a great deal of truth in them. A heaven-born gardener has a reason for believing that his lines have fallen in rather hard places when no Iris will live with him on any terms whatever—when few Oxalises will keep up an acquaintance with him for more than for a very short time—when bulbs eschew him as a rule—when in winter-time he loses many of his greatest favourites as a matter of course. All this, it must be acknowledged, is very sad indeed, and if Mr. Dod's surroundings strike one as paradisiacal at first it is unfortunately too true that the paradise has its drawbacks if the cultivation of plants is the standpoint from which it is to be regarded. But considerations of this sort only increase the wonderment which his garden creates. Beyond a doubt it has the most floriferous appearance of any garden I know, and this is produced by subjects which will bear looking into and require individual care. I have now gardens in my mind's eye which are not one whit better—if they are so good—as some Turkey carpets I have seen; they oppress you with a tremendous blaze of colour, the whole thing is done for effect. There is nothing of this at Edge Hall at all, the plants are multitudinous and of different sizes and sorts; they are not turned out and dealt with *en masse*, but each one has been separately thought about in its turn and is provided with the accommodation which is judged to be best. It is this which gives an interest which never flags to the place. There is an outlook of blossom which invites you to inspect it and to discriminate carefully between one plant and another. Blossom is everywhere—it is on the right hand and on the left, in front of the house and at its back. There are large beds on the lawn, which seem crammed full with flowers, and rockeries are so running over with them that not a single pocket is bare. As you pass from one part of the garden to another you have to surmount a raised bank with stepping-stones in it from the top to the bottom, where alpines grow everywhere. Lilies wave grandly on a long level which suits them exactly, and herbaceous borders abound all over the place, where not an inch has been wasted. There is a long drive on one side, which forms an approach to the house; and of course there is a long row of tall growing things to set it off and enliven it. Even the kitchen garden is largely invaded, and behind the kitchen garden a great inroad is threatened. I would not give much for the fields themselves in the course of two or three years. I believe they will all be given up to the production of flowers. If Mr. Wolley Dod had a kingdom to rule over, I am sure he would fill it with plants in a very short space of time. Whenever I pay him a visit a strange thought takes possession of my mind, and for which perhaps he will not thank me when he sees it in print. I cannot help wishing that he were at the head of some large nursery establishment, and that he wanted a foreman. I am sure that if he were engaged in a business of this sort it would form an epoch in gardening. That insight into a flower which he possesses,—that discrimination of its chief characteristics—that love of collecting—that wonderful skill in propagating anything which will consent to be propagated at all, would soon make themselves felt; and then his correct knowledge of Latin would give quite a flavour to catalogues, which at present they lack. There would never be a neuter termination in the place of a feminine one, or *vice versâ*. There would not be the slightest necessity for putting "true" after his plants, which always seems to me the greatest affront which nurserymen can offer to themselves, because it says by implication that the rest may be untrue; and beyond everything else, if Mr. Wolley Dod's present principles were adhered to, no plants would ever be sent out by him that were not fully established, and pots would never be used of which the diameter only equals that of a halfpenny. But we must do without this, I fear, and be thankful for the labour of love which so unremittingly goes on at Edge Hall, and for all its numerous gifts, and the lessons which are scattered about broadcast. A long day spent with Mr. Wolley Dod is a day of the greatest enjoyment, and it is also one of drinking in instruction at every turn. There are constant surprises, and a notebook gets crammed full of this thing and of that which must on no account be forgotten. One of the noticeable things in his garden is the great size of his plants. They certainly grow to an astonishing height, and in some cases almost lose the appearance which elsewhere they possess. But this cuts two ways—it may be either for good or for harm. I never saw such magnificent specimens of Lilium californicum and L. pardalinum as I found at Edge Hall, and Lilium giganteum is here true to name beyond all doubt; so also Lilium Szovitzianum has a beautiful head, and one stands still to admire it, so grand are the proportions to which it attains. But there is a reverse side to the picture as well. I noticed that most atrocious of all my garden enemies—the most ineradicable thing with which I am acquainted at all—I refer to Hesperocordum lacteum—growing here in a manner which would fill me with dismay. In the South every little nodule of its



Fig. 63.—Our native gladiolus. (see p. 332.)

long fascicled roots will live, so that it never can be got rid of, and it will soon take possession of any border in which it may chance to be placed, but it has the merit of keeping within bounds in point of size. I cannot tell what I should do if it increased in magnitude with me as it does with Mr. Wolley Dod, and also in quantity.

Mr. Dod says that in the course of the year he has three great seasons of delight. The first is when the Daffodils blow—

> "That come before the swallow dares, and take
> The winds of March with beauty;"

the second is about the middle of June, when his alpineries are at their best; the third, which may be called a reign of Composites with him, was at the time of my visit. The first I must leave to imagination, for I have never seen it; but if countless labels go for anything, and beds of Narcissi put here and there wherever space can be found for them, have any tale to tell, it is certain that the glories of March and April must be fully illustrated in this garden, and one of the most in fashion of all flowers just now is amply attended to. Mr. Wolley Dod has had somewhat to do with bringing the large Welsh Daffodil "Sir Watkin" into notice; it will no doubt be very fine with him next spring. I was only sorry to find that such undeniable beauties as N. triandrus, N. juncifolius, and others of great merit from Spain will not put up with his climate. The alpine season, though, perhaps, past its zenith, was far from being over when I went to Cheshire. The most interesting plants nestled in little pockets which had been carefully made for them. That alpine of alpines—I mean Phyteuma comosum—had just done exceedingly well; Haberlea rhodopensis was completely established; Campanula Waldsteiniana attracted me at once, Onosma taurica was very prettily in bloom, Androsace lanuginosa is very well grown indeed; Cyananthus lobatus is more happy, I think, at Edge Hall than anywhere else; Epilobium obcordatum is a delightful little plant, and seemed to be strong; Sedum pulchellum and S. Beyrichianum quite deserve a passing word, Dianthus alpinus and D. neglectus were shining like jewels on the rocks, and so were a host of other things besides these, too numerous for mention. Some few things I missed which cannot stand long persistent rain, but one had to think about them so as to call them to mind, and there was no sense of vacancy at all. *A Wanderer.*

(*To be continued.*)

THE PROPAGATOR.

THE PROPAGATION OF HARDY PLANTS.—*Eulalia japonica.*—These cuttings should be made of the medium growths of the plant, and the wood should be quite ripe; each cutting to be about 3 inches long and cut off with a sharp knife. Dibble into the case or frame, and press each cutting firmly in the soil.

Eulalia japonica variegata and E. zebrina.—It is well to remember that in taking cuttings of variegated plants a selection should be made of the best variegated pieces on the mother plant. Take for cuttings the strong well-finished-up growth. Dibble into the pit in rows pieces 4 or 5 inches long, leaving ample room for each cutting, which should be firmly pressed into the soil.

Eurya latifolia variegata.—This beautiful plant is best propagated from the side shoots: the wood must be quite ripe and hard for the cuttings, which should be 4 or 5 inches long. Dibble and press firmly into the soil to the depth of 1½ inch.

Eurybia ilicifolia.—Look for the ripest wood to be had on the plant, and make into cuttings, 6 inches long, and dibble into the soil 3 inches deep. Also water them so as to settle the soil around them.

Gynerium argenteum and G. variegatum.—This is a good time of the year for dividing up these and other choice varieties of this plant. The best plan is to shake all the soil off the roots, so that the gardener may see exactly where to split up the plant. Each piece must be potted up, and a stick, to which the plant should be tied in three or four places, put to support it. After well watering them, place in a cold pit, where they should at this time be shaded from the rays of the sun. It is necessary to sprinkle them overhead night and morning until they make fresh root, and each day a little air must be given them from the back of the frame. The soil most suitable for potting is good turfy loam, and a small quantity of peat and river sand. This treatment will also apply to Arundo conspicua.

Lardizabala biternata.—In this case strong well-ripened wood should be selected for the cuttings; but, contrary to the usual practice, a side cut should be made 1 inch long, but only to the depth of the middle of the stem, and then make a clean cut at the bottom. Dibble in 3 inches into the soil, and press in firmly.

Ligustrum japonicum and L. ovalifolium.—Cut pieces off these plants with six or eight leaves on; the wood to be firm and the leaves to be removed from the bottom of the stem, and the cuttings to be made at the leaf-joint. Dibble in to the depth of 2 inches, press firmly in and water them.

Mutisia decurrens.—The best way of propagating this plant is from the suckers taken off the plant when they are 4 or 5 inches long. When taking them off the plant care should be taken to remove a little of the soil around the sucker, so as to enable the propagator to get as much of the bottom as possible. Pot up in a little peat, loam and sand, tie each one to a small stick, water them and place them in any quiet corner of a cold airy house. They should be kept watered.

Olea fragrans and O. ilicifolia.—Select good strong pieces of 4 or 5 inches long, to be put in as cuttings. *T. O'B.*

FORESTRY.

REASONS WHY WOODS DO NOT PAY.—In these days, when landed property is ominously declining in value, and the produce of the land, in this country at least, still tending downwards in price, with little or no prospect of ever again rising, at least so high as it has been, it becomes the duty of any one interested in the prosperity of their country, but especially landed proprietors, whose means and substance are vested in the soil, to ponder and consider well how they can best and most profitably occupy the land. It lies beyond the compass of this subject to show the comparative and relative value of all the different kinds of crop the land produces, as it only undertakes to show that while forest trees are capable of being made the most profitable crop the uncultivated soil can produce, it yet remains a fact that cannot be gainsaid, that in the majority of cases they are the very reverse, and instead of being the best paying crop they are emphatically the worst. After making all due allowance for mythological prodigies and boundless exaggerations about the value and profitableness of woods and plantations, there still remains a broad margin of incontestible facts sufficient to convince any who are open to conviction, and to show that woods and plantations not only do pay, but under certain conditions pay better than any other crop the soil is capable of producing. That such should be the result need not, after all, awaken any surprise, when it is considered that land in its natural state, even under the most favourable conditions, requires a large amount of capital expended upon it to make it suitable for agricultural purposes, whereas for the successful and profitable growth of forest trees comparatively little is required to be done. Ground that has been trenched, furrow-drained, and in other respects made suitable for agriculture, it would in general be injudicious and unwise to plant with a view to derive from it a greater profit, or even so great as for agricultural purposes. It is not, however, land suitably adapted for agriculture, and where a fair rent is obtainable that trees as a crop are recommended to pay better or even so well as for farming purposes. It is not land suitably adapted for agriculture, much less land that has been under the plough, that is commendable as a profitable subject for planting. Such land, so far as the writer's experience has gone, has never proved profitable or adapted for tree culture or for the growth of timber. To many it might appear a very simple and easy matter to adduce numerous subjects illustrative of successful and profitable planting, but to those who have made the subject one of practical research such subjects are much more difficult to procure than might be imagined. The writer from his own (by no means circumscribed) personal acquaintance with woodlands only knows a comparatively few of what he regards as proper examples, amongst which are or was a part of a natural Scotch Pine forest on the estate of Rothiemurcus, in Strathspey; a Scotch Pine plantation of fine old timber at Castle Grant, in the same valley; a large area of natural Scotch Pine timber on the Balmoral estate on Deeside; two plantations of mature old timber, one of them Scotch Pine and the other Larch, situated on Novar estate, in Ross-shire; a large fine old Scotch timber plantation on Gordon Castle estate, near Fochabers, in Banffshire; a fine old Oak timber plantation on the estate of Buckhurst Park, in Sussex; an old fine grown Scotch Pine plantation on Hartry estate, near Jedburgh, in Roxburghshire; a mixed Larch and Oak plantation on the estate of Minto, in the above county. The last I shall here refer to, is a Scotch Pine old plantation at Beaufort Castle, Inverness-shire. These, it is to be understood, are only adduced as a few samples of what the writer regards as the result of judicious and proper planting, and successful at least to the extent of paying the proprietors better very considerably than any other crop the ground could possibly produce. There is a trite saying, "Exceptions prove the rule," quite applicable here, for without such examples as those adduced it could not certainly be known what results to look for or expect from the planting, neither could it be known except by experiment how such results are obtained.

If only one case of truly successful tree planting were known it would go far to establish the fact, and encourage future efforts in the same direction, but when so many have been adduced, it is certainly not saying or claiming too much for forestry in repeating the expressed conviction that, if properly attended to at every stage, including that of planting, forestry would be by far the most profitable department on the landed estate of uncultivable ground.

The first step to be taken, whether in the direction of success or failure, is that of planting, and to hear many people speak on the subject it would appear to be at once the simplest and easiest thing to do under the sun. I one day overheard two foresters speaking on this subject, when one of them exclaimed with an air of self-complacency, "I am at least thoroughly up in planting." The other replied, "If you can plant well, you certainly lay the sure foundation of future success." In planting, it is not enough to be able to put a tree into the ground, and place it in the most favourable position for growing. This is necessary to be done, but it by no means constitutes the whole, or even the most important part. Drain the ground and analyse the soil, you say; but neither are these sufficient and unerring guides to successful planting, for it is, or ought to be, well known, that soils containing the same chemical properties produce very different results in the growth of forest trees.

We have seen the soil on one side of a ravine identically the same (when analysed) as that on the opposite side, and yet trees grew luxuriantly on the one side, and all died on the other; the different results being caused by the soil on the one side being hard, compact, and retentive, while that on the other was loose, free, and open.

The primary and most important consideration in regard to planting is to determine the species of tree adapted to the soil, climate, and situation. When this is done, other things corresponding, profitable and satisfactory results may be looked for as the reward. It need scarcely be said that in the case of all those successful subjects referred to there was in each case a thought of the tree to the soil, climate, and situation, if not perfectly, at least so approximately that they respectively constitute a fair and reliable data by which to be guided in all subsequent undertakings. Every farmer and gardener knows to his experience that success or failure, gain or loss, fortune or ruin, depends almost entirely upon the adaptation of the plant to the soil he cultivates. What means that momentous clause in the lease, *Rotation of Cropping*, if it were not known by experience that so much depends upon it?

We are all familiar with the cry for improved varieties, whether of bulbs, roots, grains, grasses, or live stock. Nor is the cry only one of sound, for the writer can bear testimony to having at one time a field under his charge, one-half of which was sown with a Pea known in Sussex as the Sweet Jessie, and the other half by what is known as the Partridge Pea; the result was, that the former yielded more than double the quantity the latter did.

As with vegetables, grain, and grass of all kinds, so with plants and forest trees, the latter forming no exception; but as the tree, instead of accomplishing successfully its growth in one year, requires nearly a century to do so, it must be self-evident that it should be so planted as to soil, climate, and situation, that its growth may continue uninterruptedly during that period. *C. Y. Michie, Cullen House, September* 1.

(*To be continued.*)

Fruits Under Glass.

PEACHES ANG NECTARINES.—Root pruning and lifting is an operation of much utility in connection with the culture of these fruits. Therefore, any trees that require it (which can be discerned either by their exuberant growth, or the sickly colour of their foliage) should be taken in hand immediately before the foliage falls. Young trees usually need to be dealt with occasionally in this way in order to bring them to a satisfactory state of bearing, and ought not to be neglected. Before proceeding with the operation ascertain that the border is moderately moist, then make a trench at an equal distance from the tree to be lifted and those adjoining it, and carefully and quickly remove the soil in which the roots are embedded with a steel fork, with great care. Having liberated the roots, coil them back near the stem of the tree, and after moistening cover them with wetted mats, then if necessary rectify the drainage, and replace some of the soil, making it thoroughly firm by treading; in the meantime shorten any of the roots that require it, removing mutilated ends and suckers with a sharp knife, and re-lay them in fresh compost formed of strong calcareous loam and old mortar rubble, which should have been previously placed under cover as formerly directed, to insure its being moderately dry when used. In arranging the roots spread them out regularly, but avoid keeping them all on a level bed (which would necessitate crowding), by bringing a portion of the smaller ones well up immediately under the surface, so that their fibres during the growing season may readily reach the annual top-dressings and mulching material with benefit to the trees. Once the operation is completed, mulch the surface of the border with short manure, give sufficient water to moisten it through, and for a few days, until the trees have partially recovered the shock, they should be guarded from violent draughts of air and scorching rays of the sun, and be kept moist with the syringe, care being taken that the stems and branches are moistened as well as the leaves. The early varieties in the latest house having been gathered see that all wood not wanted for the next crop is cleanly cut out of the trees, and let later ones be similarly treated as the fruit is gathered, so that the sun and air may mature the wood. Attention should likewise be paid to the foliage, keeping it clean with the syringe, and to the watering of the borders, while air should be freely let into the house. Early houses should be kept as cool and as freely ventilated as means will admit of, so that as perfect rest as possible is afforded the trees. The weather has been favourable for maturing the wood, and if previous directions have been carried out there should be no defect in that respect.

MELONS.—There is no question that the production of very late Melons requires a greater amount of care and watchfulness than that of any others, not excepting the earliest crop, and perhaps for this reason the scarcity of late compared with early fruits may be accounted for. Notwithstanding that the flavour of those ripened after September being generally defective it is not to an extent—if pains be taken with their culture, and a proper kind of structure is at command in which to grow them—to cause them to be unworthy of cultivation. We find them an invaluable addition where a variety of fruit is in demand for large dinner parties, and they are always missed if not forthcoming. The greatest cause for anxiety in connection with growing Melons arises, as is well known, from their susceptibility to canker, which is accelerated by a low temperature and damp atmosphere, and late Melons are particularly liable to become victims to it, because they are grown during a season when the weather is generally of an inclement nature; no pains should, therefore, be spared to ward off this disease, for should a plant be now affected, there will be a difficulty in impeding its progress, and the chances are the crop will not be perfected. The best means to adopt are an adequate degree of warmth, and as dry an atmosphere as is consistent with health. The night temperature should be kept up to 70°, with a corresponding increase during the day, while air should be given at all favourable times, and a little be admitted from the front of the structure through the night, if it can be so managed that it first comes in contact with the warm pipes; watering must be done with caution, especially where the plants are grown over beds of leaves and other material, and as the fruits ripen a continual circulation of air should be kept up, and a warm temperature be maintained by the aid of artificial heat accompanied with a dry atmosphere, for upon these conditions combined the quality of the fruit depends.

VINES.—The Vines in the earliest house, which is about to be closed, should by this date—particularly after such a favourable hot dry season—have their wood, which should have been shortened back as recommended, thoroughly ripened, with the foliage at the point of falling. Being in this condition they should be pruned before the end of this month; in doing so clean cuts should be made, and one or two prominent buds be left on each spur. The house should then be thoroughly cleansed and painted, if necessary; the rods should also be properly cleansed in the first place, and the loose bark should be removed: perhaps it may be well to mention here that the old practice of severe scraping is injurious, and should on no account be adopted. Where red-spider and other insects have been troublesome, however, means must be taken for their extermination, and for this purpose the rods should be scrubbed twice—in the first place with soapy-water, so that all the crevices may be moistened; and, secondly, before the rods have dried, with a solution of Gishurst Compound, used in a warm state, which must also be well worked into the crevices of the bark. Styptic should be applied to the wounds on the spurs as a preventive of bleeding, the rods be tied in a horizontal position, and the internal border top-dressed in the manner as was advised for outside ones in the Calendar for August 16. Where Vines which have had their crops gathered in successional houses are unsatisfactory, and the fault lies at the roots, the process of lifting should be undertaken at the time the foliage commences to mature, as was directed for the early-house; this is the only satisfactory treatment in such cases, and notwithstanding its proper execution necessitating care and perseverance, it must be faced and carried out without delay, and the borders be entirely removed and replaced with those formed of suitable compost, if such a measure is found essential. Late houses should have their fruit quite ripe by the first week in October; this is important, not only that the fruit may keep well, but also on account of the wood being satisfactorily matured early, which is a necessary point in connection with the prospect of the succeeding crop. In cases where the Vines were started late and the fruit is backward, every means possible should be brought into practice that will assist in advancing it; the night temperature should be kept up by fire-heat to between 65° and 70°, with a corresponding rise during the day, accompanied with a constant circulation of air, the ventilators being more or less opened in accordance with the state of the weather, while a moderately dry atmosphere must be maintained, and any sublaterals that have extended much and unduly crowd the trellis should be shortened in or be cut away, so that the benefit of light and air may be fully reaped. *Thomas Coomber, Hendre Gardens, Monmouth.*

Plants and their Culture.

BULBS.—If these are not yet ordered or purchased from trustworthy sources, no time should be lost in seeing to the same. In order to prolong the season of the Hyacinth some of the earlier kinds should be potted up without delay. The following are some of the best for this early work, viz., of whites Grande Vedette and Princess Beatrice. The former of these is the white kind that is grown in such quantity by the market growers. Of reds l'Ami du Cœur is one of the earliest; Norma, a delicate waxy-pink, is quite distinct and very good for early work. Of blues Grande Vedette, of a delicate azure shade, and Argus, a deep blue with a white eye, are good sorts. For early use these single kinds will in most cases be found to answer well as a succession to the early Roman Hyacinth. Later sorts can be chosen with ease from any descriptive catalogue to suit tastes and requirements. Of the Polyanthus Narcissus note should be taken of Bazelman major. We are well aware that the bulbs of this kind are quoted at a higher figure than others, but each spike is almost worth two of any other sorts; this should, therefore be taken into consideration when making the selection. The Daffodil section of Narcissus also furnish excellent material for pot culture. Of these the varieties of N. incomparabilis, N. poeticus ornatus, and N. biflorus will all be found most useful. These types should be extensively cultivated in pots, having the valuable quality of remaining in good condition for a long period, being also of easy culture and comparatively cheap in price they should become popular pot bulbs, and all the more so now this genus has come into favour. For indoor decoration they afford a pleasing and distinct change from the ordinary kinds of bulbous plants, and being afterwards useful for planting in borders and shrubbery.

Of the single Tulips, Vermilion Brilliant is proving itself one of the best of its colour for early forcing, being much finer in its blooms than the Duc van Thols, and hardly any dearer in price. Raphael, a double kind, of a rose colour, is also becoming a popular sort. It should be borne in mind that the imported clumps of Spiræa (Hoteia) japonica, are invariably the best for early forcing, starting away much more freely than home-grown stools. Of miscellaneous bulbs and bulbous plants for pot culture Gladiolus Colvillii alba (The Bride) is most useful, doing well in small pots. The genus of Hæmanthus also furnish a most attractive class of bulbs for the stove, so does the distinct and pretty Urceolina pendula (aurea). Triteleia uniflora also does well in pots stood in a cool frame. The Lachenalias should be grown by every one; our stock was potted up early, and is now pushing into new growth. After the bulbs are potted up a surface dressing with cocoa-fibre refuse will be better than allowing any ashes to come into direct contact with the bulbs themselves. Considerable discretion is needed in using ashes; those from the furnaces, if having had full exposure for a lengthened period will be preferable to those taken from ash-pits or heaps; these latter are generally the receptacles for all manner of rubbish that is injurious to vegetation. When potted-up and ready for arranging together, choose a position that is dry.

CAMELLIAS.—Should any of the stock of these that are pot-bound, or otherwise, need a shift, now is a very good time to perform the operation. The growths being hardened and the flower-buds showing themselves, no fear need be apprehended of growth being induced at the expense of the bloom-buds. When in good health it is surprising to see what fine plants can be grown in comparatively small pots, provided attention is given to the supply of water. It is not well, however, to push this to the extreme, but to re-pot in fair time before any weakness is apparent. See that the old ball is well soaked with water previously to this being done, and be careful also not to injure the tender rootlets in re-potting. If possible give a shift with at least an inch of fresh soil around the old ball and pot firmly, though not to the same extent as in the case of Ericas and other Cape plants. We find ours to succeed well in a mixture of nearly equal parts of peat that is tough and fibrous, and turfy loam, adding a good quantity of silver-sand thereto, and a few half-inch bones. If standing out-of-doors after being re-potted, be careful to guard them against the wind. We secure ours by stakes at once, and thus save ourselves a lot of future trouble, Any large plants that are turned out into an open border and that need attention should also be seen to. If they are not in a satisfactory state, the best way will be to examine the drainage, renew the soil, and re-pot at once, rather than allow the plants to go through the winter in an uncertain condition. When potting them take the opportunity of well cleansing the plants of insects, access being possibly easier then than afterwards. Slight dampings afterwards will be of great service to the plants that have been lifted, and shading also if much exposed to the sunshine.

AZALEAS and all other hard-wooded greenhouse plants should have full exposure to the sun for the rest of their stay out-of-doors, which will not now be long; in fact, any newly-potted stock of this season will be far better if brought under cover, should the rains that are now doing us an amount of good in other ways still continue. See that Chrysanthemums are securely staked and tied; their growths will now be getting top-heavy, and are then easily broken down. To avoid after-reflections, therefore, it will pay to give them every necessary attention now. Keep watch also after mildew, which will soon make rapid headway if not checked as soon as observed. Pay close attention as well to the watering; if this is overlooked, the lower foliage will soon show the effects of the same, and need prematurely pulling off, or else be an unsightly object. *James Hudson, The Gardens, Gunnersbury House, Acton, W.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 15	Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms
TUESDAY,	Sept. 16	Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. Annual Sale of Greenhouse Plants at Mr. B Maller's Nursery, Lee, by Protheroe & Morris
WEDNESDAY,	Sept. 17	Annual Trade Sale of Greenhouse Plants at Fraser's Nursery, Lea Bridge, by Protheroe & Morris Sale of Dutch Bulbs, at Stevens' Rooms Royal Caledonian Horticultural Society's Show (two days).
THURSDAY,	Sept. 18	Annual Trade Sale of Greenhouse Plants at Mr. J. Maller's Nursery, Tottenham, by Protheroe & Morris. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Imported and Flowering Orchids, at Stevens' Rooms.
FRIDAY,	Sept. 19	Sale of Established and Semi-Established Orchids, at Protheroe & Morris' Rooms. Trade Sale of Greenhouse Plants at Gregory & Evans' Nursery, Sidcup, by Protheroe & Morris.
SATURDAY,	Sept. 20	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms.

IT is well known that certain cases have been recorded in which the AGENCY of the POLLEN has been traced not only in the seedling offspring generated in consequence of its application, but actually in the mother plant itself. Thus the fruit and even the seed-coats have been known to be changed in character by the contact of the pollen. Nor is this so singular as at first seems. We are apt to overlook from its very universality the fact that one of the first visible consequences of the action of the pollen is the swelling of the ovary. True, this may and does take place sometimes without any such contact, but such cases are exceptional, and the rule is as we have stated. The change, however, in the fruit and seed-coats is most usually one of increase in size merely. There are, however, as we have remarked, cases in which the mother plant is actually altered in character by the influence of the pollen.

Mr. LAXTON'S experience in the case of Peas was recorded in our columns in 1866, and his results did but corroborate those of Mr. BERKELEY made some years earlier, and in which the colour of the skin of the Pea was conclusively shown to be modified according to the pollen employed. NAUDIN recorded a case in which the fruit of Chamærops humilis fertilised by the pollen of the Date Palm, was intermediate in character between the fruit of Chamærops and that of Phœnix. Numerous cases of a similar character are cited in the eleventh chapter of DARWIN'S *Animals and Plants under Domestication*. So far as we know, however, the case of the Strawberry has not been noticed. In the last volume of the *Transactions* of the American Pomological Society we find some highly curious and important observations relating to the influence of foreign pollen on the fruit (so-called) of the Strawberry, and which we subjoin.

We should premise that in the United States the flowers of the Strawberry are much more frequently unisexual than they are with us; and next, that what is called the fruit in a popular sense, is not really fruit in a botanical sense. It is really the common stalk of the fruit enormously dilated. It is, in fact, the thalamus of the flower bearing the pips, which latter, though usually considered to be seeds, are really seed-cases or fruits. We must apologise for dilating on such botanical rudiments as this, but they require to be well grasped to appreciate what follows, and which, it will be seen, is not only of much physiological interest, but of great practical importance. We reproduce the discussion in the form in which we find it in the work cited.

Mr. J. B. ROGERS, of New Jersey.—This year the Manchester Strawberry has surprised the growers on account of the large size it has attained, when planted near certain varieties as a fertiliser for it. When first grown on Mr. BBATTEY'S place, where the flowers were fertilised with the Wilson, it resembled the Wilson, and in many cases only a close inspection could determine the distinction between the two. Last year many experts were fearful that there were two or more berries put out under this name, as the colour of the fruit was so variable. This year, however, has demonstrated that size, shape, colour, and firmness is greatly altered by the varieties near which it may be planted. When the Wilson is used, the Manchester is small, hard, not very productive—poor in all respects except colour. Sharpless gives largest berries, although apt to produce sports in shape of the Manchester, also renders in most instances a more firm carrying berry. Bidwell gives good results, in shape uniform, deeper colour, variable as to firmness. Cumberland Triumph gives a berry much like itself in all respects. Miner's Prolific, as to results much the same as the Wilson.

This subject of the effect of the male plant upon the fruit has been under observation by the members of the New Jersey State Horticultural Society since 1881. At the annual meeting held in February of that year, Mr. C. W. HARRISON asked if pistillate varieties were less firm than perfect flowering varieties? He had found that Gypsey, fertilised by Black Giant, partook of the nature of the latter. Champion fertilised with Great American resembled it. Their resemblance was very apparent in colour and firmness of flesh. Pale berries fertilised with dark ones, he was sure, would be improved in colour.

Mr. J. H. HALE had noticed that Crescent Seedlings fertilised with Wilson's were firm enough to carry to Boston, a distance of 110 miles, while those fertilised with Charles Downing were too soft for that purpose.

Mr. J. T. LOVETT cited a garden in which some years ago were Wilsons and French Seedling Strawberries, and no difference could be detected in the looks of the fruit. The flower of the Wilson was also improved. The next year, 1882, it was supposed that Glendale and Sharpless planted side by side produced berries on each row possessing characteristics of the other, and where they had run close together it was still more marked. In picking two or three quarts of the Glendale, a large proportion would show characteristics of the Sharpless.

Mr. ROGERS.—Early in the summer of 1882, Mr. HOVEY having advanced the claim that the Manchester and Hovey seedlings were identical, a very close scrutiny was had into the merits and characteristics of the Manchester. Berries were found of several shades of colour and sizes. Mr. HOVEY after a while abandoned the assertion that the two varieties were identical, but not before the fact that fertilised with different varieties seemed to produce variable results as to colour had been noted. The Manchester was exhibited at the New York Horticultural Society exhibition this summer, raised by the side of different varieties, clearly proved this assertion, and this on the grounds of several persons, some of whose places were 100 miles apart. Manchester by the side of Cumberland Triumph gave the same results this season in three cases, one in New Jersey and two in Connecticut, and each widely separated. In a conversation with Mr. DURAND on the fertilisation of varieties one with the other, and the effect that it had in the form, shape, colour, and flavour of the berry the first year, he said that there was no doubt that certain varieties made much better berries in all respects if planted near one another. This was in respect to the difference observable in the Jersey Queen when planted in close proximity to some varieties. Last year the most magnificent crop ever seen was on a bed where the Bidwell was near. The two or three next the Bidwell were immense in size, good colour, perfect berries, while in the same bed a few rows near the Sharpless were much inferior and smaller in size. This effect does not seem to be confined to pistillate varieties only; even hermaphrodites partake of the size, shape, colour, and flavour one of the other. The present season in my experimental beds Sharpless and Primo, set side by side in the same row, blossomed about the same time. The Primo partook of the shape of the Sharpless, which were sports, in size two or three fold larger than Primo by themselves; colour lighter and softer than on the other row. The rows from which the plants both of the Sharpless and Primo were taken to set in the row were turned about but not within the same soil or 8 feet from one another, produced as to Sharpless the same general characteristics of berry as the other. The Primo, however, had only the average berries as to size, shape, and colour, whereas the Primo fertilised with Sharpless were the largest specimens ever seen. A prominent nurseryman wishing to have a sample of the Primo engraved for his catalogue declined the offer of taking such from a quart picked from the plants near the Sharpless, giving as the reason the public would be deceived from the size. In this case the productiveness of the berry was very much increased. From observation and experience I believe that many of the contradictory reports had from the new fruits in experimental beds arises from the uncongenial neighbours planted near. In many instances may not the result of a whole year's labour be lost from the same cause? I would not have it inferred that I wish to give any undue preference to the Manchester by these remarks, only that, like the Concord among the Grapes, from certain causes taking a high place, and giving a stimulus to Grape culture. So the Manchester possessing, as it would, since a marked preference to certain varieties, as a fertiliser has, as it were, opened a new field for experiment. When experiments are made over a more extended field results may vary. Only such a short time has elapsed since the first observations were made that nothing conclusive can be determined, only extended and thorough experiments can fully demonstrate the value of this subject.

Mr. J. T. LOVETT of New Jersey.—The subject of the effect of the pollen upon pistillate varieties of Strawberries came up before our State Horticultural Society some years ago, when it produced much discussion. It elicited the expression of several growers of wide experience. Without an exception they testified that pollen from perfect flowered varieties not only exerted an influence, but a most decided one, upon the fruits of pistillate sorts. I have previously noted the phenomenon, and set about the following spring a series of experiments to ascertain to what extent the influence of a pollen-bearing variety was transmitted to pistillate ones through the fructification of the flower. I was surprised to learn that it was so great as to render it of a widely different character, almost unrecognisable, transmitting not only the colour of the pollen-bearing variety, but the size, form, and texture of fruit as well. I have experimented with Melons also, and have found that the male element affected the Melon as well as the seeds. I am aware of the fact that the subject before the house is one bearing upon vegetable physiology, but if the pollen fertilising the flower of a pistillate variety exerts no influence upon the pulp of the Strawberry, why plant pollen-bearing varieties near pistillate ones? or, in other words, why fertilise the blossoms of pistillate varieties at all? For analogy's sake I extended my experiments to Melons, and found the influence of the pollen-fertilising the blossoms equally potent in its influence upon the flesh of the fruit. Seeds of musk-Melons were placed by the side of Cucumbers, and also in an isolated location. Those near the Cucumbers partook of their character to an extent that rendered them unpalatable, while those grown where the blossoms were self-fertilised were excellent. I took the precaution to have all the seed used in the experiment taken from the same Melon.

—— Mr. GEORGE BENTHAM.—It is with no surprise, indeed, but with deep regret, that we have to announce the death, in his eighty-fourth year, of the veteran botanist, GEORGE BENTHAM, on September 10. As Secretary to the Horticultural Society many years ago, as the devoted self-sacrificing President of the Linnean Society for several years, as an indefatigable observer and writer on botanical subjects, particularly as the author, with the aid of Baron VON MUELLER, of the *Flora Australiensis*, and in conjunction with Sir JOSEPH HOOKER, of the *Genera Plantarum*, BENTHAM will be long remembered not only as one of the foremost botanists of his time, but as one who, during a long life, has most particularly helped on his fellow workers by his example, his books, and by direct encouragement. The news reaches us at too late a moment for us to attempt to give now any sketch of his career: this must be left for a future number; silent veneration is the uppermost feeling for the moment. As was most fitting, his old friend and fellow-labourer Sir JOSEPH HOOKER was present at the deathbed

—— THE ROYAL HORTICULTURAL SOCIETY.—We are pleased to be able to state that the Report of the National Apple Congress is in the press; and further, that steps are at length being taken to publish the voluminous records of the effects of the frost of the two recent severe winters.

—— The Thames Iron Bank Company.—We are requested to state that Mr. R. S. Dunbar's connection with the firm ceased on September 9.

—— Potatos.—All kinds of early Potatos are being got up and stored under exceptionally favourable conditions, as where the sample, owing to the drought, is smaller than usual, it is at least very sound, and as the tops have so entirely decayed there is none of that danger incidental to after-sickness, as Mr. Jensen characterises it, which always follows if the crops be lifted and stored whilst the haulm is reeking with fungus-spores. All the later and still growing kinds remain a problem difficult to deal with, because, though the tubers are of fair size, yet they are very unripe, and the tops are still green and vigorous. Should heavy rains fall super-tuberating may follow, but so far, happily, this evil has not largely displayed itself. As far as can be judged by what has been seen, the coming exhibition season for Potatos bids fair to be a remarkably good one, and at the chief shows, especially those at the Crystal Palace and South Kensington, in October next, unusually good samples and extensive collections may be looked for. Some growers whose soils are unusually parched and dry complain of scale, but though that disfigurement is a drawback to exhibition tubers it is not so with kinds intended for market, as it is a feature found more largely in good table kinds than in indifferent ones. Happily it is an evil that is only skin-deep. Owing to the moderate nature of the crops of earlier kinds resulting from the dry season such a fine late variety as Magnum Bonum has been very largely marketed, even though the tops be still green and vigorous, but there is such a wonderful breadth of this kind planted that it would seem as if all the stocks could not be exhausted. Just now Potatos have fallen in price, and are for many of the growers rather too cheap, but it is anticipated that the demand will increase as the winter approaches.



Fig. 64.—the flower garden at arundel castle. (see p. 327.)

—— The National Footpath Preservation Society.—We are delighted to hear that a society has been formed to resist the abolition and unnecessary diversion of footpaths. Of course, it is very nice for the owner of a park to be able to close a footway with the consent of his brothers on the bench at Quarter Sessions, but it is not very nice for the people at large, whose rights are ignored, to have to substitute the hard highroad for the pleasant footway; while so far as the coming generations are concerned such a procedure is a positive breach of trust. It is true that sometimes some sort of compensation is given by the formation of a new and more commodious road, but in many cases nothing can compensate for the loss of these ancient footways. Another matter of a similar nature requires attention, and that is the enclosure of the green spaces along the roadsides. In various parts of the country we may see symmetrical palings carefully placed along the very edge of the highway and serving to enclose the greensward on either side to add to the pleasure ground or park of some landed proprietor. Even supposing it to be legal on his part, this is an instance of petty meanness of which an English gentleman should be incapable. If a proposal were made to plant Walnut or other fruit trees along the the road sides, as is done in many parts of the Continent, such people would be among the first to discourage the proposal on the ground of the temptation it would offer to little boys to commit petty larceny! The establishment of such a society as that above-mentioned would prevent unseemly disputes, and obviate the violent and illegal procedures to which residents in the country are sometimes driven to protect their rights. Mr. Allnutt of the *Estates Gazette* Office, Fetter Lane, London, E.C., is acting as Hon. Secretary *pro tem.*

—— Organic Acids.—Some light has lately been thrown upon the part played by organic acids in plants. According to Dr. de Vries malic acid, either free or in the form of malates, is one of the principal vegetable acids causing turgidity in the fruit

and stems of plants, and is one of the chief agents by means of which potash is absorbed through the root. Other organic acids possess similar powers. In young organs they are found chiefly in combination with salts of potash, and at a later period this alkali is replaced by lime. Calcium oxalate, so often found in barks, is regarded by S. RAUNER as an excretory product, since he found that it did not disappear from the bark as the new shoots were put out, but was constantly present at all times of the year. Herr PFEFFER has noticed that malic acid is the substance which has the specific power of attracting the antherozoids of Ferns and Selaginellas into the archegonium, while cane sugar is the substance which attracts the antherozoids of mosses. More than the normal amount of these agents has, however, an opposite effect, and repels the antherozoids. *Journ. Mic. Soc.*, iv., 412.

—— TUPA FEUILLEI.—It is much to be regretted that the members of this genus are not more frequently cultivated in gardens than they are at present. Apparently through some misunderstanding they are placed in the open border, and left there till killed outright by frost and wet. If treated in the same manner as Mexican Lobelias, and put in a frame, or otherwise housed in a cool place in winter, the subject of this note could not fail to give satisfaction, and prove a handsome attractive bush with a subtropical appearance. Whether planted by itself or in combination with other herbaceous subjects, ample space should be provided for its reception, as the great stems which it throws up to the height of 5 or 8 feet are abundantly clothed with ample stiffish grey foliage. The curious scarlet flowers are produced in long racemes, terminating the stout unbranched stems. A huge bush is flowering grandly in the herbaceous ground at Kew. A plate appeared in the *Botanical Magazine*, t. 2550.

—— CROCUS VALLICOLA.—Flowering as it does in August and September, before the short sunless rainy days of our autumn beat everything to the earth, this species merits a place in every garden for its ornamental value. The flowers are comparatively large, pale straw coloured or nearly white, with violet lines, and two yellow spots on the basal half of each segment, which terminates in a very characteristic slender point. They are unattended by the leaves, but borne well above the soil, which might readily be carpeted for decorative purposes with Linaria hepaticæfolia, Arenaria balearica, or other low-growing plant of like nature. Its flowering season being contemporary with several species of Colchicum might render it valuable as a contrast. The Trebizond Alps in Asia Minor and the Caucasian mountains are its native habitats. It has been flowering for some time in the Kew collection.

—— DASYLIRION ACROTRICHUM. — Botanically this is a very aberrant Lilywort, inasmuch as the flowers are dicœcious, and the ovary one-celled. Horticulturally this plant is of some importance for the decoration of greenhouses, or any cool structure. Except the house is a large one, small or medium-sized plants are most desirable, because most convenient and manageable in a mixed collection. Plants well furnished with their spiny serrated leaves have a graceful and relieving effect amongst foliage plants of a heavier and more massive character. The recognised number of species is eight, and the present one is readily distinguished by a tuft of fibres terminating each leaf, as the specific name implies. A female specimen of great size has been flowering for some time in the Succulent-house at Kew. The stately flower-stem attains a height of some 7 or 8 feet above the glass outside the house.

—— NITRATES IN PLANT.—M. BERTHELOT, says the *Pharmaceutical Journal*, has lately studied the cause of the presence of nitrates in plants, and the part they play in vegetable physiology. In order to ascertain these points several plants have been analysed in various stages of growth, from the seedling to the time of ripening of seed. His experiments tend to establish the existence of a newly discovered function of plant tissue, which is probably effected by certain cells acting as a ferment and producing nitric acid as the result of their action, in the same way that cells of fruit play the part of yeast in developing alcoholic fermentation. This function appears to be correlative with the phenomena of oxidation and reduction, which take place in the tissue and in successive conditions in the life of plants. He believes that the presence of nitrates is universal in the vegetable kingdom, and that the stem is the principal seat of their production. The proportion present varies, however, at different periods of vegetation: thus, in the Potato it may vary from hardly any to fifteen per mille.

—— ARGYREIA HOOKERI.—There is a general sameness amongst a large number of the Bindweed order, but this one stands forward conspicuously by its large handsome foliage. The large funnel-shaped purple flowers are borne in clusters in the axils of the leaves, which are heart-shaped, and, as well as the stems and petioles, often tinged with red on the underside, obscuring the silky appearance of the pubescence that originally suggested the generic name. The twining stems are annual and very robust. When these show signs of decay water should be gradually withheld to dry and ripen the tuberous rootstock. After this repotting should be done if necessary, and the plant watered again when growth recommences. It has been flowering for some time in the Water Lily-house at Kew.

—— A GROVE OF SPRUCE FIRS. — Away in a remote portion of the woods adjoining Chalfont Park there was planted many years ago a large number of Spruce Firs to form cover. Nearly all were afterwards partially laid, that they might have their branches close to the ground. Fortunately two lines, some 16 feet apart, were left standing, the trees in the lines being some 18 feet apart, and the entire grove or avenue—for such it really is—about 300 yards in length. The Firs are now some 40 to 50 feet in height, densely branched, but the lower ones of necessity dead. The inner branches have been removed, and now there is a tunnel-like grove some 10 feet in height that is absolutely novel and delightful. The ground is covered with the spines, and walking is smooth and pleasant.

—— RAINFALL.—How common, since the hot weather broke up, has been the expression, "What a nice rain we have had—will do lots of good!" The fall, perhaps, has amounted to the tenth part of an inch, and has at the utmost just laid the dust in the roads, and moistened the surface of the soil. Persons who make this remark totally ignore the fact that we near London have practically had no rain for nine months—that really we have passed through the driest spring and summer combined within the memory of man, and they imagine that the requirements of the surface of the earth—now for some 2 feet in depth like a dry sponge, ready to absorb any quantity of moisture—can be met by a shower or two. Certainly it is remarkable to find that trees of nearly all kinds, and especially those which are not shallow rooters, have stood the long season of drought so well, for except in specially dry arid positions, both trees and shrubs have suffered little. Fortunately, though only a trifling quantity of rain fell before the close of the month of August, yet that little, combined with a cooler temperature, proved to be of exceeding value, as the later hot days were straining vegetation of all kinds to the utmost. One moot point for consideration is, what sort of winter will follow?—for an equipoise of some sort seems inevitable, and prevailing opinion pronounces for a wet one. That, it need hardly be said, will be a misfortune in all ways, either for cultivators or for labour, but at least it may return to the earth something of that moisture which nine months of drought have abstracted, and something more. A drippy autumn, without being absolutely a wet one, will do much good, and if followed by some frosty weather in midwinter, we might look then to next year with considerable hope and reliance.

—— PROTOPLASM.—The continuity of Protoplasm in the cells of plants is still attracting considerable attention in botanical circles. An interesting article in *Nature* (June 16, p. 182) gives a *résumé* of the history of the subject from the year 1837. Herr RUSSOW, who maintains that in all plants during their entire life the whole of the protoplasm is continuous, says the protoplasmic threads are seen well in Rhamnus, Fraxinus, Humulus, Gentiana cruciata, and in the bark of Prunus, Quercus, &c. Threads, however, which contain no granules, but are transparent and homogeneous, are with difficulty rendered visible. His method of examination is to lay the sections to be examined in a solution of 0.2 per cent. of iodine and 1.64 per cent. of potassium iodine in concentrated sulphuric acid. After removal the sections are repeatedly washed, and then stained with aniline blue; in some cases they are previously stained with picric acid. Mr. GARDINER, however, considers that the sulphuric acid method is unsatisfactory, and that the method of swelling with chloroiodide of zinc, and of staining with picric-Hoffmann blue, is in every way more advantageous, since little alteration of structure takes place, and the staining with blue is limited to the protoplasm (*Journ. Mic. Soc.* iv. 405).

—— TRITONIA AUREA.—In a general way these plants are grown in pots, but it is very seldom they are to be seen in anything like the condition they may be grown outdoors, as there they get no check, and are free from red-spider, which, when the plants are under glass, are almost sure to attack them, but with the night dews, showers, and cooler air to which the foliage is exposed in the open, these insects make no headway even if they do put in an appearance. As the Tritonia is not hardy it is necessary to plant in a sheltered position, one of the best places being along the front or end of a plant-house, where the wall gets warmed from the pipes inside, as then there is no danger from frost, especially if the border in which the bulbs are planted is protected by having on its surface a layer of cocoa-nut fibre or leaf-mould, both of which are capital non-conductors, and keep out the cold. Some years ago we started with a border at the south end of a greenhouse, where we planted our spare bulbs left over from potting, and though we had only a few which we put close to the wall, they have spread, and now form quite a mass nearly a yard wide, and are so full of branching spikes of flower that we could cut as many as any one could carry away at once in their arms. Those who would like to start with them in the same way should prepare a border by digging it out 2 feet or so deep, and either mix with the soil moved out a lot of sand and leaf-mould, or put in some fresh having plenty of these added, when the bulbs may be planted about 3 inches deep. The best time to do this is in spring, just before they start, when they may either be turned out of the pots and put just as they are, or shaken out and divided. Whichever is done, it is advisable to scatter a handful of sand over each, as then the rain passes freely away from the immediate position of the roots and leaves them in a comfortable condition instead of being wet and in danger from rot. Once planted, Tritonia aurea is best left to itself except affording the requisite protection during winter, which may be afforded by a dressing of half decayed leaves, a few inches of which will keep out all frost. The thing with the plants, as with all of the same character, is to allow the foliage to remain intact till it ripens and dies off naturally, when it may be removed, and the dressing given at once.

—— BELLADONNA LILIES.—Owing to the great heat these have this year flowered earlier than usual, and very fine they are, as with such clear weather and dry nights, so different to what we get later in the autumn, there is no fog or damp to injure the blossoms, which are perfect in colour and finish. Many seem to experience much difficulty in getting this lovely Lily to flower, which arises from planting it in the wrong place, as to get the bulbs to stand safely through the winter they must have shelter and warmth, and a sunny situation to ripen them, without which bloom will be looked for in vain. The border where ours are—and they are always fine—is along the front wall of a greenhouse, facing south-east, and running close on the inside are three hot-water pipes, which warm the soil and keep out the frost, and enable the plants in early spring to send up strong foliage. To this we attach much importance, and to save its being injured in its young tender state we are always careful to mulch heavily with half-rotten leaves, and to protect by sticking in a few evergreen branches, which together break the cutting winds and ward off the frosts. The way we prepared the border was by digging out the earth a yard or so deep, and draining the bottom, which we did by placing a 6-inch layer of broken bricks thereon, and these were then covered with half-rotten dung for the double purpose of keeping the interstices open and feeding the roots, which penetrate to a great depth if the ground suits. The subsoil was wheeled away, and only the top saved, which was mixed with sand and leaf-mould to maintain it in an open condition, and then returned to its place. This was done in the autumn, when the bulbs were planted about 6 inches

deep, and covered in the ordinary manner, when the border had a coating of litter, which was left on for the winter. In the following autumn we had a few blooms, and every year after an increasing number till the bulbs increased at such a rate that they began to push each other out of the ground. Seeing this there was no help for it but to take them up and divide, which we did some time ago, and replanted the strongest and best in the same place, where they are now blooming as freely as ever. If Belladonna Lilies are wanted for pots it is a good plan to have a double lot planted along the front of stoves or any hothouse having a southern aspect, as then one set of plants may be taken up one year and the other the following, which will give them a chance to get over the moving.

—— National Rose Society.—We have been kindly furnished with the following by the Hon. Secretary of the National Rose Society:—"In your notice of the Yorkshire Floricultural Society some time ago, you mentioned the probability of our Society holding its promised meeting there next year; we are sorry to say that the negotiations have fallen through, owing to their committee insisting on having a two days' show. It was one of the reasons for establishing our Society that two days' shows were to be condemned—they are, we believe, a fraud on the public; and any one who has seen Roses on the evening of a one day's show will see how reasonable is our decision. It is, moreover, unfair to exhibitors. Rose shows come so thickly in the season, that hardly a day passes on which our principal exhibitors have not to put in an appearance somewhere; but although this has been represented to the committee, and they have been shown that the one day's shows at Manchester, Sheffield, Bath, and Salisbury, have always proved to be financial successes, they still persist in their determination, so that we are reluctantly compelled to abandon the idea."

—— Carter's Grasshoppers *versus* Cross Arrows.—A cricket match was played at "Lord's" on Saturday last, in very unfavourable weather, and ended in a draw. Up to the last over (6.30—when the light became very insufficient), the game was decidedly in favour of Messrs. Carter's team, as the score was 90 with only six wickets down.

—— The Weather.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 8, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has remained cool and unsettled, with an unusually heavy rainfall in some parts of our eastern and south-eastern counties. The temperature has been below the mean in all districts, the deficit ranging from 1° in "England, N.E.," to 4° in "Ireland, N." The maxima, which were observed during the earlier part of the week in most of the Wheat-producing districts, and during the latter part in the grazing districts, varied between 69° and 66° in all localities except "Scotland, N.," and "England, N.W.," where respectively they were 65° and 64°. The minima, which were recorded between the 4th and the 6th, ranged from 33° in "Ireland, S.," and 37° in Scotland, N." and "E.," to 52° in the Channel Islands. The rainfall has corresponded with the average in "Scotland, N.," and "England, S.W.," but in "Scotland, E.," Midland Counties, "Ireland, S.," and the Channel Islands there has been a deficit, while in the remaining districts an excess is shown. This excess was considerable in "Ireland, N.," but still more so in "England, E.," where the amount was equal to four times its average. Bright sunshine has been rather deficient, the percentage of possible duration varying from 24 per cent. in "Ireland, N.," and 26 per cent. in "Scotland N.," to 46 per cent. in the Channel Islands. Depressions observed:—At the commencement of the week areas of relatively high pressure lay over Northern Europe and the South of France, while shallow depressions existed over extreme N.W. coasts, and the wind in our islands was therefore S.W. and S. During Wednesday and Thursday, however, a well-defined depression passed steadily across the North of France, the Netherlands, and the North Sea, so that the wind drew into N.W. and N. for a time, and blew strongly, first on the Norfolk and afterwards on the Scotch coast. On Saturday morning this depression passed away to the northward, but later in the day another disturbance advanced in an E.N.E. direction across Ireland and England, producing a fast westerly gale on our west and southern coasts. By the close of the period this had disappeared over the North Sea, and moderate westerly breezes were reported in most parts of our islands.

—— Gardening Appointments.—Mr. J. Slack, as Gardener to Col. Noel, Elston Hall, Newark, Notts.

A BRITISH ASSOCIATE ON HIS TRAVELS.

I suppose the foreign aspect of New York has been a matter of comment to every Englishman who has landed, and it struck me also with surprise. The appearance of the "stores," the dresses of the women and children, the style of horse and carriage, above all the boulevardish look of the principal streets in the evening, are much more French than English. In the Central Park there are thousands of Oaks, Elms, and Chestnuts, with Ailantus, Witch Hazels, American Maples, and others. The rose-coloured flowers of Hibiscus syriacus greet you everywhere, and the southern latitude is shown by the fire-flies (in the American language, "lightning bugs"), glowing in the grass and the bushes. The balconies of the houses, and even the Stores, are gay with Cannas, Strelitzias, and other semi-tropical things.

The valley of the Hudson does not give an Englishman an impression of high farming; but perhaps that is partly because most of the crops are already off the ground. Maize and Buckwheat are the most abundant crops still left—a few Hop gardens, and of course Apple and Peach orchards. By-the-bye, the much-maligned American Peach is a very good fruit, if your expectations are not raised too high. You get them everywhere at breakfast and dessert, together with delicious Melons (to be eaten, if you please, with a spoon—a great improvement on our English method), Bananas, and "green corn," and in New York the Sweet Potato. The chief botanical features of the country are the brillant red spikes of drupes of the Sumach, Rhus glabra, and the exquisite large rose-coloured flowers of the Hibiscus moschatus in the marshes.

Here (Catskill) we have a good specimen of a New York country village, again far more French than English in many of its ways. Close by are the Catskill Mountains, one of the finest bits of scenery in the Northern States. From the summit (about the height of Helvellyn) is a magnificent view of the Hudson valley and Massachusetts hills. Just below the summit is a hotel, capable of accommodating more than 1000 guests; and half-way up another more modest hostelry, built on the spot where Rip van Winkle took his long sleep. Although the hotels charge very high rates, the farmers will take you in and feed you well for the very moderate charge of six to eight dollars per week. The flora of the Catskills is very interesting to an Englishman; but if you want to know it you can get it from any American *Flora*—Asa Gray, or Alphonso Wood. One of the most interesting points is the mingling up of the commonest English weeds, Daucus Carota, Linaria vulgaris, Chenopodium album, Cnicus lanceolatus, Achillæa Millefolium, Plantago major, &c., with forms new and strange; while in the neighbourhood of houses the English plants often reign with undisputed supremacy. The Apple crop is said to have been all but destroyed here by July frost.

The entire absence of singing birds is very striking; indeed, we have seen here but little animal life, but have noticed a lovely grey squirrel, the American robin, some beautiful yellow finches, a few gay butterflies, and crickets and grasshoppers innumerable. At night the air is perfectly resonant with the chirping and booming of crickets and tree-frogs. To-morrow for fresh woods and pastures new.

Rochester.—The good city of Rochester was formerly known as the "Flour City," from the number and size of its flour-mills, now as the "Flower City," from its flowery gardens and extensive nursery grounds. It is only seventy years since the first house was built on the site of Rochester. It has now a population of 100,000; its streets and shops are lit by the electric light; it boasts its picture-gallery and handsome public buildings, and its observatory. Rochester is built literally on the Genesee River, which flows actually beneath some of its principal streets; its waters are utilised for its flour-mills and other factories immediately below the city, on the lofty Genesee Falls, below which the river is navigable for small steamers. Outside the city is the beautiful and well-planted Hope Cemetery; it is approached from several sides by roads or "avenues" between handsome country residences, most of which present the peculiarity that their gardens and well-trimmed lawns are entirely open to the road without fence of any kind, which adds greatly to the beauty of the roads, but would not suit English exclusiveness and love of privacy.

One of the principal objects of interest in Rochester is Mr. James Vick's seed-growing establishment, situated in East Avenue. The principal seed-house is a brick structure, 50 by 150 feet, four storeys in height. The firm deals in vegetable, flower and grass seeds, flowering bulbs and plants, everlasting and dried grasses, small fruits and hardy shrubs. The first floor of the seed-house contains a printing-office, book-binding, and machine shop, the machinery being used in connection with the binding, and for the manufacture of paper bags and boxes used in packing the seeds, &c. On the next floor is the main office, with large fire-proof and burglar-proof rooms, express-room, post-office, and store-room for seeds for immediate use. On the next floor is a large packing-room, and the order-room, where the orders are filled and directed to their destination. The upper floor has rooms appropriated to the storage of everlasting flowers and grasses, and to their manufacture into bouquets and all kinds of floral ornaments; also rooms for the storage of tender bulbs, artists' and engravers' rooms, and editorial office.

Most of the shipping is done between January 1 and June 1 in each year; in September, October, and November there is a trade in bulbs and hardy plants. The daily mail during the busy season averages about 1800 letters, the number sometimes rising to 3000. The system for opening this large mail is very complete. Every letter is registered on leaving the room where it is opened. The orders are filled, packed, wrapped, and addressed in the order-room and each package undergoes strict scrutiny to ascertain that it is properly filled and correctly directed before passing it into the express office or post-office on the premises. In the post-office the packages are tied and weighed, the postage-stamps attached and cancelled, and then distributed and packed in Government sacks, which are sealed and sent direct to the trains. Besides the mail shipments, large quantities of packages are sent daily by the various express companies, and as freight. About 40,000 dollars (£8000) worth of postage-stamps are used yearly in this business.

The *Floral Guide* (catalogue) is issued annually to the extent of more than 200,000 copies; Vick's *Illustrated Monthly Magazine*, a horticultural publication, with at least one coloured plate every month, edited by Charles W. Seelye, circulates in all parts of America.

In the same grounds as the seed-house are several buildings for storage, &c., and a range of ten propagating and greenhouses, and a large area of farming ground. Over 100 acres of land are in cultivation, producing seeds, bulbs, and various plants; in other parts of the ground are many thousand feet of glass. Several acres of trial ground are devoted to the testing of seeds and plants.

The specialities of culture of the firm are Phlox, Verbena, Aster, Hollyhock and Zinnia seeds, Dahlias (double and single), Tuberose bulbs, and Gladiolus in very large quantities; and in vegetable seeds, Onions and Tomatos.

The founder of this establishment, Mr. James Vick, an Englishman by birth, a native of Portsmouth, died about two years since. The business is now conducted by his four sons, under the name of the eldest, Mr. James Vick, the practical head of the concern. *A. W. B.*

Irish Statistics.—The official returns for last year show that the acreage under Beans and Peas was about the same as the previous year. Potatos showed a decrease of 31,451 acres, Turnips an increase of 12,729 acres, Mangel Wurzel and Beetroot an increase of 1629 acres, Carrots, Parsnips, and other green crops about the same as the previous year; Cabbage 1000 acres less—the totals being for 1883:—

	Acres.
Beans and Peas	11,190
Potatos	805,467
Turnips	306,797
Mangels and Beet	37,945
Carrots and Parsnips	29,866
Cabbage	13,393
	1,205,660

The average produce per statute acre was:—Beans, 16.4 cwt.; Peas, 12.1 cwt.; Potatos, 4.3 tons; Turnips, 14 tons; Mangels and Beet, 13.9 tons; Cabbage, 9.5 tons.

Notices of Books.

Synoptical Flora of North America. By Asa Gray, LL.D., &c. Vol. I. Part II. London: Trübner.

Those interested in the botany of the United States and Canada, including therefore a large number of horticulturists, will be rejoiced to hear that a second instalment of Dr. Asa Gray's *Synoptical Flora* has just been issued.

The order of publication is peculiar, but justified by valid reasons, and in itself a matter of little moment in any but a few exceptional cases. In the year 1878 Dr. Gray issued a volume containing the systematic description of all the North American Gamopetalæ after Compositæ in the sequence adopted by Bentham and Hooker. In this manner the volume in question formed a sequel, so far as it went, to the imperfect *Flora of North America* of Torrey and Gray, which was brought to a standstill some forty years ago. "Torrey and Gray" contained an account of the Composites as then known, but it may readily be surmised that the knowledge of the present year is far more extensive than that of 1843. Hence the present volume, instead of carrying on the tale from the end of the Gamopets, works backwards, and takes in the Gamopetalous orders before Composites; and, what is of vast importance, includes a complete enumeration of the Composites themselves, including all the Canadian, all the Californian and Texan forms, in addition to those of the Atlantic States.

The two volumes, or rather parts, of the *Synoptical Flora* now published, thus contain a complete account of all the Gamopetalous orders, in itself no small contribution to a new *Flora* of the United States. We do not find any indication what is to be the future course—whether we are to look for the Polypetalæ, or to the Apetalæ and Monocots. In the meantime, so far as the Polypetalæ are concerned, we have already Mr. Sereno Watson's invaluable bibliographical index, a work the more useful from the very scattered condition of the literature.

Adverting to the volume before us, we may describe it as a large 8vo, full from cover to cover of descriptions of plants drawn up in that concise, yet lucid manner for which Dr. Gray has achieved so high a reputation. We may be assured that while nothing irrelevant is inserted everything that is essential is included. Here are no long disquisitions, morphological, physiological, or philosophical, but just simply the stern realities of facts. Of course the main interest centres in the Compositæ. Of these 1610 species are described, distributed through 237 genera. Fifty-nine of the species are not considered to be genuine natives but only naturalised. Among the genera in which cultivators are more especially interested, of Solidago seventy-eight species are described; of Aster 124, of Erigeron seventy-one, of Zinnias five, of Helianthus forty, of Coreopsis twenty-eight, of Artemisia forty-two. Aster, it may be some consolation to hear from Dr. Gray, "is far the most difficult of our genera, both for the settlement of the names of the species and for their limitation, in respect to which little satisfaction has been attained as the result of prolonged and repeated studies." If Dr. Gray deliberately writes thus after his life-long experience and the opportunities he has had in European gardens and herbaria, as well as in his own country, we need not take it much to heart if we are so frequently unable to give a name to the scraps sent by various correspondents at this season of the year to be named.

Under Helianthus tuberosus we find a brief statement of Dr. Gray's views on the so-called "Jerusalem Artichoke," concerning which, in spite of what has been published, the old fables still circulate. H. tuberosus, of which H. doronicoides is a synonym, occurs wild in moist alluvial ground from Upper Canada to Saskatchewan, and south to Arkansas and the middle parts of Georgia. It was cultivated by the Aborigines and the tubers developed." Dr. Gray mentions a dwarf variety with the lower surface of the leaves covered with white pubescence, as growing in Minnesota, Missouri, and elsewhere. It would be desirable to introduce this variety, and, indeed, any other that would contribute to the amelioration of this vegetable. Considering its productiveness, and the ease with which it may be grown, it is singular that so little attempt has been made to improve it. We gather from Dr. Gray that the wild plant varies a good deal, and some of these varieties might prove able to ripen seed in this country—a very rare occurrence, and one which doubtless has been the main reason for the little progress that has been made with it.

Criticism of such a book from such an authority would be impertinent; the proof of its utility and value will most assuredly be found in the frequency with which it will be referred to, and the reader who sees the care taken to assist him in his research, by means of carefully devised sectional marks, and a copious index, will hold the author in reverence, and pray that he may be spared to continue and complete a work, the value of which is beyond calculation.

The Plant-Lore and Garden Craft of Shakespeare. (Simpkin, Marshall & Co.)

We rejoice to see a second, and in some respects much improved, edition of this charming book, which appeared first in the form of communications to the *Garden*. Having already called attention to the charms and merit of the book, there is little left for us to say beyond this—that some errors have been corrected, and some valuable additions made, embodying the names of plants met with in various writers in the fifteenth and sixteenth centuries; an index showing in what plays particular species are mentioned, with fitting references, and other means of facilitating research, for which students of our great poet in general, as well as philologists and gardeners in particular, will be thankful.

Incidentally we may allude to the term Caryophyllus as applied to the Dianthus, from which our Carnation (or Coronation—*i.e.*, garland flower) is derived. Canon Ellacombe writes that the name Caryophyllus, or Nut-leaved, seems at first very inappropriate for a grassy-leaved plant, but the name was first given to the Indian Clove tree (Caryophyllus aromaticus), and from it transferred to the Carnation on account of its fine Clove-like scent.

What the precise application of *καρυοφυλλον* by the Greeks may have been we know not. Supposing it to have really been applied to the well-known spice, the form of the club-shaped bud, or "Cloves," may have suggested the name, while it may not be too far-fetched to suggest that its application to the Dianthus arose from the thick knots, or nodes (*καρύα*), which are so characteristic of the Pinks. At any rate this seems quite as reasonable as the alleged relation of the name to the perfume of the spice, and of the flower respectively.

Home Correspondence.

Rubus Chamæmorus.—Several of your correspondents have been writing as if this plant were very limited in its distribution, but Hooker in his *British Flora* gives as its habitat high regions in England, Scotland, Wales, and Ireland. In Scotland I have found it on the Ochils, which at no point are 2500 feet high, and on the Breadalbane Mountains I have seen it about half that elevation, so that it does not seem that there should be great difficulty in growing it in situations convenient for gathering the fruit. In the fourth edition of Loudon's *Encyclopædia of Gardening* it is given among the fruits deserving cultivation, the following being the remarks on it:—"'In Scotland,' Neill observes, 'the fruit of the Cloudberry is also called Roebuck berries, or Knot berries, and they are perhaps the most grateful and useful kind of fruit gathered by the Scots Highlanders. On the sides and near the base of the mountains it may be collected for several months in succession. It is not cultivated without difficulty, and it seldom yields its fruit in a garden. By raising from seed, and again from the seed of plants so raised, and so on for six or eight generations, perhaps at the same time crossing the flowers with those of the Bramble or Raspberry, in all probability this plant might become a valuable accession to the kitchen garden. Its berries are ripe in September. In Lapland and Sweden its fruit is much prized, and used for a great variety of purposes.'" I question if it would be worth cultivation in a garden, but it might be well worth introduction in waste places in the neighbourhood of one, and in the higher parts of the country I could point to not a few of such situations as seem suitable. It seems to require abundant moisture, and to prefer a peaty soil, although the latter is not necessary, as I have seen it on the face of crags in moist crevices. In Norway I have gathered it on the roadside, but nowhere unless moisture was abundant. Probably any information as to its successful culture would interest many of your readers; and other particulars regarding it would be welcome, to me at least. Why is it called Cloudberry? and did any one ever hear of it called by that or any other English name except by a botanist? I have read that it is the badge of the clan MacFarlane, but have no means of verifying this. In Norway I always heard it called by a name pronounced Mülter or Mültiboer, the correct spelling of which I do not know, and as the numerous English tourists who are regaled with Mültiboer accompanied with cream are very curious to know more about it, the next writer who attempts to give an account of travels in Norway might do worse than give the English or Latin equivalent of this and the other edible berries which abound there under such names as Hensiboer, Bringeboer, Crackleenboer, Blauboer, Blockboer, &c. He would at least have the merit of contributing some original information, which is more than can be said for most of the writers of tours in that country. *J. W. D.*

Single Dahlias.—It seemed to be impossible that any one, in looking over the single Dahlias shown recently at the Crystal Palace, should not be forced to the conclusion that the newer varieties are becoming far too large to be pleasing subjects for floral decoration. In the early days of the single forms, when we had coccinea, lutea, Paragon, and one or two more, they were small and neat, and could lay some claim to elegance. As an inevitable result of raising seedlings they have become large, coarse, and inelegant. This fact is becoming recognised, and they will soon cease to be as attractive as they once were unless our raisers will hark back to the beginning and content themselves with the smaller flowers of that period. It is a significant fact that out of the large number of new single Dahlias shown at the Crystal Palace not one was deemed worthy of a First-class Certificate of Merit. A stand of what are termed the stellate section was set up by Mr. T. S. Ware, and perhaps failed to attract the attention it deserved. But it was a group of very pretty and varied small flowered forms, just what single Dahlias should be if they are to hold their own in the matter of decorative usefulness. Mr. Ware's stand contained Little Bob, deep crimson, with maroon lines, very distinct and pleasing; Freedom, bright deep crimson; Elsie, clear orange-scarlet; May Andrews, pale orange-scarlet, with nicely formed broad petals; Bedding Gem, pale orange-scarlet, small and elegant; Ingomar, crimson, with pale bright purple tips; Gustave, pale yellow; Pantaloon Improved, bright pale rose, with basal side margins of maroon, and white tips; Magpie, in the same way, but with rather more rounded petals; and Merckii floribunda, a small white-flowered form. Two others had a marked individuality of character, viz.:—Dahlia Zimpani, with its rich shining maroon flowers, which can be found in some of the seed lists under the name of Bidens atro-sanguinea; and Galbraith, very pretty lilac-pink. The question arises, will these two last do well in the open air, under the same cultivation as that given to the ordinary single Dahlias? If so, then the varieties named above will prove a most excellent selection for cutting. But to succeed with the rich dark D. Zimpani, plants should be raised from seeds every year. Mr. Ware states that it will not grow in anything like satisfaction from propagated plants, and it is best therefore to sow seeds in early spring, which can be raised in an ordinary hotbed as in the way of seeds of the common Dahlias. If any one had compared the varieties forming this charming group with the immense flowers of the varieties shown in the classes for single Dahlias, they would have seen how much the latter suffered by the contrast. If it can be objected that the "stellate" Dahlias are not robust enough to be so generally cultivated as the more vigorous growing types, then let Mr. Ware or some one else turn his attention to raising small-flowered types of a sufficient strength of constitution to flourish in ordinary gardens. It cannot be too difficult of attainment since adventurous raisers are giving us Paragon Improved. It does not need improvement. No one could contemplate the exquisite flowers of this variety set up in the stand contributed by Messrs. J. Lamont & Co., of Edinburgh, and say it is capable of improvement. It is perfect in itself, and one does not wonder that it kept a place in catalogues some time after the double Dahlias begun to be improved by the florists of half a century ago. *R. D.*

Mr. Berberry's Early Peas.—In January last I had three parcels of these Peas from the above gentleman, distinguished thus:—Number One Pea, Early Bird, and Kenilworth Early. These were sown on March 16, and the first gathering of Early Bird was made June 3. It may be termed an early variety of William I. For an early Pea it is a capital cropper, the pods being well filled, and the flavour everything to be wished. Its colour is grassy-green. This Pea I can recommend as an improvement on the well known William I., being dwarfer and earlier by some four or five days. An accident

happening to the short row of number two, prevents me describing it accurately. Kenilworth Early I look upon as the best cropping early Pea of my knowledge. Although from one week to ten days later than Early Bird, it forms an excellent succession to to that kind. With me it grew 5½ feet high, and the pods literally hung from top to bottom. The colour of the Peas is a shade lighter than that of Early Bird, and it is of equal quality. If spared, I shall grow this Pea extensively. *R. Gilbert, Burghley.*

Market Gooseberries.—As evidence of the great popularity of one particular Gooseberry for market culture, the Lancashire Lad, I met the other day with a breadth of fine robust two-year-old plants numbering 40,000, all grown by a market gardener, either for his own planting or for sale amongst his neighbours. Large a number as that was, I found in another market garden close by quite as many more young plants of the same kind, and was assured that many thousands more were raised in the same neighbourhood. How well this Gooseberry thrives was evidenced in the splendid bushes, both young and old, growing all around. Some of the breadths probably could not be excelled in the kingdom, while the crops produced by them are always large, and occasionally enormous. The bushes endure a long time, and though pruning is essential, it chiefly takes the form of thinning, rather than spurring, as bushes hard pruned too often suffer severely in the season of spring frosts. I learn, too, that these vast breadths of young Gooseberry bushes were priced according to quality, ranging from 50*s.* to 100*s.* per 1000. The market growers prefer planting good two-year stuff to older plants, as establishing and forming stout heads quicker, and of course being at the time less costly. Even in standard fruit trees there is more favour shown to the planting of maidens to more established ones, as experience shows that the former eventually make the more profitable trees, whilst the cost incurred in laying down a big breadth of orchard is much less? *B. T.*

Early and Late Peas.—This season has indeed been trying for most kinds of Peas. This season when Early Sunrise and William I. were sown at the same time side by side, the latter came in eight days sooner than the former. Telephone came out well; still, its season was short. But so far as my experience of Peas goes this season I must give the palm to Watkins' Perpetual for hardiness, free-bearing, and good quality, and I never saw its equal for long duration. Its yield is equal to three-fourths of the pods when shelled, and it was in season for two months with me. I find the plan of mulching liberally a good one, and would recommend those who have not tried it to do so, as one of the best means of extending the bearing period, more particularly in a dry season like the one we have just passed through. Perhaps I may add that Watkins' Perpetual is, so far as I have observed, a good medium or late wrinkled marrow Pea, about 3½ feet high, with generally ten Peas in each pod, when well cultivated; it is very sugary in flavour, and the pods full almost to bursting. I shall give this Pea the first place as a main crop another season. I am not interested in putting this Pea forward; only from what I have found as a grower for market it is a very trustworthy sort. *R. C. E. H., Harleston, Norfolk.*

Violets and Wallflowers.—Though Londoners are well accustomed to see large quantities of bunches of these sweet-scented spring flowers at every street corner when in season, and wayfarers on those highways have admired the rich colouring and pleasant perfume emitted from large piles of Wallflowers in bunches sent into market, yet perchance few give a thought to the very important industry the production of these two kinds of simple flowers represent. I was but the other day favoured with a look through a 20-acre orchard full throughout above with standard trees of Apples, Pears, and Plums, and below solely with Wallflowers in the proportion of about two-thirds, and the rest of Violets. Even this large extent did not nearly represent the area this one grower had of these under cultivation, for occupying some 100 acres altogether, the greater portion under fruit, it is most probable that nearly 40 acres altogether are devoted to these two kinds of flowers alone. It is worthy of comment that whilst vegetables will often become a drug in the market, just as Runner Beans have been and Potatos are now, and top fruits as often fail as succeed, yet that these flowers not only always sell fairly well, but also seldom, perhaps never fail. Grown beneath dense overhanging trees where little else would thrive, they are sheltered from fierce biting winds and frosts in winter and burning sunshine in the summer. Then the falling autumn leaves protect and nourish, and early in the spring flowers come freely. Then comes in a small army of women to gather and bunch them, and as large a number find profitable employment dispensing them to the public in our huge metropolis, and other large towns and cities. *B. T. D.*

COTTAGERS' FLOWER SHOW AT STRETFORD.

AN interesting cottagers' flower show was recently held in the Town Hall, Stretford. The promoters of the exhibition were Mr. and Mrs. Rylands, of Longford Hall, who also awarded prizes to the successful competitors. The arranging of the plants in the hall was under the superintendence of Mr. Smith, head gardener at Longford, who must be complimented upon the artistic manner in which the work was carried out. In the middle of the room was a large group of exotic and other plants from the conservatory of Mr. Rylands. In the centre of these a fountain sent up sparkling water, which fell in gentle showers upon Ferns, flowers, and Ivy. On either side of the room were the exhibits of the cottagers. The specimens for the most part were very good, and bore evidence of both skill and attention on the part of the growers. Another interesting feature of the show was the children's exhibits. These were from children between six and fourteen years, and consisted chiefly of Ferns, Pelargoniums, Mignonette, and Musk. Mr. Bruce Findlay, of the Manchester Botanical Gardens, who acted as one of the judges, addressed the exhibitors and visitors prior to the distribution of the prizes. He congratulated the exhibitors upon the excellent exhibition they had brought together. Exhibitions of that class could not but be beneficial to the humbler classes of society. The subject of cottage gardening was one pregnant with interest, and had from time to time engaged the attention of many eminent men. The late lamented Prince Consort did all in his power to promote and encourage it amongst the tenantry on the royal estates. The late Lord Beaconsfield used to speak about it to the cottagers residing in his neighbourhood, and only a few days ago Mr. Gladstone made a most interesting speech on the subject, and expressed a wish that each cottager could have a small plot of ground upon which he could grow his vegetables and flowers. Whatever related to the improvement of the soil and its profitable appropriation was of the very highest importance. It was well known that the agricultural labourers of the country had not the same interest in the soil as they once had. Every village and district of the country readily afforded examples of patches of land having been consolidated with a larger tract belonging to some wealthy person in the neighbourhood. This, of course, owing to a variety of causes, was inevitable. Still, the decay of the cottar tenantry was an evil which had been always insufficiently appreciated. There could be no doubt whatever that, where practicable, it was consistent with sound policy to let the English labourer have a small share of the land. History spoke loudly on this point, and traced the melancholy fate of the most powerful empires and states in some degree to the cutting off of every particle of the soil from those who were closely attached to it. Various schemes had been propounded having for their object the improving of the condition of the agricultural labourer. Many of these seemed to be incompatible with his capacities, whose powers were altogether centred in the soil and in sowing and reaping its products. Some there were who had condemned the allotment system as Utopian. Inconsiderate friends, again, in talking and writing about it had pronounced it to be the realisation in a great measure of the state of perfect existence which poets had sighed for, and that which would sooner or later prevail. But poets as a rule were but ill qualified judges of what was practically beneficial, and in the allotment system there was no poetry except that which springs from hard work. If anything would "possess the land" it was hard work. If anything would deepen the green hue of our crops or cause them to grow more luxuriantly it was the contents of the manure tank judiciously applied. If white and trim cottages were to rise in the wake of the industrious, as they usually did, it would be difficult to find a reason why they should not in the case of those systematic workers who laboured in their own allotments; and it was mere folly to connect the results with aught except the sweat of man's brow, and the important accompaniments of forethought and skilful management. Those who expected to see every man enjoying himself "under his Vine and Fig tree" were sadly mistaken. The allotment system itself would throw out thousands as unworthy to touch the soil which it had appropriated to its most useful purposes. Vegetation was stirring either in a right or wrong direction every hour of our life. Of what use, therefore, would sluggards prove in directing such a power, or any people who hate work? The scheme of allotments has been urged as an excellent means for the relief of poverty, and as the best school for the rising generation belonging to country labourers; but in semi-suburban districts like Stretford the scheme is altogether impracticable. It is a subject which has occupied the attention of almost every writer on political economy. Various have been the opinions expressed, both in and out of Parliament, respecting the benefits to be derived by the poor man from these allotments. Undoubtedly there would be different degrees of success according to the systems adopted by the respective landlords, as well as according to the attention paid to them by both parties.

Mrs. Rylands afterwards distributed the prizes, and a hearty vote of thanks was given to Mr. and Mrs. Rylands for their kindness, to which Mr. Rylands responded.

Reports of Societies.

Royal Horticultural: *Sept.* 9.—The thousands of unmistakable country people who crowded the National Health Exhibition on this day must have been delighted with the unexpected and beautiful display of Dahlias provided so generously for their delectation by our leading growers of this popular flower. The announcement in these pages on Saturday last, that Mr. Charles Turner, of Slough, would present on Tuesday, at South Kensington, a big show of Dahlias, naturally excited emulation, and as a result we found in the conservatory one of the finest and most varied shows of Dahlias probably ever seen in that building. Mr. Turner was himself to the fore with a grand lot of show and fancy blooms, singularly perfect, and naturally attracting much attention. Amongst the show flowers such kinds as Mrs. Gladstone, delicate soft flesh; Lady Wimborne, bright rosy pink; Lord Chelmsford, crimson; Mrs. Jeffery, rich yellow; Julia Wyatt, creamy white; John Standish, fine bright red; Sunbeam, reddish-buff; Condor, orange-buff; James Vick, maroon-purple; Jas. Stephen, orange-red; Chris. Ridley, scarlet; and the Rev. J. Goodday, fine rich crimsom-maroon, were amongst some of the most noteworthy, and make a first-class selection. Of fancy flowers there were Gaiety, and a reddish-carmine sport from that charming kind; Mrs. Saunders, Miss Lily Large, Rev. J. B. Camm, Professor Fawcett, Peacock, Charles Wyatt, and Grand Sultan, all beautiful. Colours and markings in many of these fancy flowers are very difficult clearly to describe. The only need to gratify a taste for variety is found in more tipped flowers of the style of Mrs. Saunders and Fanny Sturt. In bouquet and single Dahlias Mr. Turner is ever strong, and his style of setting them up is now generally copied. Of the bouquet forms, singularly good were Fair Helen, white tinged with lilac; Hedwig Polwig, orange-scarlet, white tip; Nemesis, dark maroon, tipped with white, very distinct and beautiful; Isabel, bright scarlet; Lady Blanche, the best white; Little Duchess and the Khedive, deep crimson. Of singles, very distinct and effective were Queen of Singles, rich magenta, one of the very best; Dorothy, white shaded rosy peach; Duchess of Westminster, one of the purest whites; Ellen Terry, rosy-flesh; Scarlet Defiance, intense orange-scarlet; and Acquisition, crimson, with scarlet bars at the edges of the petals. Messrs. Keynes, Williams & Co., Salisbury, put up a large number of grand show and fancy flowers, including the very striking certificated fancy General Gordon, and the novel and finely formed Mrs. Langtry. Amongst large-flowered kinds were Prince Bismarck, puce shot with purple, very fine; Hugh Austin, orange-scarlet, fancy; George Barnes, rich lilac, striped crimson; Frederick Smith, deep lilac striped with purple; Henry Glasscock, buff-crimson, striped; Fanny Sturt, red tipped white; Flora Wyatt, orange flaked red; Senator, shaded purple; and Mrs. Gladstone were very striking and beautiful. These bouquet forms included such finely formed kinds as Gem, scarlet; Darkness, nearly black; Golden Gem, yellow; E. J. Jungker, fawn; Peasant Girl, rosy-crimson; and Lady Blanche, white. Their singles included a very beautiful selection in Victory, scarlet; Striata, crimson flaked; Bertha, mauve; Volunteer, scarlet flaked; Negress, maroon-crimson; and Mauve Queen. A large box of the scarlet and white

Cactus Dahlias intermixed was very effective. Messrs. H. Cannell & Sons, Swanley, well maintained the growing reputation of their firm in association with Dahlias, showing a fine and interesting collection, including many first-rate show and fancy flowers. Of these we would enumerate W. H. Williams, bright scarlet, fine form; James Cocker, crimson; J. W. Lord, reddish-chestnut; W. Rawlings, maroon-purple; Cardinal, scarlet; Mrs. Dodds, delicate rose; H. Glasscock, crimson-scarlet; and of fancies, Mr. W. Cannell, Grande Duchesse, Professor Fawcett, Hercules, and Lotty Eckford, as superb flowers. Singles were here again a prominent feature, and effectively set up, including Firefly, intense scarlet; Golden Gem, yellow; Othello, deep crimson; J. Douglas, rosy purple; Victoria, brilliant crimson-scarlet; and Queen of Singles. Of bouquet forms very elegant were Louisa Richter, flesh; Fire of Joy, scarlet; Favourite, deep crimson; Professor Bergeat, rich crimson; Little Dear, white heavily flushed with purple; and Lady Blanche. The collection also included some attractive forms of the Cactus Dahlia, a very prominent one being Picta formosissima, red, edged with scarlet; Imperial Prince, loose form, colour purplish-crimson; and Cochineal, crimson-scarlet; also the green Dahlia, and many interesting forms. Messrs. Cheal & Sons, Crawley, Sussex, made a fine display, having show, bouquet, and single Dahlias in great variety. Their singles were exceedingly attractive, and included Grandee, large, a striking bluish-maroon flower; Formosa, rich scarlet, fine form; Edith, fresh, threaded carmine; Mrs. R. S. Walker, primrose flaked red; Fashion, rosy-red, edged white; and Mexicana, reddish-carmine. Messrs. Ware & Sons, Tottenham, had a beautiful show of single flowers divided into the large flowered and the small or stellata sections, the latter being specially charming for bouquets. Of the former this firm had very pleasing kinds in Lucy Ireland, rosy-magenta, next to Queen of Singles, one of the best of its colour; Nellie Ware, crimson-magenta; Mrs. Castle, reddish-carmine; Ellen Terry, pale mauve; Victor Strandberg, very rich scarlet; and Mrs. Bowman, rosy-lake. Messrs. Rawlings Bros., Romford, showed some good large-flowered Dahlias, and Mr. J. Henshaw, Harpenden, had a collection of very pleasing bouquet kinds, most of which have been already mentioned above.

FLORAL COMMITTEE: *Section A.*—Present: Dr. Masters, in the chair; Messrs. Hill, O'Brien, Dominy, H. Williams, Ballantine, Herbst, Fraser, and Kinghorn.

The subjects brought before the section were, Amasonia punicea, a verbenaceous shrub from Brazil, with opposite oblong, serrate, deep-green glabrous leaves, and long erect spikes of flowers, with ovate lanceolate red persistent bracts, red 5-parted calyces, and tubular cream-coloured corollas like those of a Clerodendron, and with projecting curved stamens as in that genus. A First-class Certificate was awarded to Messrs. Veitch for this plant, which will probably prove a handsome stove plant, particularly as the red bracts remain on the shrub for several months. Nephrolepis Bausei, exhibited by the same firm, is alleged to be a form of N. pluma, with lanceolate, bipinnate, erect fronds, 1—2 feet in height, yellowish-green; the pinnæ are sickle-shaped, obtuse, narrow, and serrulate.

Piper ornatum is a stove climber, with fleshy, peltate, ovate acute leaves of a shining green colour, marbled with cream-coloured variegation. Probably, when more fully developed, its merits will be more evident than now.

From Messrs. Carter & Co. came a Croton named Bealei, with oblong acuminate leaves, yellow blotched with red, but which in view of the large numbers of forms as good or better failed to obtain an award. From Mr. W. Allan, gardener to Lord Suffield, came fine samples of the white Lapageria, to which a Cultural Commendation was adjudged.

Amaryllis Mrs. W. Lee, shown by Mr. B. S. Williams, obtained a First-class Certificate. The leaves are erect with a central white stripe, the flowers in a truss of five or six, funnel-shaped, whitish, with a reddish-violet reticulation. It has the character of being a constant bloomer. From Mr. King, of Rowsham, came plants of Coleus Major Kitchener, curiously spotted in the way of Harlequin and General Gordon, a form with large leaves, partly reddish-lilac partly yellow. From the same exhibitor came a series of leaves of various forms of Coleus, to which a Vote of Thanks was awarded.

From Sir N. Rothschild's garden (Mr. Hill, gr.) came a fine specimen of Cattleya gigas, with the magenta coloured lip provided with two large side blotches of yellow. To this very handsome variety, previously certificated, a Cultural Commendation was adjudged.

Lieut.-Col. Deare sent a spike of Saccolabium violaceum, while from the garden of Baron Schröder (gr., Mr. Ballantine) came a fine example of the very striking Aërides Lawrenciæ, with very large waxy flowers, the tips of the perianth segments tipped with violet, and with a broad deep violet process in front of the lip, just in front of the opening to the spur, and doubtless offering an attraction to insects by guiding them to the stores of honey in the spur.

FLORAL COMMITTEE: *Section B.*—Present: Shirley Hibberd, Esq., in the chair; W. Bealby, G. F. Wilson, J. James, J. Child, H. Bennett, H. Turner, H. Cannell, Geo. Duffield. A Vote of Thanks was also awarded to the New Plant and Bulb Company of Colchester for some pretty bunches of the flowers and foliage of Montbretta crocosmæfolia aurea. Mr. Allen, gr., Gunton Park, showed some very floriferous shoots of Lapageria alba and L. rosea.

G. F. Wilson, Esq., Wisley and Weybridge, received a Vote of Thanks for specimens of Lilium speciosum, grown in the open air, showing the high tints these Lilies take on when so cultivated. Mr. W. H. Counsell, Shenley Villa, Streatham, S.W., showed a good Lilium auratum carrying twenty-five blooms, having been grown in a 48-sized pot. Messrs. Cannell & Son were awarded a Vote of Thanks for a stand of varied double Begonia blooms, that showed well the advance this species is now making. A very bright crimson single-flowered Begonia, named Total Eclipse, came from the Swanley nurseries. A Vote of Thanks was awarded Mr. Tibbles, Harlesden Park Nurseries, for a new seedling Pelargonium, named Queen of England. The colour was very pure, and the form fairly good.

Two handsome plants of Ananassa sativa variegata, bearing fruit, were shown by R. H. Alexander, Gifford House, Roehampton. If this plant were better known, it would take the place, for indoor decorations, of Pandanus javanicus variegatus, and P. Veitchii. It suffers much less than these from cold, dust, and confined air.

FRUIT COMMITTEE.—Present: John Lee, Esq., in the chair; W. Paul, Jas. Smith, A. Howcroft, Geo. Bunyard, A. Sutton, John Burnett, J. Roberts, Dr. R. Hogg.— Amongst the few specimens of fruits brought up for inspection was a good collection of Apples, fifty-three sorts, and eight sorts of Pears, by Messrs. Cheal and Sons, Crawley. These were of nearly all seasons, and consequently were all not equally matured, nor were they so highly coloured as the bright character of the later summer months would lead one to suppose would be the case. Their certificated kind of Apple, Jacobs' Strawberry, is a fruit above medium size, smooth, and of a crimson and yellow colour.

Messrs. W. Paul & Son, Waltham Cross, had fifty-six dishes of well-known kinds of Apples, of good average quality. Mr. R. Gilbert, gr., Burghley, Stamford, showed Andrew Barnack's Pride Apple, a nice-looking Russet, and also a sample of his early white Celery. Mr. Bennet, gr., The Deepdene, showed a large culinary Apple named James Dewdney. Mr. H. Ricketts, 2, Hawthorne Villas, Stroud, showed some Lapstone-like seedling Potatos, now in their fourth year. They were named Gloucestershire Hero—an unfortunate cognomen, seeing there is another kind well known with almost the identical name.

Some Melons were brought, but apparently there was nothing amongst them worthy of special notice. Mr. T. Bowie, Chillingham Castle Gardens, sent a red Currant named Red Defiance, which was considered to be identical with Houghton Castle.

The awards made were—

FIRST-CLASS CERTIFICATES.

To Messrs. Veitch & Sons, Chelsea, for Amasonia punicea.

To Messrs. Veitch & Sons, Chelsea, for Nephrolepis Bausei.

To Mr. B. S. Williams, Upper Holloway, N., for Amaryllis Mrs. W. Lee.

To Mr. Bealby, for Begonia Madame Crousse.

To Baron Schröder (gr., Mr. Ballantine), The Dell, Egham, for Aërides Lawrenciæ.

To Messrs. Kelway & Son, Langport, for Gladiolus Sir Francis Bolton.

To Messrs. Kelway & Son, Langport, for Gladiolus Wm. Kelway.

To Messrs. Geo. Bunyard & Co., Maidstone, for Jacobs' Strawberry Apple.

To Messrs. Cannell & Son, Swanley, for Begonia Octavia.

Crystal Palace Fruit and Dahlia Show.—The fruit show was certainly a great success, whether looked at from the point of quality as seen in the exhibits themselves, or in point of the numbers of dishes set up. The quality of the Grapes of all kinds was quite up to the average of what is seen at the best exhibitions in any part of the kingdom. Peaches and Nectarines, presumably in the majority of instances from trees on open walls by their highly coloured and ripe appearance, quite put to rout those weather prophets who had been foretelling the utter end of Peach growing in the open in England. No finer fruit in those classes could have been seen in any land, fruits of Lord Palmerston, Late and Walburton Admirable, Sea Eagle, Princess of Wales, Belle Beauce being of a remarkable size. In Mr. T. Rivers' lot of Nectarines, raised at Sawbridgeworth, was seen a most instructive exhibit. These fruits, which were exhibited in one dish of each kind (thirteen), and being placed altogether, were very handy for purposes of comparison. Several showed Pitmaston Orange origin as one of the parents in the higher tints of yellow and crimson, and a few seemed to point to Elruge in the varnished look of their skin; all were well grown and of high colour, the largest being Goldoni, Humboldt, Lord Napier, Pine-apple, Byron, Newton, Dryden, and Seedling No. 34. Some very fine examples of Pears came from the same nurseries, amongst which were noticed as being particularly fine for English fruit Princess, Clapp's Favourite, Souvenir du Congrès, Madame Freyere, and Durondeau. Of Pine-apples not many were shown, and nothing very large amongst those.

OPEN CLASSES.—For the best collection of fruit of not less than twenty-four dishes Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, was awarded the 1st prize. The sorts were—Grapes: Foster's Seedling, fine in bunch and berry, but lacking the liquid golden tint; good Black Hamburghs, and Madresfield Court, and exceptionally fine Muscat of Alexandria. Peaches: Barrington and Prince of Wales. Melons: Golden Gem and Bailey's Greenflesh. Strawberries: the improved alpine variety, Les Quatre Saisons. Plums: Jefferson and Pond's Seedling. Nectarines: Victoria and Pitmaston Orange. Pear: Bon Chrétien. Cherry: Morello, very good. Gooseberry: Warrington. Filberts, Currants, Figs, Apricots, two average sized Pines, and some Apples. There being no other competitor 2d and 3d prizes were unawarded. In the competition for the best collection, to consist of twelve dishes, there were four staged: 1st, Mr. J. Roberts, gr. to Baroness Rothschild, Gunnersbury Park, Acton, W., his fruit being a good Queen Pine-apple, Melons Golden Perfection and Wm. Tillery, the latter a very fine fruit; highly coloured Sea Eagle Peaches, large Bon Chrétien Pears, Humboldt Nectarine, Madresfield Court Grapes, large in berry and bunch and unexceptionally coloured; Muscat of Alexandria, equally good; Jefferson Plums, Les Quatre Saisons Strawberry and Morello Cherries. Very little removed in point of merit was the collection set up by Mr. Blair, gr. to Sir G. B. Middleton, Bart., Shrubland Park, Needham Market, which was awarded the 2d prize. In this were an excellent Smooth Cayenne Pine, Royal Ascot Melon, Bon Chrétien Pears, some very large Granadilla fruits, and Barrington Peaches. Mr. Goodacre was 3d, his Peaches, Muscat of Alexandria, Morello Cherries, and Bon Chrétien Pears being very fine. Mr. Waterman, gr. to A. Brassey, Esq., Preston Hall, Aylesford, likewise competed in this class. For the collection of eight dishes, white and black Grapes being reckoned as distinct varieties, the 1st prize was taken by Mr. G. T. Miles, gr., Wycombe Abbey Gardens, who had a fine fruit of a Queen Pine-apple of the weight of 6 lb. 3 oz., but not quite ripe, Pine-apple Nectarine, very superior Madresfield Court Grapes, as were likewise the Muscat of Alexandria Grapes in his lot; Stirling Castle Peaches. Brown Turkey Figs and Hero of Lockinge Melon complete the list. 2d, Mr. H. G. Oclee, gr., Bleckling Hall, Aylsham, in whose collection the Madresfield Court Grapes, Pitmaston Orange Nectarines, Lord Palmerston Peach, and Bon Chrétien Pears, were of more than ordinary merit. No. 3 prize was awarded for ten kinds of Grapes, to consist of six black and four white.—The 1st prize was awarded to Mr. J. Roberts, whose sorts all showed the highest marks of good culture. The sorts were Gros Maroc, of the usual irregular form in bunch, and with immense berries; Alicante, large in berry, and medium sized as to bunch; Gros Colmar, a medium sized bunch, but berries of a great size, and grandly coloured; Black Hamburgh, Madresfield Court, very large in bunch and berry; Alnwick Seedling, Foster's Seedling, very fine in every way; Muscat of Alexandria, Trebbiano, and Buckland Sweetwater. 2d, Mr. Woodbridge, gr., Sion Gardens, Brentford, in whose collection the Muscat of Alexandria, Lady Downe's, and Foster's Seedling Grapes were particularly fine examples, especially the first named kind; Alnwick Seedling was also observed to be in nice order. For the 3d prize the competition failed. In the class for the best five kinds, two of them being white Grapes.—1st, Mr. G. T. Miles, whose Madresfield Court and Black Alicante varieties being the best in the collection; 2d, Mr. J. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, Acton. This lot ran the 1st very close indeed, the kinds Alnwick Seedling, Madresfield Court, and Muscat of Alexandria being particularly good samples. 3d, Mr. A. Smith, gr. to W. H. Sewell, Esq., Warren Hill, Loughton, Essex. The kind Gros Colmar was very fine in bunch and berry in this lot. For the best three bunches of Black Hamburgh Grapes, 1st, Mr. T. Moorhouse, gr. to J. W. Temple, Esq., Leyswood, Groombridge, Tunbridge Wells, whose fruits were very superior in all respects; 2d, Mr. J. Roberts, with bunches that were rather smaller and less compact; 3d. Mr. Frank Jordan, gr. to Birket Foster, Esq., The Hill, Witley, Godalming. For the best three bunches of Muscat of Alexandria.—1st, Mr. G. Middleton, gr. to R. Pilkington, Esq., Ramford Hall, St. Helen's. These Grapes were the most admired productions of the vinery to be seen in the show, for bunches of a richer colour or more perfect in all points have not been seen for a long period. 2d, Mr. J. Woodbridge, with examples good enough to please any one who had not seen the winning bunches; 3d, Mr. J. Hudson. For the best three bunches of Gros Colmar Grapes.—1st, Mr. J. H. Goodacre, with massive bunches of a splendid tint, and large of berry even for that kind. This was the only dish put up in the class. For the best three bunches of Madresfield Court variety.—1st, Mr. J. Woodbridge; 2d, Mr. F. Jordan; 3d, Mr. J.

H. Goodacre, all of the exhibited fruit being of capital quality. For the best three bunches of Alicante Grapes.—1st, Mr. W. Howe, gr. to H. Tait, Esq., Park Hill, Streatham Common, with broadly shouldered bunches of finely coloured big-berried Grapes; 2d, Mr. H. Folkes, gr. to T. F. Halsey, Esq., M.P., Gaddesden Place, Hemel Hempstead; 3d, Mr. C. Forbes, gr. to E. Bird Foster, Esq., Anstey Hall, Trumpington, Cambs. For the best three bunches of any other white kind.—1st, Mr. J. Woodbridge, with Golden Champion; 2d, Mr. H. Folkes, with Golden Queen; 3d, Mr. J. J. Lowry, gr. to J. McAndrew, Esq., Belmont Hill, Hendon, with Foster's Seedling. For the best three bunches of any sort of black Grape.—1st, Mr. J. Hudson, with Alnwick Seedling; 2d, Mr. T. Moorhouse, with Lady Downe's; 3d, Mr. W. Wills, florist, Earlswood, Redhill. For the best four dishes of Peaches.—1st, Mr. C. Haycock, gr. to Roger Leigh, Esq., Barham Court, Maidstone, who had very fine Walburton Admirable, Bellegarde, Lady Palmerston, and Barrington, all of excellent colour, excepting the first-named sort; 2d, Mr. Oclee, whose Desse Tardive was worthy of notice; 3d, Mr. Thos. Blair. For the best four dishes of Nectarines.—1st, Mr. M. Hanagan, gr. to R. C. Naylor, Esq., Hooton Hall, Chester, who had large highly coloured examples of Boston, Pitmaston Orange, Pine-apple, and Rivers' Orange; 2d, Mr. H. G. Oclee; 3d, Mr. C. Haycock. For the best single dish of Peaches.—1st, Mr. C. Haycock, with Walburton Admirable, three fruits being finely coloured and very large, the other three very pale; 2d, Mr. T. Blair, with Barrington; 3d, Mr. A. Gibson, gr. to T. F. Burnaby Atkins, Esq., Halstead Place, Sevenoaks. For the best dish of Nectarines.—1st, Mr. G. Holliday, with Pine-apple; 2d, Mr. G. T. Miles; 3d, Mr. A. Gibson. For a collection of six kinds of Peaches and six of Nectarines, four fruits of each.—1st, Mr. J. Roberts; 2d, Mr. C. Haycock. Mr. J. H. Goodacre was 1st for a green-flesh Melon, and Mr. J. Neighbour, Bickley Park, Kent, was 1st for a scarlet-fleshed Melon. Mr. Neighbour was also placed 1st for a collection of four distinct kinds of red Plums, and 1st for a collection of four distinct kinds of yellow or green Plums, and Mr. Goodacre was 1st for purple Plums, consisting of four dishes. For two dishes of Figs, Mr. John Wallis, gr. to Rev. W. Sneyd, Keele Hall, was 1st, with Brown Turkey and Brunswick varieties. For the best basket of black Grapes, of not less than 12 lb.—1st, Mr. J. Hudson; 2d, Mr. W. Howe; 3d, Mr. Waterman, gr. Preston Hall. For the best basket of white Grapes.—1st, Mr. G. Middleton; 2d, Mr. C. J. Goldsmith, gr. to C. A. Hoare, Esq., Kelsey Manor, Beckenham; 3d, Mr. W. Wallis. Mr. Haycock took the 1st prize for the best collection of Apples, Mr. Waterman the 2d, and Messrs. G. & J. Lane, nurserymen, St. Mary's Cray, the 3d. Mr. Haycock took the 1st prize for a collection of Pears. For three dishes of ripe Apples the 1st prize was awarded to Mr. Waterman; 2d, Messrs. G. & J. Lane. Mr. Waterman took 1st for three dishes of ripe Pears, Mr. Goodacre 2d, and Mr. J. Neighbour the 3d. For the best collection of fruit competed for by fruiterers the 1st and only prize awarded went to Mr. Geo. H. Wingfield, 37, Market Place, Brighton. An extra prize was awarded to Messrs. Cheal & Sons, Leonardslee, Crawley, for a collection of fruit, consisting of Apples, Pears, Plums, Crabs, and a solitary sample of an American Blackberry, which seemed to be a prolific variety. Mr. J. Neighbour received an extra prize for a collection of Plums, Nectarines, Cherries, Apples, Melons, Tomatos, &c. Messrs. Paul & Son, Cheshunt, received a similar award for a large collection of Apples. Mr. J. Walker, nurseryman, Thame, for some well-grown Oranges and Lemons, a green Grape, and some large variety of red Currant. Mr. Spinks, nurseryman, Horley, had an extra prize for a collection of Melons, as did Messrs. T. Rivers & Son, Sawbridgeworth, for their collection of fruit.

CUT FLOWERS (OPEN).—Prizes were offered for a collection of Gladiolus spikes, not less than thirty-six varieties, which brought out some magnificent specimens of these beautiful autumn flowers. As usual, Messrs. Kelway & Son, of Langport, put up a splendid collection of 120 spikes, but they were not for competition; if they had been Messrs. Kelway would have been beaten by a collection from Scotland, staged by Mr. Alex. E. Campbell, of Cove Gardens, Gourock. Probably a better collection was never seen in London. There were 120 spikes, exceedingly well set up; and such spikes! The best of them were 26 inches in length, and had from ten to twelve flowers open at one time; a selection of the best comprised De Mirbel, a fine rose, with ten open flowers; Sylvia, very fine; Clemence had a spike 26 inches long; Giganteus, richly coloured rose, with twelve open flowers; Camille, a splendid spike, a lilac flamed and feathered dark lilac; Archduchess Maria Christina; Anna, a tinted orange; Ambrose Verschaffelt, a white ground flower; Madame Desportes, Amalthea, Horace Vernet, very fine rich crimson; Lafayette, a distinct hybrid form, pale yellow, with crimson blotch on the lip—it is of the G. purpureo-auratus type; Bicolore, red, with a distinct white blotch on the lip; Maréchal Bazaine, light scarlet, white lip; Penelope, reddish-fawn; Gloire de Fontainebleau, pale rosy-purple, with a peculiar whitish suffusion; Carnation, very fine. In Messrs. Kelway's non-competing collection were some good seedlings, to one of which, Lord Wolseley, fiery red, with deep lake centre, a First-class Certificate was awarded. The other two competitors, Messrs. Harkness & Son, Bedale, Yorkshire, who were 2d, and Mr. W. Oates, gr., Wighill Park, Tadcaster, confined their exhibits to thirty spikes only, but they both had good spikes, though a long way after the 1st prize lot. In the amateurs' class for twelve Gladioli spikes Mr. W. Oates gained the 1st prize, and Mr. H. Cattley, of Bath, the 2d. Quilled and French Asters were well shown by Messrs. Saltmarsh & Son, of Chelmsford, Mr. Hooper, of Bath, and Mr. Cattley. The first-named exhibitor, who gained 1st prizes in each of the sections, kept nearest to the schedule in exhibiting the greatest number of varieties, although Mr. Hooper's flowers, which were placed 2d, were slightly better. Hollyhocks, exhibited in the form of single blooms, were remarkably fine, the blooms large, and in fine condition. In the open class for twenty-four blooms Mr. G. Finlay, gr. to Mrs. Maynard, East Leyton Hall, Darlington, was 1st, a large proportion being seedlings; Messrs. Harkness & Sons were 2d, with well-grown flowers which had been slightly injured in transit.

Mr. Finlay was the only exhibitor in the amateurs' class, and gained the 1st prize. Mr. James, of Castle Nursery, Lower Norwood, was the only exhibitor of stove, greenhouse, and hardy flowers in a cut state; but he had a really good collection, to which the 1st prize was awarded. Anthurium Andreanum, red and white Lapageria, Saccolabiums, the pretty pale blue Plumbago capensis were most conspicuous. Other cut flowers comprised Pentas carnea, Verbenas, and Zinnias; but they were very poor. Messrs. J. Laing & Co, of Forest Hill, were the only exhibitors of a group of tuberous Begonias, but it was such a group as only these well-known growers of these flowers could produce, and First-class Certificates were awarded to a selection of the best new kinds. Jules Lequin, Goliath, Erecta superba, and Emile Galle were the four selected for this honour. It was a good idea to offer prizes for a group of early flowering Chrysanthemums (Chrysathemum indicum). Mr. N. Davis, of Camberwell, and Mr. W. Piercy, of Forest Hill were the only competitors, and took the prizes in the order of their names.

The miscellaneous groups of plants were an important feature. At the entrance to the tent a fine collection of Lilium auratum from Mr. Turner, of Slough, was conspicuous; adjoining it was a miscellaneous collection of plants from Messrs. Cutbush, of Highgate. In the centre, Messrs. Cannell, of Swanley, had arranged a group with excellent taste; it contained cut flowers of double Begonias, and some quite unique Dahlias, garden varieties principally—Constance, a fine white kind which is much valued; Germania nova is the most distinct in its deep rosy-lilac colour and peculiarly notched petals; Mr. Tait is really the white Cactus Dahlia; Picta formosissima is distinct and remarkable in its scarlet and gold tints; Cochineal, crimson; Mr. Miller, fancy, tipped; and the green flowered Dahlia is amusing in its quaintness. Messrs. Paul & Son, of Cheshunt, had a collection of hardy flowers; Messrs Paul, of Waltham Cross, some fine Roses. Cut flowers, and a good collection of plants came from Mr. James.

THE GRAND NATIONAL DAHLIA SHOW was held in connection with this exhibition, and it was certainly worthy of its name. The hot weather had been very trying to the exhibitors in the Southern districts. The flowers opened as if by magic when the weather was hot, and those who had not a reserve of later-flowering plants to fall back upon found the best of their flowers past on the day of the show. Thrips were also very troublesome. This tiresome pest could not be restrained even with daily syringing the plants, and watering them freely. Indomitable perseverence overcomes the most stubborn obstacles, and thus the leading growers were enabled to place their flowers in something like first-class form. The trade classes were not so well filled as they ought to have been, but the amateurs made up for it. Not less than nine collections of twenty-four distinct blooms were staged of the show varieties, while eight competitors came forward to claim the prizes in the class for twelve distinct fancies. There is always some little excitement when the best show and fancy single blooms are being selected. There was little difficulty in finding the best show Dahlia. A splendid bloom of Mrs. Gladstone in Mr. Glascock's collection had been noticed from the first, and it was ultimately selected as the queen amongst them all; while General Gordon, a new variety, shown for the first time by Messrs. Keynes, of Salisbury, was chosen as the best fancy. Mrs. Gladstone was sent out last May by Mr. Turner, and General Gordon will probably be sent out next spring by Messrs. Keynes. Who can say after this that there is no room for improvement in the Dahlia? The most successful competitor was Mr. Turner, of the Royal Nurseries, Slough. He gained the 1st prize in the class for forty-eight distinct show varieties (open), with a very even lot of blooms of large size, and in fine condition; they were the Rev. J. Goodday, Mrs. Gladstone, Lord Chelmsford, Constancy, Burgundy, Lady Wimborne, Herbert Turner, John Wyatt, Ethel Britton, William Rawlings, Mrs. Harris, Ruby Gem, Mrs. Torman, James Stevens, Acme of Perfection, Alex. Cramond, Goldfinder, Michael Saunders, Mrs. G. R. Jeffery, Rosetta, Condor, Imperial, Hope, Flag of Truce, Seraph, Lady Gladys Herbert, James Vick, John Standish, Julia Wyatt, George Rawlings, Joseph Ashby, Muriel, Henry Bond, James Service, Statesman, Hon. Mrs. P. Wyndham, Champion Rollo, Henry Walton, Prince of Denmark, Mrs. Shirley Hibberd, Jas. Cocker, J. N. Keynes, Cardinal, Royal Queen, Sir G. Wolseley, Clara, Sunbeam, and J. B. Service. Messrs. Keynes, of Salisbury, were placed 2d with a really good collections, but the flowers were not quite so even throughout, but it comprised some really good new and distinct varieties, prominent among them being Mrs. P. Wyndham, Mrs. Dodds, Clara, Joseph Ashby, Mrs. Stancombe, James O'Brien, Wm. Rawlings, Hon. Sydney Herbert, Mrs. Gladstone, &c. The 3d prize was awarded to Mr. W. Boston, Manor Farm Nurseries, Carthorpe, Bedale, Yorkshire. In the class (open) for twenty-four blooms, distinct, there were more competitors, and some really good blooms were exhibited, especially in the exhibit which gained the 1st prize for Messrs. Saltmarsh, of Chelmsford. They had fine blooms of James Cocker, Henry Walton, Rosy Morn, Mrs. S. Hibberd, Mr. George Harris, Mrs. Stancombe, Burgundy, Mrs. Harris, Constancy, Revival, Earl Beaconsfield, Vice-President, Shirley Hibberd, Lady Gladys Herbert, Samuel Plimsol, Mrs. Dodds, Rev. J. Goodday, Ethel Britton, Hon. Mrs. P. Wyndham, John Neville Keynes, John Wyatt, Royal Queen, Sunbeam, and Helen McGregor; 2d, Messrs. Harkness & Son, Bedale, Yorkshire; 3d, Messrs. Paul & Son, Cheshunt; 4th, Messrs. Gilbert & Son, St. Margaret's Nursery, Ipswich. In the class (open) for twelve blooms, distinct, there was also good competition. The 1st prize was awarded to Mr. Walker, of Thame, Oxon, with blooms of good quality throughout. They were Seraph, William Rawlings, Henry Walton, Champion Rollo, Mrs. Shirley Hibberd, Joseph Ashby, Perfection of Primoses, George Rawlings, Herbert Turner, fine blush-white; J. Cocker, John Bennet, and Prince of Denmark. 2d, Mr. T. Painter, of Smallwood, Stoke-on-Trent; Messrs. Rawlings, of Romford, were 3d; Mr. G. Humphries, of Kington Langley, Chippenham, 4th. Fancy varieties were shown in capital condition; Messrs. Keynes staged the older varieties in fine form, and exhibited for the first time some fine new kinds. This firm obtained the 1st prize (open) for twenty-four varieties, with well formed, even blooms of George Barnes, James O'Brien, Maid of Athens, Rev. J. B. M. Camm, Seedling, Professor Fawcett, Monsieur Chauviere, Fanny Sturt, Miss Annie Melsome, Miss Lily Large, Duchess of Albany, John Lamont, Gaiety (sport), John Forbes, Mrs. N. Halls, Chorister, Frederick Smith, Parrot, Flora Wyatt, Lottie Eckford, Alderman, Rebecca, Gaiety, John Saunders. The seedling fancy in this stand was afterwards named General Gordon, and obtained the prize as the best fancy flower in the show; it is a perfectly formed flower, with a golden-yellow ground, thickly striped with orange-red. Mr. Charles Turner, of Slough, was a good 2d—Florence Stark and Annie Pritchard were fine blooms in this stand; Mr. W. Boston came in 3d. For twelve blooms, distinct (open), there was a better competiton than for the twenty-fours. Messrs. Saltmarsh again took the lead, with Egyptian Prince (very fine), Wizard, Hercules, Rev. J. B. M. Camm, John Lamont, Flag of Truce, Rebecca, Oracle, Lady Antrobus, Richard Dean, Galatea and Gaiety; 2d, Messrs. Paul & Son, Cheshunt; 3d, Mr. Walker; 4th, Messrs. Gilbert & Son. In the amateurs' division the competition was very close, some splendid blooms being exhibited. In the class for twenty-four blooms, distinct, there were nine competitors, and all the exhibits were worthy of prizes. The 1st was awarded to Mr. T. Hobbs, Lower Easton, Bristol, with a fine collection of even and well-formed blooms. They comprised a self from the Rev. J. B. M. Camm, James Cocker, Henry Walton, Herbert Turner, Mrs. Dods, Mrs. Stanscombe, Richard Edmonds, Senator, Lord Chelmsford, Mrs. Shirley Hibberd, J. B. Reid, Lady Golightly, James C. Brien, C. E. Coope, Harrison Weir, Emily Edwards, John Standish, Prince Bismarck, Miss Cannell, Ethel Britton, James Vick, Hon. Mrs. P. Wyndham; Mr. Henry Glascock, Rye Street, Bishops Stortford, was 2d; Mr. R. Pettfield, Deddington, Buckden, Hunts, was 3d; and Mr. C. Hockley, Grenfield House, Stokesly, was 4th. In the class for twelve show varieties there was an equally good competition. Mr. J. Tranter, Upper Assenden, Henley-on-Thames, gained the highest position; his blooms were equally good with those shown in the other division. The varieties were The Hon. Mrs. P. Wyndham, Clara, Henry Walker, James Cocker, Hope, Mrs. Gladstone, William Rawlings, H. W. Ward, Goldfinder, Julia Wyatt, Joseph Ashby, Ethel Britton. T. A. Hussey, Esq., Norton Court, Taunton, was 2d; Mr. J. Tunbridge, gr. to W. Bott, Esq., Broomfield, Chelmsford, 3d; and Mr. W. Steer, Eltham, Kent, 4th. For six blooms there was also a good competition, but a slight falling off was evident in the quality of the blooms, Mr. A Painter, Moreton Hall, near Congleton, Cheshire, was 1st, with John Henshaw, Henry Walton, Ethel Newcombe, Mrs. Gladstone, and Clara. 2d, Mr. J. Harris, Bloomfield, Chelmsford; 3d, Mr. G. Tanner, Draycott, Cerne, Chippenham; 4th, Mr. G. J. Moorcroft, Boxley Road, Maidstone. Fancy varieties were also present in considerable numbers; eight competitors contested the prizes for twelve blooms: the 1st prize was awarded to Mr. Henry Glasscock; his blooms were Miss L. Large, Henry Glasscock, Mrs. Saunders, Gaiety, Peacock, Miss N. Halls, John Forbes, Mandarin, Flora Wyatt, Professor Fawcett, and Egyptian Prince; the 2d prize was awarded to Mr. R. Pettfield; the 3d to Mr. Geo. Boothroyde, Woodville Hall, Dover; 4th, Mr. J. Tranter. For six blooms, Mr. T. Hobbs was 1st, with Flora Wyatt, Professor Fawcett, Lottie Eckford, Hercules, and John Lamont; 2d, Mr. J. Tunbridge, Broomfield, Chelmsford; 3d, Mr. J. Buss, Ewell, Surrey; 4th, Mr. A. Painter, Moreton Hall. The Veitch Memorial Trustees offered a Veitch Memorial Medal, with its accompanying cash prize, for the best collection of show and fancy varieties, in the proportion of twelve blooms of the former to six of the latter. This prize was well won by Mr. Glasscock, with a splendid collection, the sorts being Imperial, Hon. Mrs. Percy Wyndham, Rev. J. Goodday, Miss Cannell, Shirley Hibberd, Countess of Ravensworth, Sir G. Wolseley, Prince of Denmark, Harrison Weir, Black Knight, Flag of Truce; the fancies were Barnaby Rudge, Chorister, Professor Fawcett, Mrs. Saunders, Miss Lily Lange, and Wizard. The pompon and single varieties were included in the open classes. The pompons were fine indeed, and the contest for the best twenty-four bunches, not more than ten blooms in a bunch, was a very close one: the 1st prize was ultimately awarded to Mr. Charles Turner, who set them up, as he always does, remarkably well; Messrs. Keynes were 2d, and Messrs. Rawlings 3d. For twelve varieties, Mr. J. Henshaw, of Harpenden, was 1st, Messrs. Paul & Son, Cheshunt, 2d, Mr. Douglas, of Ilford, 3d, Messrs. Smith, of West

Dulwich, 4th. For six varieties, Messrs. J. Burrell & Co., Cambridge, were 1st; Mr. J. T. West, Cornwalls, Brentford, 2d; Mr. John Walker, Thame, Oxon, 3d; and Messrs. Robert Veitch & Son, Exeter, 4th. Messrs. Turner, Keynes, Cheal & Sons, Crawley, and Messrs. Paul & Son, Cheshunt, were the prize-takers for twelve bunches of single varieties; while Messrs. Burrell & Co., Mr. Geo. Humphries, of Chippenham, Messrs. Robert Veitch & Son, and Messrs. Gilbert & Son, took the prizes for six bunches, in the order of their names. Messrs. Lamont & Son exhibited the best blooms in the class for twelve bunches of single varieties, but were disqualified, owing to their having more than ten flowers in a bunch. Mr. T. S. Ware, of Tottenham, exhibited some fine border Dahlias, also a stand of single kinds, with small but very neat flowers. Messrs. Keynes, besides the First-class Certificate for Gen. Gordon, obtained one for Romeo, a buff coloured flower, flaked, and striped crimson, of fine form. Also for show Dahlia Mrs. Langtry, yellow ground tipped crimson, of exquisite form,

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Stratford-on-Avon Horticultural Show: *Sept.* 2. — This exhibition took place in connection with, and formed a part of, the annual exhibition of the Warwickshire Agricultural Society. The latter occupied a spacious piece of ground near the bridge which spans the Avon, and the plants were arranged in a series of tents set up in the grounds of Alveston Manor House, adjoining to which access could be had from the show-ground. The horticultural department was under the direction of Mr. Arthur M. Cox, who acted as local secretary, and a committee, and it must be stated to their credit that the exhibits were arranged ready for the judges before 11 o'clock. Plants, cut flowers, and vegetables were well represented, but fruit somewhat sparingly and indifferently, excepting culinary sorts. As is usual on such occasions horticulture played anything but a leading part, and at the dinner presided over by the Lord-Lieutenant, Lord Leigh, it was scarcely mentioned. The horticulturists certainly lost considerably in importance in comparison with the agriculturist and his productions. He appeared to be tolerated —nothing more.

STOVE AND GREENHOUSE PLANTS.—There was an excellent display of plants in the first division, open to all England, and it is a matter for regret that such fine exhibits should have been crowded into a tent altogether too small to show them off to anything like advantage—Mr. Cypher's large plants in particular suffering in this respect. But this renowned grower, who has had a very successful season, had to lower his colours before a competitor who engaged in the fight with fresh specimens that had in all probability not been shown before this season. Plants that have gone from show to show must of necessity suffer somewhat, and this told against the Cheltenham collection. The winner on this occasion was Mr. Coysh, gr. to E. Wood, Esq., Newbold Revel, Rugby. The class was for ten plants, five in flower and five foliaged, and Mr. Coysh was placed 1st with a group even in size and fresh and bright in appearance, consisting of a large and well flowered specimen of Lagerströmia indica, covered with panicles of lovely flesh-coloured blossoms; a fine Bougainvillea glabra, Allamanda Hendersoni, A. nobilis, and Ixora Williamsii; a splendid Croton Weismanni, C. interruptus aureus, and C. variegatus; a large Phœnix dactylifera, and Cycas revoluta. Mr. Cypher came 2d, with Allamanda nobilis, A. Hendersoni, Clerodendron Balfourianum, Bougainvillea glabra, and a small Erica Marnockiana, a huge Latania borbonica that spoilt the symmetry of the collection, Kentia Fosteriana, a fine Cycas revoluta, a splendid Croton angustifolius, and C. majesticus. 3d, E. Humphries, Esq., Pershore (Mr. R. Scott, gr.). There was but one collection of six plants, from J. B. Barbour, Esq., Leamington (Mr. Hilden, gr.), which was awarded the 1st prize. This consisted of Allamanda Hendersoni, Dipladenia amabilis, Lagerströmia indica, Rondeletia speciosa, Clerodendron fallax, and C. Balfourianum. There was also a class for three stove and greenhouse plants shown by amateurs, Mr. J. Hill, of Stratford, being placed 1st, and Mr. J. S. Tomkins, Shottery, 2d, but the plants were small, though nicely grown and healthy.

ORNAMENTAL FOLIAGED PLANTS.—In the class for six specimens Mr. Cypher was able to hold his own with great ease. He staged excellent specimens of Cycas revoluta, Latania borbonica, Croton Johannis, C. Evansianus, in fine condition; Dasylirion acrotrichum, and Cordyline indivisa. 2d, Mr. Coysh, with Croton pectinatus, C. Disraeli, and C. variegatus, Dæmonorops fissus, and Phyllanthus nivosus. 3d, G. H. Nelson, Esq., Emscote House, Warwick (Mr. E. Moorhouse, gr.)

GROUPS OF PLANTS.—Unfortunately this class did not set forth a recognised space to be filled, and in such a case bulk (other things being equal) must carry weight. Mr. W. J. Butcher, nurseryman, Stratford-on-Avon, had a nice arrangement of flowering plants, which was very bright and effective, and the 1st prize was awarded to him. Messrs. Jones & Son, nurserymen, Shrewsbury, had a group composed entirely of foliage plants, tastefully arranged, but it looked cold and unattractive in comparison with the other.

FERNS.—Here, with six specimens, F. W. Arkwright, Esq., Warwick (Mr. T. West, gr.), was 1st, staging good examples of Adiantum formosum, A. tenerum, A. cuneatum, A. concinnum, A. trapeziforme, and a fine Woodwardia radicans; these were well grown, clean, healthy specimens, and it must be said of Mr. West that he promises well to make his mark as an exhibitor of plants in the near future. 2d, W. R. Mann, Esq., Leamington, who had nice specimens of Dicksonia antarctica, Lomaria gibba, Adiantum decorum, A. Farleyense, Gymnogramma sulphurea. Mr. Coysh and Mr. Moorhouse were awarded equal 3d prizes. In the amateurs' class for three Ferns, Mr. J. Hill was 1st, and Mr. Tomkins 2d, both with neat plants.

COLEUS.—These were well shown, generally in pyramidal form, and the bright hues of the leaves attracted much attention. Mr. W. R. Mann was 1st, and Mr. C. E. Flower, Stratford-on-Avon (Mr. Chaplin, gr.), 2d.

MISCELLANEOUS FLOWERING PLANTS.—These consisted of Fuchsias, which, it must be confessed, were quite poor for the season of the year; double and single zonal Pelargoniums, Mr. West being 1st in both classes, with six specimens of each; Mr. Coysh being 2d with singles, and Mr. Mann with doubles; some fairly good specimens were also shown by amateurs. Begonias were well shown in sixes by Messrs. Thos. Hewitt & Co., nurserymen, Solihull, who took the 1st prize, with specimens that attracted much attention, fine varieties, admirably grown and bloomed. Equal 2d prizes were awarded to Messrs. Lott and West, one with well grown plants of inferior varieties, the other with indifferently grown plants of good varieties. Cockscombs and Mignonette were fairly well shown. There were plenty of baskets of plants arranged for effect, generally with more plants than effect, the latter considered from an artistic point of view. Plants for table decoration were also nicely shown. Mr. Chaplin was 1st, run very close by Messrs. Jones & Son, who were 2d; and Mr. F. Perkins, Leamington, 3d. A remarkably good group of tuberous-rooted Begonias was shown by Messrs. T. Hewitt & Co., Solihull, to which a special Certificate of Merit was awarded.

CUT FLOWERS.—At this season of the year these are certain to be a leading feature at a flower show. The best twenty-four Roses, single blooms, came from Messrs. S. Perkins & Sons, nurserymen, Coventry, whose best flowers were Alfred Colomb, Prince Camille de Rohan, Madame Victor Verdier, Prince Arthur, Niphetos, Charles Lefebvre, A. K. Williams, Gloire de Dijon, Black Prince, Louis van Houtte, Etienne Levet, Maréchal Niel, J. S. Mill, Madame Lambard, Alba rosea, and White Baroness; 2d, Mr. R. H. Vertegans, Chad Valley Nursery, Edgbaston, Birmingham, whose leading flowers were Mons. E. Y. Teas, Pierre Notting, Ferdinand de Lesseps, Auguste Rigotard, Duc de Rohan, Reynolds Hole, and Louis Doré; 3d, Mr. F. Perkins, nurseryman, Leamington. Messrs. Perkins & Sons were also 1st with twelve varieties, having good blooms of Alfred Colomb, Prince C. de Rohan, Madame Victor Verdier, Prince Arthur, Niphetos, Charles Lefebvre, A. K. Williams, and Gloire de Dijon; 2d, the Rev. F. L. Taylor, Evesham (gr., Mr. R. Emms); 3d, Mr. F. Perkins. In the amateurs' class for six varieties the Rev. J. A. Williams, Alderminster, an amateur of some repute, was 1st with some excellent blooms; Mr. J. S. Tomkins being 2d. Of cut flowers, of stove and greenhouse plants there was an excellent display, Mr. F. Perkins being placed 1st with admirable bunches of Begonia Fournieri, Allamanda Hendersoni, Anthurium Andreanum, Begonia Vesuvius, Ixora Williamsii, Lapageria rosea, Ixora amboinensis, Pelargonium Volonte Nationale, a beautiful white decorative variety; Abutilon Lemoinei, &c.; 2d, Mr. Coysh, with fine examples of the rose and white Lapagerias, Bomarea Carderi, Pearl Tuberose, Ixora coccinea superba, &c.; 3d, Messrs. C. Kimberley & Son, Coventry. Mr. F. Perkins was also 1st with twelve bunches of herbaceous plants, prominent being Tritoma grandiflora, Anemone japonica and its variety alba, the white Everlasting Pea, and other good subjects, set up in neat but showy bunches; 2d, Messrs. Jones & Son, Shrewsbury; 3d, Mr. R. H. Vertegans, Edgbaston.

Of DAHLIAS there was a fairly good display. Some were overgrown, and a few with defective centres. Mr. R. H. Vertegans had the best twenty-four show varieties, his leading flowers being Ethel Britton, Mr. Stanscombe, George Smith, James Service, Flag of Truce, Prince of Denmark, John Bennett, Mrs. Harris, John Wyatt, J. B. Service, Wm. Rawlings, Wm. Dawkins, and Alma; 2d, Mr. F. Brubury, Leamington, whose leading flowers were Thomas White, Hon. Mr. P. Wyndham, Mulberry, James Vick, Burgundy, and J. B. Service; 3d, Messrs. C. Kimberley & Son, Coventry. Mr. Brubury had the best twelve varieties, his leading flowers being J. B. Service, Grand Sultan, Emily Edwards, George Barnes, and Cardinal; 2d, Mr. D. Shelswell, Banbury. In the class for twelve fancy Dahlias the prizes were withheld, duplicates being shown in some, and tipped show Dahlias in others. Single Dahlias were well shown, Mr. F. Perkins being 1st with fine bunches of the following varieties among others:—Black Prince, White Queen, Purple King, T. S. Ware, and Nora; 2d, Mr. D. D. Shelswell. The necessity for classes being definitely stated was shown here. Some exhibitors had bunches, others single blooms, evidently thinking that the same rule applied to the single as to the show and fancy Dahlias. Gladioli were well shown in fine spikes by Messrs. C. Kimberley & Son, Coventry. Then there were classes for cut trusses of Pelargoniums (zonal), Verbenas, Asters, Zinnias, Marigolds, and Holyhocks.

FLORAL DECORATIONS.—Handsome prizes were offered by the ladies of Stratford-on-Avon and neighbourhood for the best arranged dinner-table, completely laid for twelve persons, to be shown under lamplight. The result was that four tables were laid out in a darkened tent lit up by paraffin lamps, some suspended, some resting on the ground. The lighting was very indifferent—it was neither light nor dark. The gloom hid the flowers in great measure from view, and the smell was execrable. The awards were made by a jury of ladies, who placed Miss Alfrey, Alveston, 1st; Messrs. Jones & Son, Shrewsbury, 2d; Mr. J. Hill, Stratford-on-Avon, 3d; and Mr. F. Perkins, Leamington, 4th. It is not too much to state that on the part of the practical horticulturists there was an almost universal condemnation of the first award; the arrangement was neat and simple, but poor and insignificant, and the effect in a good light would have been disappointing. Messrs. Jones & Son should have had the premier award, their table was charmingly arranged: the flowers employed admirable for the purpose. Had the exhibition taken place in broad daylight, or in the full flood of light from gas or candles, the result must have been different. Let us hope this will be the last of such exhibitions by means of paraffin. The best three stands or vases came from Mr. Hopkins, who must be congratulated on his charming work; Messrs. Jones & Son being 2d, and Mr. F. Perkins 3d. Messrs. Jones & Son had the best single piece, Mr. Hopkins being 2d, both very good. The best bride's bouquet came from Messrs. Perkins & Son, Coventry; Messrs. Jones & Son being 2d, and Mr. F. Perkins 3d. The Rev. J. A. Williams had the best basket of Roses, Mr. F. Perkins being 2d, and Mr. Vertegans 3d. Of button-hole bouquets there was a large array, and generally they were very good. Messrs. Perkins & Son were 1st, Mr. J. Cypher 2d, and Messrs. C. Kimberley & Sons 3d. Special Certificates of Merit were awarded to the Cranston Seed and Nursery Company, Hereford, for collections of cut Roses, Gladioli and Clematis—a very fine lot indeed; and to Mr. C. Turner, Royal Nursery, Slough, for a collection of cut blooms of Dahlias of fine quality, among them an exquisite bloom of the new show variety, Mrs. Gladstone, to which a First-class Certificate of Merit was awarded. In Mr. Turner's stand were fine examples of Burgundy, J. N. Keynes, Imperial, Julia Wyatt, George Harris, Sunbeam, Prince of Denmark, James O'Brien, and some bunches of charming bouquet varieties.

FRUIT.—This was undoubtedly the weak point in the show, excepting in the Grape classes, where there was a fairly good representation of this popular fruit. The best three bunches of black Grapes came from E. Flower, Esq., Stratford-on-Avon (Mr. Mills, gr.), who had a very fine Gros Colmar; 2d, C. G. Lefroy, Esq., Wellesbourne, with Black Hamburgh. Mr. Mills was also 1st in the white class, staging Muscat of Alexandria; Mrs. Haden, Stratford-on-Avon, being 2d, with the same. The Rev. B. Stannus had the best single bunch of black, showing Alicante; Mr. Lefroy being 2d, with Black Hamburgh. Mr. J. D. Barbour had the best six Peaches, staging very fine Late Admirable; the Rev. B. Stannus being 2d, with Salway. Mr. Barbour also had the best six Nectarines, staging Pitmaston Orange; Mr. Slade being 2d. Melons were numerous enough, but nothing special among them. Pears were fairly well shown, Williams' Bon Chrétien being the leading variety. Plums were a good feature; evidently the crop proved a better one here than in some other parts of the country. Mr. E. Humphries, of Pershore, had the best three dishes of Plums, staging excellent examples of Pond's Seedling, Black Diamond, and Victoria; Mr. J. D. Barbour was 2d, with Emperor, Victoria, and Black Diamond. Mr. Humphries was 1st, with Emperor; and Mr. Slade 2d, with Victoria, in the single dishes. The best collection of not less than six dishes of fruit came from Mr. J. D. Barbour, and consisted of Black Hamburgh and Golden Hamburgh Grapes, Late Admirable Peaches, Pitmaston Orange Nectarines, Victoria, Jefferson's Orleans, Emperor, and Blue Impératrice Plums; Figs, Mulberries, &c. Mr. Coysh was 2d, with Muscat of Alexandria and Alicante Grapes, Figs, Plums, Nectarines, &c.; Mr. C. Hopkins and Mr. G. A. Everett were placed equal 3d. There was a good display of Apples of such sorts as Cornish Aromatic, Blenheim Orange, New Hawthornden, Nelson's Glory, Gloria Mundi, Kentish Fillbasket, Worcester Pearmain, and Borovitzky, which appears to be much grown in Warwickshire.

VEGETABLES.—Of these there was a large, and, on the whole, a very fine display. Mr. Coysh had the best collection of twelve varieties, staging fine Autumn Giant Cauliflower, International Potato, Giant Rocca Onion, Ruby Tomato, Mushrooms, Intermediate Carrot, Celery, Beet, Peas, Turnips, and Scarlet Runner Beans, of excellent quality; 2d, Messrs. C. Kimberley & Son; 3d, Mr. Humphries. Mr. Hall, gr. to H. W. Alfred, Esq., Alveston, had the best collection of six dishes of Potatos, staging good the following:—Reading Russet, Woodstock Kidney, Schoolmaster, Grampian, Royal Ashleaf, and Cole's Favourite. 2d, Mr. T. Cull, Alcester, with Vicar of Laleham, Magnum Bonum, Reading Russet, Porter's Excelsior, Breadfruit, and International. 3d, Mr. H. J. Banks, Warwick. The best dish of kidney Potatos was International, shown by Miss Percy; and the same variety was awarded 2d prize also. Reading Russet, shown by Mr. Banks, was the best dish of round Potatos; Mr. Shelswell being 2d, with Schoolmaster. In the other vegetable classes Turnips, Cauliflowers, Peas, Tomatos, Onions, &c., were numerous and good.

The judges of cottagers' vegetables seem to have adopted the practice of cutting all Potatos, and yellow-fleshed ones appeared to go down before the white-fleshed varieties. Coloured-skinned Potatos appeared also to stand but little chance against those with white skins, however handsome they were. Fine dishes of Edgecote Purple were left out in the cold. This is a system of judging that cannot be justified on any common-sense ground, while it is one calculated to admit of the prejudices of judges having ample play. Furthermore, it is certain to operate in the direction of discountenancing the cultivation of certain varieties of Potatos, that competent committees in London award First-class Certificates of Merit to.

Brighton and Sussex Horticultural Show: *Sept. 3 and 4.*—The thirty-second grand autumn show of the above Society was held on the dates given. If the plant classes were not so strongly represented as usual, there was nothing to find fault with in the quality of the productions, which were of an excellent standard throughout, the competition in several cases being very close. The exhibits of fruit and cut flowers were in every way first-class. The autumn exhibition here has always been noted for its excellent quality of both, and the present instance shows no departure from previous shows; indeed, in some few cases it would be hard to surpass the productions brought forward. This was notably so in the class for forty-eight cut Roses, three blooms of each, Messrs. G. Paul & Son, of Cheshunt, winning the 1st prize with a grand lot of flowers, very fresh, and of excellent colour. The boxes of cut flowers from Mr. Gilbert, of Hastings, and Mr. Balchin, of Brighton, would have held their own anywhere, each of their twenty-four kinds being represented by the choicest of stove and greenhouse flowers. In the fruit classes Mr. Roberts, of Gunnersbury Park Gardens, Acton, W., was a strong exhibitor, standing in the somewhat unique position of winner of the two £10 Silver Cups offered, one for twelve kinds of fruit, and one for six kinds of Grapes. His productions in either case would have been hard to beat. Mr. Balchin, of Brighton and Hassock's Gate nurseries, decorated one of the rooms of the Royal Pavilion entirely by productions of his own plants, not for competition. He deserves the thanks of the Society for this generous effort to render the exhibition as successful as laid in his power. This collection consisted of well-grown and suitable decorative plants adapted to the object in view—of furnishing rooms for festive occasions.

PLANTS.—Reverting to the order of the schedule, the first on the list is a class provided for a group of Ferns arranged for effect. Only one collection was staged, but that well deserved the 1st prize which was awarded to it. The groundwork chiefly consisted of Maidenhair varieties; this was broken up by other kinds of diverse form and habit, forming a very pleasing group, shown by the Executors of the late Mr. W. Miles, nurseryman, Brighton. J. Warren, Esq., Handcross Park, won easily with six fine-foliage and six flowering plants, being very strong in the former. His best plants being Croton Warreni, very fine in foliage and colour; C. interruptus, a huge plant; C. Andreanus, also well done; Thrinax elegans and Latania borbonica were prominent central plants; Gleichenia rupestris glaucescens completed the six. Ixora regina was a well flowered bush, so also was Erica cerinthoides coronata. Mr. Gilbert, of Hastings, was 2d in this class, having six well grown flowering plants—Erica Austiniana, Allamanda grandiflora, and Statice Gilbertii being the best; his examples of foliage plants were smaller than in the premier collection. In the 3d prize lot, from Mr. Meachen, gr. to J. Armstrong, Esq., Withdene, were three extra good flowering plants; these were Allamanda Hendersoni, very profusely flowered; Rondeletia speciosa major, a large plant, well done; and Erica Eueriana, very fresh. A Silver Cup, valued at five guineas, was offered for twelve stove and greenhouse plants, six fine-foliage and six in bloom, limited to 12-inch pots. This was won by J. Warren, Esq., although Mr. Gilbert followed him closely. The exhibitors in this class evidently want time for preparation under the restrictive conditions. Four competitors entered for the prizes for the same number of plants, J. Warren, Esq., being placed 1st—Mr. Jupp, gr. to G. Doulton, Esq., Eastbourne, following. The best plants in this class were Erica cerinthoides coronata, E. mammosa and Impatiens Sultani. Another five-guinea Cup was offered in the county division for the best arranged group. This was won by Mr. Meachen with a light arrangement, well broken up with suitable flowering and foliage plants on a green ground. Lilies, Hyacinthus candicans, and Vallota purpurea were used with good effect; the 2d award going to Mr. Turner, gr. to Major Way, Wick Hall, for a very neat arrangement. For a group of Ferns in the county division, Mr. Jupp took the 1st prize with a well-grown lot of plants. Prizes were also offered and awarded to groups of Coleus, of Begonias, and of Fuchsias respectively, but improvement in arrangement was evident in nearly every case. It is difficult, no doubt, to arrange each effectively by themselves, and it is open to question whether the combination of two or more suitable genera would not be more appropriate. Some well-coloured Coleus were shown by Mr. Martin, gr. to J. G. Langham, Esq., Eastbourne. Four variagated plants were finely shown by J. Warren, Esq., whose example of Croton angustifolius, C. Evansianus, Anthurium crystallinum, and Pandanus Veitchii left nothing to be desired. The prizes for Zonal Pelargoniums in three classes were well contested, Mr. Gilbert eventually winning the first position in each with well known varieties—Candidissima plena, white; and Madame Leon Dalroy, soft pink, were the best of the doubles, and Zuleika, magenta; Mrs. Ward, pink; Ellen, soft salmon, and Rev. Atkinson, deep scarlet, the best of the singles. Plants for the decoration of the dinner-table were shown in quantity, Mr. Balchin winning for both twelve and six. His plants were well selected, and of suitable size for the purpose. Croton Johannis, C. majesticus, C. Queen Victoria, Cocos Weddelliana, and Phœnix rupicola were among the best. In two other collections, Eulalia japonica variegata and Asparagus plumosus nanus were well shown.

FRUIT.—In the fruit classes the chief features were the competition for the Cup for six kinds of Grapes, three bunches of each. This, as previously noted, was won by Mr. Roberts, with fine examples of Madresfield Court, fine in berry and colour; Alnwick Seedling, and Black Hamburgh, both alike good; Buckland Sweetwater, Foster's Seedling, and Muscat of Alexandria, being an excellent trio of white kinds. The 2d prize in this class went to Mr. Chatfield, gr. to T. Holman, Esq. East Hoathley, Sussex, in whose collection Buckland Sweetwater was unusually well-finished and very large in bunch. For the Cup offered for the collection of twelve dishes Mr. Roberts had no one to dispute his claim as the winner. His collection was, however, first-class in every way, and particularly strong in Madresfield Court and Muscat of Alexandria Grapes, Golden Perfection and Wm. Tillery Melons, Barrington and Prince of Wales Peaches and Pine-apple Nectarines. In the Grape classes there was abundant competition. For six bunches of Muscats, Mr. Johnstone, gr. to Marchioness of Camden, Bayham Abbey, was 1st with well-coloured samples, rather loose in the bunch but fine in berry; Mr. Goldsmith, gr. to C. A. Hoar, Esq., Kelsey Manor, Beckenham, taking 2d, with neat compact bunches — Mr. Johnstone again winning for three bunches of the same kind. For six bunches of Black Hamburgh, Mr. Holston, gr. to R. W. Penny, Esq., Dyke Road, was 1st with good samples, being beaten, however, for three bunches of the same kind by Mr. Warren, gr. to Mrs. Hankey, Balcombe Place. In the county division three fine bunches of Buckland Sweetwater beat the same number of Muscats; the former were shown by Mr. Chatfield. Melons were shown in numbers, Mr. Deadman, gr. to Rev. D. Winham, Western Street, Brighton, being 1st with Hero of Lockinge, from among eleven other fruits, repeating his success in the county division with the same kind. In the class for Peaches very large and fine Late Admirable were shown for the 1st prize by Mr. Walder, gr. to J. Cornish, Esq.; Mr. Balchin following closely with Princess of Wales, beautiful in colour. For Nectarines, Mr. Staples, Chipstead Place, Sevenoaks, was 1st, with good fruit of Pitmaston Orange, well coloured Williams' Bon Chrétien Pears were placed 1st, being very fine fruit, from Mr. Funnell, Southover, Lewes. Apples were strongly shown in all classes provided for them. For a collection of six varieties, Mr. Townshend, gr. to Captain Thompson, Withdene, took 1st place; for a single dish of dessert fruit, Mr. Staples, with Worcester Pearmain. The best among the collections of Apples were Mère de Ménage, Beauty of Kent, Lord Suffield, Le Grenadier, Bedfordshire Foundling, Prince of Prussia, Ribston Pippin, Royal Russet, Melon Apple, and Warner's King. Fine dishes of New Hawthornden were shown by Mr. Miller, of Steyning; and Lady Henniker, by Mr. Stevens, gr. to Sir H. Fletcher, Ham Manor. Larger collections of thirty-two dishes, from Mr. Balchin, and twenty from Mr. Miller, constituted an interesting feature. Plums were unusually fine, Mr. Staples showing a beautiful dish of Jefferson in the open class, and Mr. Johnstone the same kind in the county division. Figs are always shown in grand condition at this show; on this occasion Mr. Butler, of Lancing, took 1st in both divisions with very fine fruit of Madagascar and Brown Turkey. Classes, too, were provided for Green Gages and Morello Cherries, the exhibits of which were very good. Tomatos, also, were shown in capital condition, Mr. Johnstone taking 1st with twelve fruits resembling Hathaway's Excelsior. The only classes not represented were those for Pine-apples, otherwise, with hardly an exception, the competition was very keen, many most deserving exhibits receiving no award at all.

CUT FLOWERS.—Numerous classes were provided in this section, resulting in a good display in nearly every case, Messrs. G. Paul & Son, Cheshunt, coming to the front with forty-eight blooms of Dahlias (show), staging an excellent collection of flowers, fine in quality and size. For twenty-four kinds (fancy) Mr. Seale, Vine Nursery, Sevenoaks, was 1st, with a good selection, whilst for twenty-four single Dahlias Messrs. Cheal, of Crawley, staged a well varied assortment, and took 1st place with bunches of each kind neatly made up. Six other classes for Dahlias were provided, and from which the trade growers were excluded. The chief winners in these classes were Mr. Boothroyde, gr. to H. Coleman, Esq., Dover, who took two of the chief prizes for show and fancy kinds; Mr. Vincent, gr. to J. Hart, Esq., Keymer, taking two 1st's also for singles and fancies. Rev. R. C. Hales, Woodmancote, 1st for shows in the county division with fine blooms. Roses were produced in considerable numbers in five classes, the chief winners being Messrs. G. Paul & Son for forty-eight varieties; Mr. Balchin, for twenty-four varieties; Mr. Piper, Uckfield Nurseries, for twelve varieties, trebles being required in each instance, For single blooms of Tea or Noisette kinds Messrs. Paul were again 1st, being closely followed by Mr. Piper. In the amateur classes Mr. Slaughter, of Steyning, showed in his usual form, and took two 1st prizes. Space here forbids us to give names of the best kinds in each class. For the same reason we defer giving the names in the miscellaneous collections of cut flowers, beyond saying Mr. Gilbert this time succeeded in beating his old opponent, Mr. Balchin, in the open class. Mr. Vincent, with Mr. Ford, The Gardens, Leonardslee, Horsham, took the same positions in the limited class. These boxes of cut flowers were one of the chief features of the show, and caused a great amount of attraction. Herbaceous Phloxes were produced in good condition by Mr. Staples and Mr. Balchin, the most striking kinds being Apollon, Lothair, Coccinea superba, and The Ghost. The classes allotted to floral arrangements and designs brought out several exhibits of good quality. For three stands of table decorations, Mrs. Gadd, Selden Road, Worthing, took the 1st, being followed by the Executors of the late Mr. W. Miles; both sets contained excellent material in their composition, but less quantity in either case would have produced a better result. For one bridal and one ball-room bouquet, Mrs. Chard, The Floral Depôt, Clapham Junction, produced a well made pair of useful size that took the 1st place. With a single stand (overdone with good material), Mr. Clark, Nightingale Lane, Balham, was 1st. Prizes for a spray of flowers for a lady's dress, brought out several arrangements, nearly all of which were of extra size, Mrs. Chard winning with a pretty design of subdued colours. Buttonhole bouquets were a popular class, Mrs. Miller, of Shoreham, taking 1st, with a set of six that were light and pretty, also of a serviceable size. Wreaths were well shown by Mr. Webber, Quarry Hill Nursery, Tonbridge, Mr. Balchin, and Mr. Chard. The class for a fully laid out table brought forth two competitors, Mr. Chard winning with an arrangement that ought to have had a table space at least one-third larger to show it off to advantage. Near these productions Messrs. Cheal set up an interesting collection of miscellaneous cut flowers, composed of Roses, Dahlias, and herbaceous plants of good quality. The rooms in the Royal Pavilion were lighted with the electric light, producing a most pleasing effect, whilst in the grounds and marquees oil and gas lamps were used during each evening with a good result.

The Cryptogamic Society of Scotland held its tenth annual conference at Kelso on the 3d, 4th, and 5th inst., under the presidency of W. B. Boyd, Esq., of Faldonside. There was a fair attendance of members, and the Society had again the pleasure of welcoming Dr. Flaxman Spurrell from Kent. After the transaction of ordinary business, the President delivered his retiring address, in which he gave a clear and exhaustive account of the progress and results of botanical research in the district from the earliest times. Additions to *Mycologia Scotica* were laid upon the table. The following figures will serve to show that Scottish mycologists have not been idle in recent years. In 1879 (when *Mycologia Scotica* was published) there were 2154 species recorded for Scotland. During the last five years 891 species have been added to the list, so that the species recorded for Scotland now amount to 3045. Between the publication of Cooke's *Handbook* in 1871, and the publication of *Mycologia Scotica* in 1879, 192 species were recorded from Scotland as new to the British flora. During the last five years 66 species have been added, so that species new to the British flora recorded from Scotland now number 258. Between the same dates—1871 and 1879—107 new species were recorded for Scotland. During the last five years seventeen new species have been added, so that species from Scotland new to the cryptogamic flora now number 124. Several names were added to the membership of the Society, which continues to extend its influence from year to year.

The classic region of Kelso is too well known to require description. Excursions were made to Bowmont Forest, Stickhill, Springwood Park. The beauty of the scenery and unclouded sunshine helped to mitigate the disappointment which the absence of fungi created. Owing to circumstances the meeting took place earlier than was at first anticipated; but it seems as if the year were to prove a fruitless one for the mycologist in Scotland. With the exception of a few of the commoner fungi the ground was absolutely barren. The same is the case at Glamis, and the Rev. Dr. Keith sends a similar report from the usually fruitful regions of Torres and Rothiemurchus. In some parts of the west of Scotland, however, the larger fungi are more abundant. The only fungus worth recording is Agaricus areolatus, Kl. It was found by the President at Faldonside on the day previous to the meeting, and was again met with at Springwood Park. It has not been gathered, so far as we are aware, since it was discovered by Klotsch in the Botanic Garden at Glasgow. The following mosses are worthy of mention:—Pterogonium gracile, Hypnum crrista-castrensis, and Tortula papillosa. Lichenology proved the more fruitful field, as the following species, identified by Dr. Stirton, will serve to show:—Cladonia pungens, C. macilenta, Parmelia omphalodes, P. conspersa and f. isidiata, P. incurva, Ramalina subfarinacea, Squamaria crassa, Leccanora fuscata, L. ferruginea, Lecidea fumosa, L. stellulata, Opegrapha atra, O. saxicola, Verrucaria maura. It is also worthy of note that Physcia aquila was met with about 20 miles from the sea shore, to which it is usually confined.

It has not been definitely fixed whether the Society will hold its next conference at Aberdeen or at Inverness. Intimation will be given as soon as the place of meeting has been finally determined. *J. S.*

Harpenden Horticultural: *Aug. 27.*—The managers of this excellent Society, which is annually growing in importance, are to be condoled upon the fact that their sixth annual show fell upon the first day of the breaking up of the late brilliant weather, for notwithstanding the severe strain to which most horticultural and floricultural productions have been put during the hot scorching days of the past three weeks, a better lot of stuff, taking the show as a whole, could scarcely have been brought together. And many an older society might have been justly proud of such a collection as was exhibited on Wednesday week in the park of Sir John Bennet Lawes, Bart., at Rothamsted.

The show on this occasion occupied three marquees, the two largest being each over 100 feet in length and about 40 feet in breadth, and a third of smaller dimensions which was devoted exclusively to dinner-table decorations, and exhibits by ladies of vases and baskets of cut flowers, button hole bouquets, and flowers for ladies hair and dress. In the division open to all subscribers, Mr. G. Underwood, gr. to C. R. Fenwick, Esq., High Firs, Harpenden, worthily took the prize offered by J. Blundell Maple, Esq., Childwickbury, St. Albans, with six handsome stove and greenhouse plants, all in full flower,

which included Vinca oculata, a magnificent plant, 5 feet across, and literally covered with bloom; V. rosea, Allamanda Schottii, Dipladenia boliviensis, Impatiens Sultani, and Ixora Williamsii, a beautiful and attractive plant, bearing immense trusses of cherry-red blossoms, and having a dense mass of deep green foliage. In the same division for a group of plants, arranged for effect, on staging 12 feet by 6 feet, for which special prizes were offered by W. S. Brown, Esq., Digswell House, Welwyn, Mr. C. Pollard, gr. to J. Blundell Maple, Esq., Childwickbury, St. Albans, took premier prize, and Messrs. E. P. Francis & Co., The Nurseries, Hertford, obtained 2d, both collections containing splendid examples of excellent cultivation.

ROSES this year, hereabouts, are plentiful and good, in fact the season is considered by those competent to give an opinion to be the best since 1876. It is not surprising, therefore, that in the class for forty-eight cut blooms, Messrs. G. Paul & Sons, the Old Nurseries, Cheshunt, were 1st, with magnificent flowers of Pride of Waltham, A. K. Williams, of exquisite finish, Caroline Küstin, Prince Arthur, Duke of Wellington, Duc de Montpensier, a fine Rose; Edouard André, Maurice Bernardin, Duc de Rohan, Duke of Connaught (Paul & Son), of rich, bright velvety-crimson, and perfect round shape; Duke of Edinburgh, raised by Paul & Sons at Cheshunt, surpassing by several shades of colour, it is said, any kind they have; Mrs. Jowett, Countess of Rosebery, Marie Verdier, Marquise de Castellane, and others of equal merit. The Rev. W. H. Jackson, of Stagsden Vicarage, Bedford, who is highly to be commended as an amateur Rose grower, showed up in good form, and was awarded 2d prize. The same two competitors each staged a capital lot of twelve Tea Roses, consisting, among others, of Comtesse de Nadaillac, Madame Cusin, Perle des Jardins, Marie van Houtte, Princess of Wales, and Souvenir de Thérèse Levet. Messrs. G. Paul & Sons also exhibited a splendid collection, not for competition, of herbaceous plants, pompon and single Dahlias, and a box of fine blooms of the bedding-out Dahlia, Glare of the Garden (or Fire King), all of which attracted a considerable amount of attention throughout the day. As in former years at Harpenden, a very special feature was the charming lot of Dahlias, a better collection than were exhibited on the present occasion it being impossible to bring together. In the class for forty-eight Dahlias, distinct, Messrs. Paul & Son, Cheshunt, stood alone, and were awarded 1st prize, for, owing to an accident in transit, Mr. Henry Glasscock, Bishop's Stortford, who had also entered in this class, could not stage to his satisfaction a sufficient number of blooms. But in the next class, for twenty-four Dahlias, distinct, Mr. Glasscock showed, we may unhesitatingly say, the finest blooms he has ever grown, which is saying a great deal; his collection embraced Acme of Perfection, Rev. J. Goodday, a bloom which is very rarely shown; Miss Cannell, James Vick, a lovely specimen; William Rawlings, Prince of Denmark, most exquisite in colour and finish; Earl of Ravensworth, Hope, a new flower; James Service, a charming bloom; Ovid, Mrs. Gladstone, Mrs. Percy Windham, and Flora Wyatt, a masterpiece for depth and substance of its petals. In the class for twelve Dahlias, distinct, Mr. T. Garratt, South Mill, Bishop's Stortford, showed William Compton, Flag of Truce, a beautiful bloom; and a seedling which he has named Tom Garratt, the finest shaped flower we have ever seen, and one that promises to make its mark in the floral world. For twenty-four spikes of Gladiolus, distinct, Messrs. Kelway & Son, of Langport, Somersetshire, took 1st prize for some magnificently finished spikes of all their best and newest varieties. Messrs. Kelway excel in the art of Gladiolus growing, and produce plants which certainly may be said to come up to our ideal standard of perfection.

In the division open to all subscribers, exclusive of nurserymen, special prizes were offered by Mrs. Warde, Bennetts, Harpenden, for six foliage plants, distinct, which brought two collections of very close order of merit, the 1st prize being awarded to Mr. C. Pollard, gr. to T. Blundel Maple, Esq., Childwickbury, St. Albans, for Areca lutescens, Aspidistra variegata, Croton Baron James de Rothschild, Acalypha musaica, Gymnogramma chrysophylla, Cissus discolor. The 2d prize went to Mr. G. Underwood, gr. to C. R. Fenwick, Esq., High Firs, Harpenden, for Dieffenbachia picta, Cissus discolor, Latania borbonica (Livistona sinensis), Croton irregularis, Bonapartea gracilis, Acalypha musaica, all of which were in excellent condition, and displayed much care and attention in their cultivation. Mr. C. Sibley, gr. to H. T. Hodgson, Esq., Harpenden, brightened the show with nine single zonal and six double zonal Pelargoniums, all exceedingly well flowered, and in every way praiseworthy. The same exhibitor staged good examples of Coleus, Fuchsias, and a collection of the Myrtle-leaved Orange trees laden with fruit.

Among the exhibits entered not for competition must be mentioned a grand miscellaneous collection of Roses, Gladiolus, Lilies, and herbaceous plants, &c., from Messrs. William Paul & Son, Waltham Cross, all of fine quality and excellence, which added considerably to the effect and interest of the show. At the entrance to one of the tents was arranged a useful group of plants from the conservatories of Sir. J. B. Lawes, Rothamsted (gr., Mr. Wm. Oliver), amongst which were some remarkably good specimens of Coleus, well coloured, and Vallota purpurea, whose bright scarlet flowers always prove attractive.

The display of fruit was upon the whole very good, and well represented—a collection, not for competition, of Grapes, Nuts, and Apples, set up by Messrs. H. Lane & Son, The Nurseries, Great Berkhamstead, being particularly noticeable; fine bunches of well coloured Grapes being shown of Muscat of Alexandria, Gros Maroc, and Alicante. Among the varieties of Apples we observed Red Quarrenden, Lord Suffield, Prince Arthur (Lane's), Grenadier, Worcester Pearmain, Warner's King, and Ecklinville Pippin.

In the tent devoted to the amateurs' and cottagers' productions the exhibits were most creditable, especially Potatos, although owing to the character of the season the number of entries was somewhat fewer than usual.

Of honey, which was shown in the same tent, the number of exhibits brought together was very numerous and exceptionally good, the present season with its bright sunshine and glittering flowers being particularly favourable to apiarians.

International Horticultural Exhibition, Dundee: *September* 11.—(*By Telegraph*).—Those who can speak with confidence assert that in comparison with the International Exhibition last held in Dundee the one which opened this morning considerably exceeds it in extent and importance. The entries are much larger, and the general character of the show is very good. The utmost capacities of the Drill Hall fail to afford space for all the exhibits. Temporary annexes are employed on either side of the courtyard to take some of the cut flowers, which are numerous, and very fine here, as also are the Conifers, &c., in pots. The first portion of the hall contains the stove and greenhouse and other plants, the groups arranged for effect, several collections not for competition, the fruit, table decorations, &c. There are large quantities of fruit. Grapes, generally, are very good, there being some 500 bunches Hardy fruits, especially culinary Apples, are very good; collections of fruit are weak, as if the warm dry season had hastened the ripening of much of it, and it is seen past its best. Mr. J. McIndoe, Hutton Hall, and Thos. Boyd, Callander Park Gardens, Falkirk, take high honours with fruit; the former has the 1st prize for the collection of sixteen sorts, the latter the Veitch Memorial Prize for two wonderful bunches of Muscat Hamburgh Grapes. The Grapes generally show remarkable finish. Mr. J. Hammond, Brayton Hall, Carlisle, showed some large Crotons, remarkable for their fine colouring and great size. Table decorations and bouquets are a leading feature, and the cut flowers are very fine with but few exceptions. The tables of plants arranged for effect are numerous. In the leading class, Ireland & Thompson, of Edinburgh, are well 1st, with a charming arrangement singularly bright and effective, having in the centre Cocos Weddelliana, and Crotons Baroness Rothschild and Queen Victoria, superbly coloured; round them are Dracænas, Crotons, Palms, Orchids, &c., edged with Ficus repens, Panicum variegatum, and Isolepis tenella. Messrs. D. & W. Croll, Dundee, are 2d, with a tasteful group; and Messrs. Clark Bros., Carlisle, 3d Mr. Hammond, gr., Brayton Hall, is 1st with the smaller group, having Palms, Orchids, Crotons, and other pretty plants rising from a bed of Maidenhair, and edged with Panicum. Mr. W. Allison Monifieth, is 2d; Mr. David Ross, St. Martin's, Perth, 3d. Mr. Hammond's 1st prize collection of twelve stove and greenhouse plants contains Crotons Queen Victoria, majesticus, and Disraeli, a grand Phœnix rupicola, Encephalartos plumosus, fine Zamia, Cycas revoluta, Bougainvillea glabra in rare form. Mr. Allison is 2d, with Crotons Queen Victoria, Andreanus, Johannis, also a very fine Phœnix prolifera, Cycas revoluta, and Statice Holfordi. 3d, Mr. David Ross. Many of the plants are unnamed, which is reprehensible in a show of this importance. Mr. Peter Marshall, Belmore, Newport, has the best six plants, including Croton variegatus, Cycas revoluta, Areca rubra, Statice profusa. These are few flowering specimens. Mr. W. Edwards, Noranside, is 2d with all foliage plants. Mr. Hammond has the best three Crotons, finely coloured specimens of Chelsoni, Etna, and a seedling in the way of Disraeli; Mr. Allison is 2d with majesticus and picturatus, very good. Mr. Hammond is 1st with six foliaged plants, including Croton Sunset, Phœnix rupicola, Dasylirion serratifolium, Chamærops humilis elegans; Crotons, Gloriosas, and Cycas plumosus; 2d, Mr. W. Allison, with Ficus Pearcei, Cycas revoluta, and Croton Weismanni, as his leading subjects. Mr. Joseph Broome, Didsbury, Manchester, is 1st with three very fine Dracænas, having Baptisti, Shepherdi, and Youngi; Mr. E. Douglas, Cockermouth, is 2d, unnamed; Mr. Hammond is 3d. Exotic Ferns are decidedly weak. Mr. Allison is 1st, and Mr. Hammond 2d; this class is stronger than the trade class, where Messrs. Cocker & Son, of Aberdeen, are 1st; Messrs. Laird & Sinclair, Dundee, 2d; Messrs. Ireland & Thompson, 3d. Three very fine Ericas are shown by Mr. Edward Boyes, Burn Park. Mr. Major is awarded the Veitch Memorial prize for the best stove or greenhouse plant—Erica Marnockiana; Mr. Allison is 2d, with much smaller plants. Messrs. Ireland & Thomson are the only exhibitors of eight Orchids, having Saccolabium Blumei, S. Dayi, Oncidium Rogersi, Lælia elegans, Odontoglossum Pescatorei, Oncidium tigrinum, Cypripedium Sedeni, C. Dominianum, and C. Haynauldianum—small but nicely managed plants. There is no entry in the class for four; in that for two Mr. Boyes is 1st, with Odontoglossum Jrande, which was awarded the Veitch Memorial prize for the best Orchid, and Mesospinidium vulcanicum. Messrs. Ireland & Thompson are 1st with twelve new plants introduced since 1880. They have Nepenthes Dominiana, Dracæna Lindeni, Dieffenbachia Jenmanni, Platycerium Hillii, and Anthurium splendidum, A. Andreanum, Selaginella grandis, Ficus elastica aureus variegatus, and Croton Thomsoni as their leading subjects. Messrs. Laird & Sinclair are 2d. They have Aralia Chabrieri, Croton Mrs. Dolman, Dieffenbachia Jenmanni, Dracæna lineata, Anthurium ferrierense, Croton Lord Chelmsford, and Lothers. There are plenty of pretty plants suitable for table decoration. Messrs. Ireland & Thomson are 1st with charming specimens well suited for table purposes; Messrs. R. B. Laird & Sons, Edinburgh, being 2d. There are classes for six and three plants also, and they are well filled. Messrs. Laird & Sinclair have the best six tuberous-rooted Begonias, nicely grown, but scarcely up to the mark of Southern quality, as illustrated by the very fine cut blooms shown on this occasion by Messrs. J. Laing & Co., of Forest Hill, and Messrs. H. Cannell & Sons, Swanley. Mr. James Johnston has the best three; Mr. T. H. Miln being 2d. Fuchsias are plentiful enough, but they are not of high-class character. Coleus are not so good as might have been expected; Mr. T. H. Miln has the best three. Nice bushy specimens of summer flowering Chrysanthemums are an interesting feature. Mr. John Collie, West Ferry, has the best four; Mr. James Brown, Dundee, being 2d. Liliums, mostly of the speciosum section, form a good feature. Mr. E. Moir, Newport, has the best two specimens, Mr. James Low, Murrayfield, 2d—both show Lilium roseum and L. album. Mr. George Davidson, Lochiel, has a very fine specimen of Lilium auratum, having about 100 flowers. Mr. E Moir has the best specimen of L. speciosum. There are classes for Tree Ferns, Palms, British Ferns, alpine plants, succulents, zonal Pelargoniums, Selaginellas, Caladiums, and others, all well filled and full of interest.

Of cut flowers ROSES are a good feature. Messrs. J. Cocker & Sons, Aberdeen, have brought some remarkably fine blooms, and are 1st with twenty-four varieties. They have Alfred Colomb, Duchesse de Morny, Charles Lefebvre, Ulrich Brüner, Baroness Rothschild, Dr. André, Etienne Levet, Louis van Houtte, Duchess of Bedford, Gloire de Dijon, Duke of Edinburgh, Mrs. Chas. Wood, François Michelon, La France, Marie Baumann, Catherine Mermet, Marie Rady, Baronne Haussmann, and Comtesse de Serenye. Messrs. D. & N. Croll, Dundee, are 2d, with nice fresh flowers of Mrs. Jowitt, Sénateur Vaisse, Helen Paul, Louis van Houtte, Duc de Rohan, Louis d'Or, Gloire de Dijon, Alfred Colomb, Catherine Mermet, Maréchal Niel, François Lacharme, Madame Dennis, Auguste Rigotard, and Duke of Edinburgh. Mr. A. H. Gray, East Ferry, has the best twelve Roses, staging excellent flowers of Comtesse de Serenye, Emile Hausberg, La France, Duchess of Bedford, Duc de Rohan, Marie Finger, Madame Victor Verdier, Perle des Jardins, Marie Baumann, Duke of Wellington, Beauty of Waltham, and Duke of Edinburgh; 2d, Mr. David Wallace, Rothesay. Mr. A. H. Gray has the best six Teas, having very pretty blooms of Alba rosea, Catherine Mermet, Madame Lambard, Marie van Houtte, Souvenir d'un Ami, and Jean Ducher; 2d, Mr. John McJames, Greystairs.

Mr. Campbell, Blantyre, has the best twenty-four DAHLIAS, setting up Vice-President, Statesman, H. Ware, H. Turner, Criterion, John Wyatt, Mrs. J. R. Jeffery, Annie Neville, George Dickson, W. H. Williams, James Cocker, James Vick, Ethel Britton, W. P. Laird, and Prince Bismarck; 2d, Messrs. James, Cocker & Sons, with Prince Bismarck, Mr. Gladstone, W. H. Williams, Lord Chelmsford, Mr. P. Wyndham, James Cocker, Clara, Emily Edwards, Aurora, George Smith, Miss Cannell, Mr. Stanscombe, George Dickson, J. N. Keynes, Joseph Ashby, Queen of Italy, Hope, Miss Henshaw, Lottie Eckford, Goldfinder, Mr. John Laing; 3d, Mr. J. Macpherson, nurseryman, Aberdeen. Mr. Walter Veitch, Carlisle, has the best twelve Dahlias, staging Grand Sultan, Royal Queen, Lord Derby, Thomas Goodwin, W. H. Williams, Ethel Britton; 2d, Mr. Thomas Hogg, Aikenhead, with W. H. Williams, Willie Austin, Prince Bismarck, Ovid, John Ashby, J. N. Keynes, and Ethel Britton. Messrs. J. Cocker & Sons have the best twelve fancy Dahlias in Mrs. Saunders, Lucy Fawcett, John Forbes, Egyptian Prince, Oracle, Mrs. H. Hall, Duchess of Albany, Jessie McIntosh, Gaiety, Magician, and Pearl; 2d, Messrs. R. B. Laird & Sons, with unnamed sorts; 3d, Messrs. Clark Brothers, Carlisle. Generally the flowers were a little deficient in the centres, but large and full. Single Dahlias were very numerous; indeed, there was a good competition in all the Dahlia classes. Messrs. J. Lamont & Son, Hope Street, Edinburgh, were 1st, with very fine and striking bunches of the following varieties:—Distinction, Beaconsfield, pale yellow (new); Columbus, orange-scarlet (new); Zulu, White Queen, Miss Cameron, mauve (new); Attraction, pale rose, yellow centre (new); Paragon, and Volunteer, striped purple (new). 2d, Messrs. J. Cocker & Sons, with charming blooms of Morning Star, Magician, Duke of Teck, Scarlet Gem, Rosy Circle, Mauve Queen, Aurora, and Amos Perry. Mr. John Ruddiman, Aberdeen, has the best six bunches, unnamed.

Mr. A. Campbell, Cove Gardens, Gourock, who showed so finely at the Crystal Palace last week, is 1st with twenty-four spikes of GLADIOLI, staging wonderful examples of Mabel, Archduchess Marie, Canova, Orpheus, Maréchal Bazaine, A. Brongniart, Caprice, Murillo, pictum, Camille, Horace Vernet, Sylvia, La Perle, giganteum, Celestine, Opal, Mary Stuart, and De Lesseps. Not a few of these are old varieties, but surprisingly fine; 2d, Messrs. Stuart & Mein, nurserymen, Kelso, who had fine spikes of Baroness Burdett Coutts, Jupiter, A. Brongniart, Maréchal Vaillant, Vesuvius, Anna, Octavia, Newton; 3d, Messrs. D. & W. Croll, Dundee. Mr. James Gray, gr. to Mrs. F. Moffat, has the best twelve spikes, showing grand specimens of Madame Desportes, Sylvia, André Leroy, Mrs. Finnis, Psyche, Ondine, Orpheus, F. G. Dougal, Panorama, Archduchess Marie; 2d, Mr. Matthew Smith, Prestwich, with a good lot also. Mr. William Kilgrove, Kincardine, has the best spikes, staging Sylvia, Celemène, Pictum, Brennus, Camille; 2d, Mr. Matthew Smith with Atlas, Crœsus, Meyerbeer, Ondine, Psyche, Mabel. The Gladioli form a very fine feature.

Mr. Campbell, Blantyre, has the best twenty-four blooms of Hollyhocks, staging very good blooms of Queen of Yellows, Aurora, Invincible, Hercules, David Foulis, Purple Prince, Mrs. Johnstone, Lady Middleton, F. G. Dougal, Standard Bearer, Robert, Martin, William Blackwood, W. Thomson, Royal Standard and Beauty. Mr. John Forbes, nurseryman, Hawick, had the best twelve spikes; Mrs. Campbell, Blantyre, 2d; Messrs. Stuart & Mein 3d. Mr. Main had the best twelve blooms in another division; Mr. John Cadzow, Crossfield, Lanark, being 2d. Mr. Peter Robinson, Jedburgh, has the best twelve seedlings; Mr. R. W. Saunders, Lismore, being 2d. Mr. G. O. Dingwall, gr. to A. Bullock, Esq., Ardoch, has the best six spikes of Hollyhocks; Mr. John Cadzow being 2d. The number of spikes and blooms show that the Hollyhock is still being much grown in the North.

There are a large number of blooms of fancy and show PANSIES, and they are remarkably good. Mrs. Campbell, Blantyre, is 1st, with a very fine lot; Mr. John Sutherland, Victoria Nursery, Lenzie, being 2d; and Mr. A. Lister, Rothesay, 3d. Mr. Andrew Jardine has the best twelve—a very fine lot, there being twenty-four competitors in the class, and so many good; 2d, Mr. J. Stewart, Lennoxtown; two equal 3d's being given. Mr. J. Stewart has the best twelve show Pansies—charming blooms; Mr. W. Storrier, Lenzie, being 2d.

There are fifteen stands of cut blooms of herbaceous plants; Carnations and Picotees, hardy annuals, Pentstemons, Phloxes, Stocks, Asters, French and African Marigolds are all very numerous and fine.

Messrs. Todd & Co., nurserymen, Edinburgh, have the best hand bouquet and the best bridal bouquet. Messrs. Jones & Son, Shrewsbury, are 2d in both classes. The latter have the best basket of flowers—a charming affair, Eliza Harvey, Perth, being 2d. Messrs. Jones & Son have the best epergne, most tastefully arranged, Miss Pitcaithley being 2d. Messrs. Jones & Son are 1st with the best table bouquet, Mr. Hugh Watson, Stirling, being 2d. Mr. James Johnston has the best wreath, Messrs. Harley & Sons, Dundee, are 2d. All these classes are well filled.

FRUITS.—As stated, Mr. J. McIndoe has the best collection of sixteen sorts of fruit, he staged Gros Moroc, Trebbiano, and Black Hamburgh Grapes; Smooth Cayenne, and Queen Pines; Princess of Wales and Violette Hâtive Peaches, Elruge and Humboldt Nectarines, Durandiau Pear, Brown Turkey Figs, Green Gage Plums, Scarlet Premier and Best of All Melons; 2d, Mr. Johnston, Glamis Castle, with Madresfield Court, Alicante, Muscat of Alexandria and Raisin du Calabre Grapes; Prince Albert and Smooth Cayenne Pines, Red Magdalen and Stirling Castle Peaches, Moor Park Apricot, Pitmaston Orange and Duc de Telliiers Nectarines, Victoria and Green Gage Plums, &c; 3d, Mr. David Murray, Culzean Gardens, Maybole. The best twelve dishes came from Mr. D. Dickson, gr. to J. B. Melville, Esq., St. Andrews, with Black Hamburgh, Gros Colmar, and Muscat of Alexandria Grapes, Barrington and Walburton Admirable Peaches, Victoria Nectarine, Moor Park Apricot, white Ischia Figs, &c.; 2d, Mr. McKelvie, Broxmouth Park Gardens, Dunbar, with Black Hamburgh, Mrs. Pince, and Muscat of Alexandria Grapes, Queen Pine, Noblesse and Barrington Peaches, Elruge Nectarine, Moor Park Apricot, Brown Turkey Figs, and Melon; 3d, Mr. David Ross, St. Martin's, Perth. The best eight sorts come from Mr. J. Day, Galloway House, Garlistown, who has Black Alicante and Muscat of Alexandria Grapes, Prince of Wales Peaches, Pitmaston Orange Nectarine, Plums, Pears, and Figs; 2d, Mr. P. W. Fairgrieve, Dunkeld Gardens, with Muscat of Alexandria and Black Hamburgh Grapes, Royal George Peaches, Welbeck Seedling Nectarine. Pears, Figs, Apricots, and Melons; 3d, Mr. A. Smith, Speddock Gardens, Dumfries. Mr. David Murray, Culzean Gardens, has the best two Queen Pines, and Mr. J. H. Goodacre, Elvaston Castle Gardens, the best two Smooth Cayennes.

It is computed that there are 500 bunches of Grapes in the show. The best eight varieties, one bunch of each, comes from Mr. David Murray, who has Mrs. Pince, Alicante, Alnwick Seedling, Barbarossa, and Madresfield Court, Golden Queen, Muscat of Alexandria, and Foster's Seedling, all in very good form; 2d, Mr. A. Kirk, gr. to J. T. Paton, Esq., Alloa, with Muscat Hamburgh, Alnwick Seedling, Alicante, Lady Downe's, Black Hamburgh, Duke of Buccleuch, Muscat of Alexandria, and Buckland Sweetwater; 3d, Mr. McKelvie, with a good lot. Mr. D. Dickson, Mount Melville, St. Andrews, has the best six bunches in Black Hamburghs, Gros Colmar, Muscat Hamburgh, Alnwick Seedling, Golden Queen, and Muscat of Alexandria; 2d, Mr. Geo. Reid, gr. to Provost Moncur, Dundee, with Gros Colmar, Muscat Hamburgh, Mr. Pirrie, Lady Downes, Barbarossa, and Muscat of Alexandria; 3d, Mr. J. Hammond, Brayton Hall, The best four bunches comes from Mr. Thomas Boyd, gr. to W. Forbes, Esq., Callander Park, Falkirk, who shows Grapes finely on this occasion, having Black Hamburgh, Muscat Hamburgh, Alicante, and Lady Downe's, all remarkably fine; 2d, Mr. J. Day, Galloway House, with Alicante, Gros Colmar, Muscat of Alexandria, and Foster's Seedling; 3d, Mr. James Louden, The Quinta Gardens, Chirk. Mr. J. McIndoe is 1st with two fine bunches of Barbarossa; Mr. D. Murray being 2d. Mr. J. Day has the best two bunches of Alicante, large and finely coloured; Mr. J. Hammond being 2d, with very good bunches. Mr. T. Boyd has the best two bunches of Black Hamburgh, very fine; Mr. A. Smith, Speddock, being 2d. Mr. J. McIndoe has the best two bunches of Gros Colmar. The two bunches of Lady Downe's shown by Mr. Boyd are superb, they ran his Muscat Hamburghs close for the Veitch Memorial prize; Mr. D. Murray is a good 2d. Mr. J. McIndoe has the best two bunches of Madresfield Court, small berries, well finished; Mr. John Hannah, gr. to Sir H. Maxwell, Bart., being 2d. Mr. D. Murray has the best two bunches of Mrs. Pince; Mr. Geo. Reid, Dundee, being 2d. Mr. T. Boyd has two superb bunches of Muscat Hamburgh; Mr. D. Dickson being 2d.

Mr. W. Murray, of Park Hill, Polmont, has the best two bunches of any other black, staging Gros Maroc; Mr. David Murray being 2d with Alnwick Seedling. Mr. David Howie, Culross, is 1st, with two bunches of Buckland Sweetwater, superbly grown; Mr. John Fraser, Baron Hill, being 2d. Mr. George Ramsay has the best two bunches of Muscat of Alexandria; Mr. J. Day being 2d, both very fine and well finished. Mr. G. Ramsay is 1st with any other white, having two beautiful bunches of White Tokay; Mr. James Dewar, Beechwood Gardens, being 2d with Duke of Buccleuch. Other notes of fruit classes must stand over until next week.

VEGETABLES are very extensively shown, and in very fine condition. The best basket of fifteen kinds comes from Mr. James Brown, gr. to C. S. Moray, Esq.

Brief details of vegetable classes and of plants to which Certificates were awarded will be furnished next week.

Massachusetts Horticultural: *Boston, Aug.* 9.—This was prize day for perennial Phloxes and Petunias. Mr. E. Sheppard took the 1st prize for Phloxes, with ten distinct named varieties, one spike each; Mr. John Parker the 1st prize for Petunias, with thirty masses. Cut flowers came from several contributors, who made extensive displays. Mr. Denys Zirnziebel exhibited a new white Aster, originated by him, a hybrid between Truffaut's and Victoria varieties, very fine in form and colour, and perfectly double, and was awarded a Frst-class Certificate of Merit. Mr. Fawkes showed a collection of flowers, among which were several varieties of annual Chrysanthemums—Torenia Fournieri, Bidens, atro-sanguinea, Anchusa capensis, Canna flaccida, C. iridiflora Ehemanni, C. Premices de Nice, Centaurea suaveolens, C. moschata, C. moschata alba, Impatiens Sultani, and a new yellow-throated Petunia. J. B. Moore & Sons exhibited hybrid perpetual Roses, and Mr. W. H. Spooner made a large display of Salet Moss Rose-buds. Mr. C. M. Hovey showed six new seedling Lilies, and L. H. Farlow a spike of Alpinia nutans, or Shell-flower, a plant belonging to Gingerworts, from Bermuda. Mr. W. H. Badlam contributed Sabbatia chloroides, one of our most beautiful wild flowers, belonging to the order Gentianaceæ, biennials, or annuals, with slender stems and white or rose-purple flowers in cymose panicles, growing on the borders of brackish ponds, along the shore from Plymouth, Massachusetts, to Virginia, and southward.

Mr. J. W. Manning was awarded 1st prize for a collection of herbaceous plants, which consisted of the following named plants:—Helianthus multiflorus, H. trachæfolius, Catananche cœrulea, Aconitum, Funkia lanceolata, Rudbeckia maxima, Aster Douglasii, Campanula carpatica, Lilium tigrinum, L. superbum, L. auratum, Eryngium alpinum, Veronica virginica, Liatris pycnostachya, Commelina virginica, Asclepias tuberosa, A. verticillata, Allium stellatum, Acacia marilandica, Achillea millefolium var. roseum, and Coreopsis rosea. Mrs. P. D. Richards exhibited thirty-two speciments of wild flowers, making 142 different species shown by her this season, not including twenty-seven species and five varieties of Ferns.

Mr. J. Fillebroun showed Beurré Giffard Pears, and was awarded 1st prize. Mr. V. Henstis exhibited splendid specimens of Sweet Bough Apples, and also took the 1st prize. A number of other varieties of Pears and Apples were shown by a number of contributors.

August 16.—The weekly exhibition held to-day was one of the most successful in variety and extent as well as in attendance of any of the weekly shows that have been given this season. This was prize day for Gladioli, and this fine flower was well represented, but would undoubtedly have been better shown had it not been for the cold rains and dull weather for the past few weeks

Mr. T. Merrifield was awarded 1st prize for twenty named varieties. The following is a list:—Addison, Leda, Norma, Le Poussin, Eugène Scribe, Giganteus, Titania, Eva, Mr. Bull, Pectinata, Victory, Leander, La France, Virginalis, Vesta, Princess Mary of Cambridge, Etendard, Le Phare, Ondine, Ariadne. Mrs. Margaret Parker showed flowers of Nelumbium speciosum, the Egyptian Lotus, and it was very much admired by the visitors. W. E. Endicott showed seedling Gladioli, a hybrid between Gladiolus gandavensis and G. purpureo-auratus, very beautiful and interesting, and very much admired. A. A. Hixon showed Drummond Phloxes, Petunias, and Sweet Peas; E. Sheppard Gloxinias and Delphiniums, John B. Moore & Son autumnal Phloxes.

A large display of Dahlias came from several contributors. J. W. Manning, Reading, Massachusetts, made a large display of herbaceous plants, all carefully named. Several contributors made large displays of cut flowers. Mrs. C. N. S. Horner exhibited a large number of wild flowers. The fruits of the season were well represented; Apples of the following varieties were shown in great abundance, namely:—Red Astrachan and Williams. The following varieties of Pears were shown, viz., Clapp's Favourite, Elizabeth, Gifford, and Brandywine. Foreign Grapes: Black Hamburgh and Muscat of Alexandria. The Taylor Blackberry, a new variety, was shown, and a dish of the Early Rivers Peach.

In the vegetable department the round purple Egg-plant, the Kohl Rabi, and the Perfection Tomato, were very noticeable, also many other kinds of vegetables.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 10, 1884

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION		WIND.	RAINFALL.
	Mean Reading Reduced to 32° Lahr	Departure from Average of 18 years	Highest.	Lowest.	Range.	Mean for Day	Departure of Mean from Average of 50 years	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.	
Sept	In.	In.	°	°	°	°	°				In.
4	29.30	—0.60	57.5	51.5	6.0	53.5	— 5.3	49.7	87	N.W.	1.12
5	29.49	—0.12	65.9	46.5	19.4	55.5	— 3.1	44.7	68	N.W.	0.00
6	29.11	—0.50	65.0	45.5	19.5	55.8	— 3.6	51.2	87	S.: S.W.	0.17
7	29.01	—0.63	65.5	51.0	8.5	56.9	— 1.6	49.9	64	N.W.	0.05
8	29.69	+0.08	65.5	51.0	11.5	57.0	— 1.3	54.0	83	N.W.: W.: S.W.	0.05
9	30.03	+0.41	69.0	47.0	22.0	58.6	+ 4.5	58.3	87	N.W.	0.00
10	30.08	+0.48	71.0	41.0	30.0	56.7	+ 2.7	54.7	81	E.	0.01
Mean	29.71	—0.21	67.5	47.4	20.8	57.3	— 1.1	51.1	80	N.W.	1.40

Sept 4.—Very wet from early morning till 2.45 P.M., fine at 3 P.M. Very fine day and night.
— 5.—Very fine day and night.
— 6.—Rain between 10 A.M. and noon. Fine afternoon. Rain in evening.
— 7.—Fine day and night. Overcast at times.
— 8.—Fine bright morning. Rain at 2.45 P.M. Fine, dull night.
— 9.—Dull day. Slight fog at night.
— 10.—Fog in early morning. Very fine day and night.

LONDON: *Atmospheric Pressure.*—During the week ending September 6, the reading of the barometer at the level of the sea decreased from 29.86 inches at the beginning of the week to 29.67 inches by 3 P.M. on the 1st, increased to 29.78 inches by midnight on the same day, decreased to 29.74 inches by 3 P.M., increased to 29.79 inches by midnight on the 2d, decreased to 29.43 inches by 9 A.M. on the 4th, increased to 29.73 inches by midnight on the 5th, and was 29.45 inches by the end of the week.

The mean reading of the barometer for the week was 29.67 inches, being 0.25 inch lower than last week, and 0.41 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 68°.5, on August 31, the highest on Sept. 4 was 57°.5. The mean of the seven high day temperatures was 64°.8.

The lowest temperature was 45°.5, on the 6th; on Aug. 31 the lowest temperature was 58°.5. The mean of the seven low night temperatures was 51°.7.

The greatest range of temperature in one day was 19°.4, on the 5th; the smallest was 6°, on the 4th. The mean of the seven daily ranges was 13°.1.

The mean temperatures were—on August 31, 62°.9, on Sept. 1st, 59°.1; on the 2d, 59°.2; on the 3d, 59°.3; on the 4th, 53°.5; on the 5th, 55°.5; on the 6th, 54°.8; of these August 31 and September 3 were above their averages by 3°.1 and 0°.2 respectively, and the rest were below by 0°.3, 0°.1, 5°.3, 3°.1, 3°.6 respectively.

The mean temperature of the week was 57°.8, being 0°.7 lower than last week, and 1°.3 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 132°, on Sept. 3. The mean of the seven readings was 106°.6.

The lowest reading of a minimum thermometer with its bulb placed on grass was 35°.5, on the 6th. The mean of the seven readings was 41°.8.

Rain.—1.86 inch rain fell on six days, of which 1°.12 inch fell on the 4th.

ENGLAND: *Temperature.*—During the week ending September 6, the highest temperatures were 71°., at Cambridge, 69°.5 at Brighton, 68°.9 at Nottingham, 62° at Sunderland, 63°.3 at Bolton, 63°.8 at Bradford. The general mean was 66°.4.

The lowest temperatures were 39° at Truro, 41°.5 at Nottingham, 41°.6 at Wolverhampton; the lowest at Brighton was 46°.8, at Liverpool 46°.6, at Hull 46°. The general mean was 43°.8.

The greatest ranges were 29° at Truro, 28° at Cambridge, 27°.4 at Nottingham; the smallest ranges were 17°.8 at Liverpool, 19° at Sunderland, and 19°.2 at Bradford. The general mean was 22°.6.

The mean of the seven high day temperatures was highest at Cambridge, 66°.8, at Truro 66°.1, at Nottingham and Hull 65°.3; and was lowest at Sunderland, 59°.8, Bolton 60°.2, and 61°.3 at Liverpool. The general mean was 63°.6.

The mean of the seven low night temperatures was

highest at Brighton 53°.3, at Plymouth 51°.9, at Blackheath 51°.7; and was lowest at Wolverhampton, 46°.4, at Bolton 46°.7, at Sunderland 47°.4. The general mean was 49°.5.

The mean daily range was greatest at Nottingham, 17°.2, at Hull 17°, at Wolverhampton 16°.3; and was least at Liverpool, 11°, at Brighton 11°.6, at Plymouth 12°.1. The general mean was 14°.1.

The mean temperature was highest at Blackheath, 57°.8, at Brighton 57°.6, at Cambridge 57°.3; and was lowest at Bolton, 51°.9, at Sunderland 52°.1, at Wolverhampton 53°. The general mean was 55°.1.

Rain.—The largest falls were 3.31 inches at Brighton, 1.86 inch at Blackheath, and 1°.70 inch at Bristol; the smallest falls were 0.36 inch at Sunderland, 0°.44 inch at Bradford, and 0°.45 inch at Leeds. The general mean fall was 0.29 inch. Rain fell on every day in the week at Brighton.

SCOTLAND: *Temperature.*—During the week ending September 6 the highest temperature was 65°.7, at Paisley, at Leith the highest was 63°. The general mean was 64°.1.

The lowest temperature in the week was 38°, at Glasgow; at Greenock the lowest temperature was 44°.2. The general mean was 41°.

The mean temperature was highest at Paisley, 54°.2, and lowest at Edinburgh, 52°.1. The general mean was 53°.1.

Rain.—The largest fall was 1.85 inch, at Dundee, and the smallest fall was 0.11 inch, at Leith. The general mean fall was 0.86 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."—BACON.

FRUIT AT GREAT ELEVATION.—I wish to try the experiment of growing fruit at a high elevation (1200 feet above sea-level) in the West of England (Dartmoor); rainfall over 50 inches, granite formation, aspect south-east. I should like the names of fruits most likely to succeed, more especially of Apples and Plums. What fruits are grown in Scotland at high elevations, and would it be the best place to get trees from? *W. P. W. S.*

Answers to Correspondents.

ADDRESS OF SECRETARY: *C. O.* The Secretary, whose office will be in the Agricultural Hall.

ADIANTUM: *T. Jannoch.* It does not differ from Bause's hybrid, A. Victoriæ.

ERRATUM.—An unfortunate blunder was committed in the article on "Audley End" in our last issue, when the words "not on water" were substituted for "not an orator." As the error involves a serious imputation, which was not in the least intended, we hasten to make the correction, and to express our regret that the error should have escaped notice.

FURZE AND THISTLES: *F. S.* By applications of guano, and by spudding them up, and mowing several times during the summer, you will in time get rid of them. Constant mowing and high manuring will check the growth of Furze, but grubbing out, if it cost more at first, will be cheaper in the end.

GROS COLMAR GRAPE: *Strebor.* Nothing certain is known of its history. Mr. Rivers, Sawbridgeworth, received it from Angers, and Mr. Standish, of Ascot, grew it and exhibited it in 1861. The sort is known in Germany as Gros Kölner, of which name Gros Colman and Cros Colmar are probably French corruptions. We shall be glad to hear more of your seedling another year.

INSECTS: *Diss.* Your large wasps are queens and large workers of Vespa rufa, and the small ones are very small workers of V. vulgaris.

LIME: *W. B.* Tilia parvifolia, the small-leaved European variety.

MARIGOLD: *M. Cuthbertson.* Fine rich colour, and of good form and size.

MUSHROOM: *E. Vesey.* The sort is quite wholesome, it being the true Mushroom. The rest of your note, about the dung of a stallion producing Mushrooms spontaneously, is nonsense. The mycelium of the true Mushroom, and of several others, have the property of growing in the manure of any corn-fed horse. It is in that way that Mushrooms are produced in manure which has not been artificially spawned—that is, which has not been sown with the germs of that species. Temperature plays an important part, as does also moisture, in the production of these low forms of vegetation, as you would find out to your cost if your Mushroom-bed material had so high a temperature as say 100° Fahr. after being spawned. Then a wondrous crop of useless or poisonous species would take the place of the one you vainly awaited.

NAMES OF PLANTS: *W. T.* Francoa sonchifolia.—*Fairpoint.* Fern, Cistopteris fragilis.—*W. Rowball.* Orchid, Læliopsis domingensis.

PHOTOGRAPH OF EDGE HALL: *Penrhyn.* The third figure was the gardener.

PLUMS AND APRICOTS: *R. B.* Washington, Green Gage Reine Claude de Bavay, Jeffersons, Coe's Golden Drop, Kirke's, Early Orleans, for Plums in your latitude; the latter, Hemskirke, Kaisha, Breda, Orange.

PYRUS: *H. K.* Please send up leaf and shoot of Pyrus named. We have not noticed the meagre growth in the Conifers you mention.

VINE LEAVES: *W.* The Vines seem to have been grown in a badly ventilated dry vinery, for we found some of the foliage burnt by sun-heat, and all was badly infested with red-spider. It is now too late to do much. You must take lessons in Vine growing from some one who is able to teach you, and so do better next year.

ZINNIAS: *R. H. Munday.* The flowers sent to us were exceedingly well formed, and of charming diversity of colour. We do not think they show more of the latter quality than the German varieties, but they seem to be quite as good in every way as the best of those.

CATALOGUES RECEIVED.

CHARLES TURNER, Slough—Bulbs and Roots.
T. S. WARE, Hale Farm Nurseries, Tottenham—Bulbs, Iris and Hardy Perennials, and Daffodils and Lilies.
G. E. ELLIOTT, 97, Bradford Road, Huddersfield—Flower Roots, Roses, &c.
EMIL LIEBIG, Dresden—Plants.
RALPH CROSSLING, Penarth, South Wales—Roses, Fruits, &c.
G. COOLING & SONS, Bath—Bulbs, &c.
ALF. BARKER, 131, Holloway Road, London—Bulbs.
DAMMAN & Co., Portici, Naples—Trade Catalogue of Seeds.
LOUIS VAN HOUTTE, Ghent—Plants.
JAMES MACKAY, Dublin—Bulbs.
CARTER, PAGE & Co., 53, London Wall—Bulbs.
TILLIE & TURNER, 12, Melbourne Place, Edinburgh—Bulbs.
JOS. SCHWARTZ, Lyons—Roses.
JAMES YATES, Stockport—Flowering Roots and Bulbs.
W. BAXTER, Inverness—Bulbs.
THE NEW PLANT AND BULB CO., Colchester—Lilies, Orchids, Bulbs.

COMMUNICATIONS RECEIVED:—A. R.—W. T. T. D.—C. B. P.—A. W. B.—J. F.—J. F. J.—H. E.—R. S. D.—Canada.—W. J. P.—Engadine.—Prof. Savastano.—L. W. W.—J. Laing & Co.—A Competitor,—J. Muir,—L. W. W.—W. Kerr (next week).

Markets.

COVENT GARDEN, September 11.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

NOTHING special to quote this week. Trade keeps quiet, with heavy supplies. Prices of outdoor fruit generally well maintained. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	1 6
Figs, per dozen	0 6	0 9	Pine-apples, Eng., lb.	4 0	5 0
Grapes, per lb.	0 6	2 6	Peaches, per doz.	1 0	8 0
Kent Filbts., 100 lb.	60 0	65 0	Plums, ½-sieve	4 0	9 0
Lemons, per case	21 0	..	Pears, French, doz.	1 0	1 9

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0	Lettuces, Cabbage, per dozen	1 6	..
Aubergines, each	0 4	..	— Cos, each	0 2	..
Beans, French, lb.	0 4	..	Marrows, each	0 2	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Cabbages, per doz.	1 6	2 0	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 6	..	Onions, per bunch	0 6	..
Cauliflowers, English, dozen	3 0	4 0	— Spring, per bun.	0 6	..
Celery, per bundle	1 6	2 6	Parsley, per bunch	0 9	..
Cucumbers, each	0 6	1 0	Peas, English, quart	1 6	..
Endive, English, per dozen	1 0	..	Radishes, per doz.	1 6	..
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	3 0	..
Horse Radish, bund.	3 0	4 0	Tomatos, per lb.	1 0	..
			Turnips, new, bun.	0 8	..

POTATOS.—Kent Regents, 80s. to 100s.; Magnums, 70s. to 80s. per ton. Trade very dull

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Lapageria, red, 12 blooms	1 0	2 0
Arum Lilies, 12 blms.	3 0	6 0	Lavender, 12 bun.	6 0	8 0
Asters, 12 bunches	3 0	6 0	Marguerites, 12 bun.	3 0	6 0
Bouvardias, per bun.	0 9	1 0	Mignonette, 12 bun.	1 0	4 0
Calceolaria, 12 sprays	0 4	1 0	Pelargoniums, per 12 sprays	0 6	1 0
Carnations, 12 bun.	2 0	6 0	Primula, double, bun.	1 0	1 6
Chrysanth., 12 bun.	3 0	9 0	Pyrethurm, 12 bun.	2 0	6 0
— large, 12 blooms	3 0	6 0	Rhodanthes, 12 bun.	4 0	6 0
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	4 0
Dahlias, 12 bunches	3 0	6 0	— (outdoor), 12 bun	2 0	6 0
Eucharis, per doz.	4 0	8 0	— coloured, doz.	4 0	9 0
Forget-me-not, 12 bunches	2 0	6 0	Stephanotis, 12 spr.	4 0	8 0
Gardenias, 12 blms.	3 0	6 0	Stocks, 12 bunches	3 0	6 0
Gladiolus, various, 12 bunches	6 0	12 0	Sweet Peas, 12 bun.	1 6	4 0
Heliotropes, 12 sp.	0 6	1 0	Sweet Sultan, 12 bun.	2 0	4 0
Lapageria, white, 12 blooms	2 0	3 0	Tuberoses, per doz.	0 6	1 0
			White Jasmine, bun.	0 6	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Foliage Plants, various, each	2 0	10 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Fuchsias, per doz.	3 0	6 0
— (common), dozen	6 0	12 0	Heliotrope, doz.	3 0	6 0
Asters, per dozen	3 0	6 0	Hydrangea, per doz.	9 0	18 0
Begonias, per doz.	4 0	12 0	Lilium longiflorum, per dozen	6 0	18 0
Bouvardia, dozen	9 0	18 0	— lancifolium, doz.	6 0	18 0
Chrysanth., dozen	4 0	9 0	— auratum, doz.	12 0	24 0
Cockscombs, doz.	2 6	4 0	Marguerite Daisy, per dozen	8 0	12 0
Coleus, various, doz.	2 0	4 0	Mignonette, per doz.	3 0	6 0
Cyperus, per dozen	4 0	12 0	Myrtles, per doz.	6 0	12 0
Dracæna term. doz.	30 0	60 0	Palms in variety, each	2 6	21 0
— viridis, per doz.	12 0	24 0	Pelargoniums (show), per dozen	4 0	9 0
Erica, various, per dozen	9 0	18 0	— scarlet, per doz	2 0	6 0
Euonymus, various, per dozen	6 0	18 0	Petunias, per dozen	3 0	6 0
Evergreens, in var., per dozen	6 0	24 0	Rhodanthes, p. dozen	4 0	6 0
Ferns, in var., dozen	4 0	18 0	Solanums, dozen	9 0	15 0
Ficus elastica, each	1 6	7 0			

SEEDS.

LONDON: *Sept.* 10.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that there is an active business now passing in those kinds of seeds wanted for present sowing. Trifolium, which is getting somewhat scarce, meets an improved demand at enhanced rates. Of winter Tares the offering is falling off, and quotations are consequently exceedingly firm. Sowing Rye realises full rates. Some samples of choice new American red Clover seed have just arrived, but no transactions therein have yet taken place. Canary seed is steady: for Hemp seed, owing to some arrivals, lower prices are being taken. In blue Peas there is no change. Feeding Linseed firm.

CORN.

At Mark Lane on Monday the inquiry for Wheat was very restricted, and prices hardly held their own. The trade in flour was much the same, English remaining about unaltered. Of foreign Wheat and flour the tendency of prices was weak. The Barley trade was very dull, and prices favoured buyers. Beans met very little inquiry, and rates were without quotable change. Peas closed 1*s.* lower on the week. For Oats last Friday's improved rates were asked, but the close was dull at figures not up to that day's currency, but narrowed the advance on the week to 3*d.*—On Wednesday trade was dull all round. English Wheat was very dull of sale, without quotable change in value; foreign difficult to sell even at reduced rates. Barley was weaker for grinding descriptions. Beans and Peas were unaltered and inactive. For Oats the market was weak, and Maize was dull and unchanged.—Average prices of corn for the week ending September 6:—Wheat, 34*s.* 3*d.*; Barley, 32*s.* 3*d.*; Oats, 20*s.* For the corresponding period last year:—Wheat, 41*s.* 3*d.*; Barley, 32*s.* 10*d.*; Oats, 20*s.* 11*d.*

CATTLE.

At the Metropolitan Market cattle supplies were fairly good, and included a full proportion of first quality beef, for which the demand was steady; secondary sorts were dull, and not in all cases supported. Of sheep the number was small, and prices mostly 2*d.* per 8 lb. higher. Calves sold slowly. The pig trade was written unchanged. Quotations:—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 4*s.* 4*d.* to 5*s.* 8*d.*; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*; pigs, 4*s.* to 4*s.* 8*d.*—Thursday's trade was dull. Beasts sold slowly at drooping prices. Sheep were dull and weak, and calves and pigs without change.

HAY.

Tuesday's Whitechapel Market report states that supplies were short, in consequence of the recent heavy rain. Top price of Clover and hay advanced 2*s.* respectively, and straw, which was in strong request, 2*s.* Quotations:—Clover, first quality, 95*s.* to 117*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 115*s.*; hay, first quality, 80*s.* to 97*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 38*s.* per load.—On Thursday there was a good supply with a fair trade, and prices were firm, especially for Clover, which was somewhat dearer.—The Cumberland market report states that there has been rather more demand for best new. Prices:—Clover, prime old, 100*s.* to 112*s.*; inferior, 60*s.* to 75*s.*; hay, prime old, 80*s.* to 90*s.*; new, 70*s.* to 86*s.*; and straw, 30*s.* to 35*s.* per load.

POTATOS.

The average of prices during the past week were as follows:—Magnum Bonums, 70*s.* to 100*s.*; kidneys, 75*s.* to 90*s.*; Roses, 70*s.* to 90*s.*; and Regents, 80*s.* to 90*s.* per ton.

COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 14*s.* 9*d.*; East Wylam, 15*s.*; Walls End—Hetton, 17*s.* 6*d.*; Hetton Lyons, 15*s.* 6*d.*; Binchester, 15*s.* 6*d.*; East Hartlepool, 16*s.* 9*d.*; South Hartlepool, 15*s.* 9*d.*; Tees, 17*s.* 6*d.*; Lambton, 17*s.*; Wear, 15*s.* 6*d.*

Government Stock.—Consols closed on Monday at 101 1/16 to 101 3/16 for delivery, and 101 3/16 to 101 5/16 for the account. Tuesday's figures were 101½ to 101¾ for delivery, and as on the previous day for the account. The closing quotations of Wednesday and Thursday were 101¾ to 101⅞ for delivery, and 101⅞ to 102 for the account.

THOMAS GREEN & SON

(LIMITED),

Smithfield Ironworks, Leeds,

And Surrey Works, Blackfriars Road, London, S.E.,

Horticultural Engineers to Her Majesty the Queen,

CALL SPECIAL ATTENTION TO THEIR

PATENT

WROUGHT-IRON TUBULAR

HOT-WATER BOILERS,

And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

SADDLE BOILERS,

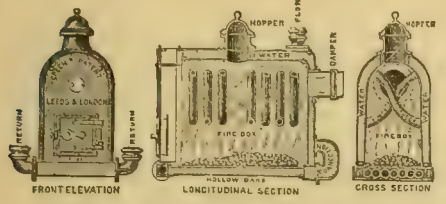
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3, 1881.



The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

Descriptive Illustrated Price List may be had free on application.

Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice. Galvanized Iron Cisterns, from 4*d.* to 1*s.* 6*d.* per gallon.

FOR GLASS HOUSES. **HUGHES' GREEN SHADING.**

Convenient, Inexpensive, Easily applied, Lasts all the Summer, and can then be easily washed off. 1*s.*, post 1/3.

For Fixing Bloom in Azaleas, &c., and for Cut Flowers. **HUGHES' FLORAL CEMENT.**

A great boon to Florists and all lovers of Flowers. Dries instantly. Sold in bottles, 1*s.* & 2*s.* Per post, 3*d.* extra.

HUGHES' STYPTIC

For Preventing Vines Bleeding after Pruning. Very effectual in preventing the flow of sap in Vines being wasted. In bottles, 1/6 and 2/6. Per post, 3*d.* extra.

For Destroying Beetles, Cockroaches, Crickets, Bugs, Fleas, Mosquitos, &c. **HUGHES' TROPICAL BEETLE POWDER**

Most effectual in Greenhouses,—for Animals and Bed Clothing. Price 6*d.*, 1*s.* & 2*s.* 6*d.* Per post, 3*d.* extra.

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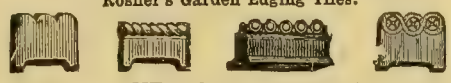
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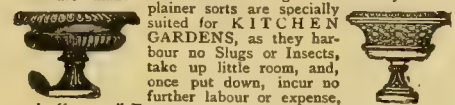
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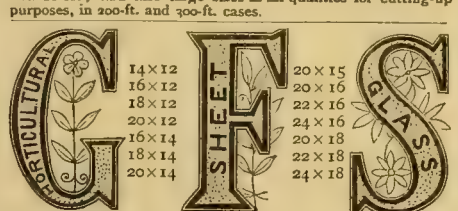
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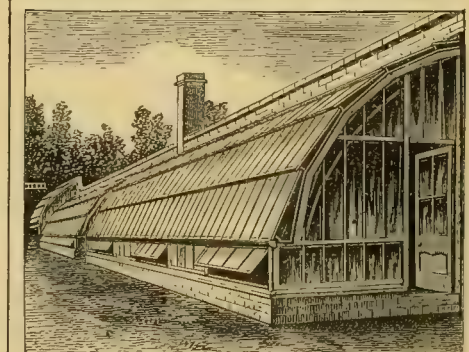
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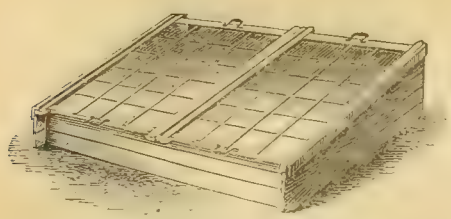
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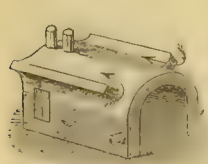


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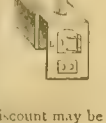
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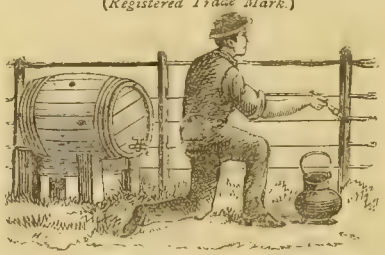
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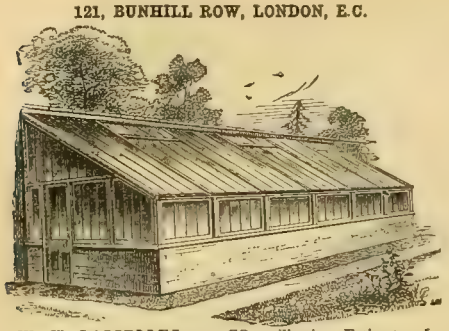
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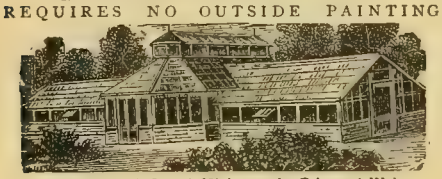
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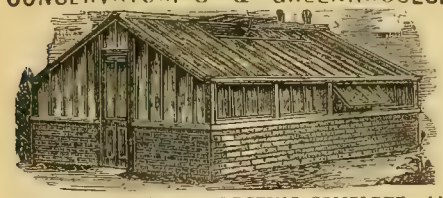
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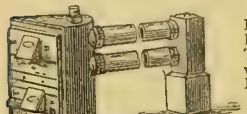
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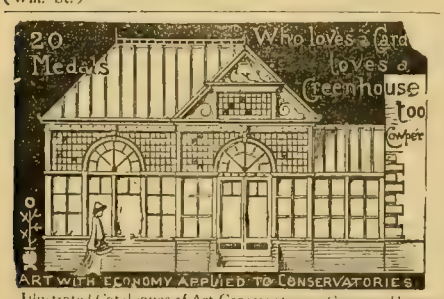
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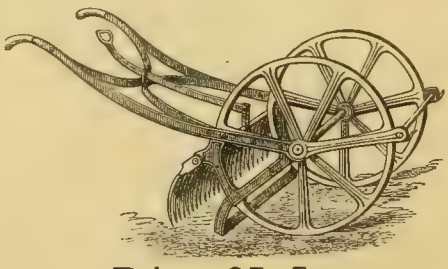
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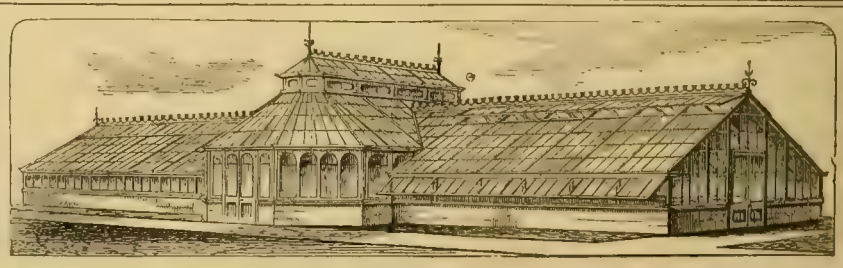
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 560.—Vol. XXII. {New Series.} SATURDAY, SEPTEMBER 20, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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Hyacinths, Tulips, Crocus, Lilies, &c.
C. G. VAN TUBERGEN, Jun., Haarlem, Holland. Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD and SON, 25, Savage Gardens, Crutched Friars, London, E.C.

STRAWBERRIES—STRAWBERRIES.—Purchaser's selection, strong runners from ground, 3s. 6d. per 100; our ditto, 2s. 6d. per 100; 500 for 10s. 6d. Plants in 2½-inch pots, 12s. 6d. per 100; in 5-inch pots, 25s. per 100. All the principal sorts grown, including British Queen, Dr. Hogg, Jas. Veitch, Keens' Seedling, President, Sir C. Napier, Sir J. Paxton, Stirling Castle, Vicomtesse H. de Thury, and thirty other varieties. Catalogues on application,
WM. CLIBRAN and SON, Oldfield Nursery, Altrincham

Strawberries (true to name).
CRANSTON'S NURSERY and SEED COMPANY (Limited) have a large quantity of Runners and Pot Plants to offer, and will be pleased to send a Priced LIST on application
King's Acre, Hereford.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy, and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL and SON, Strawberry Growers, Driffield.

STRAWBERRIES, very strong, in large 60's, either for potting on or planting out, price 15s. per 100, free to London. LIST, Trade Terms, &c., on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

STRAWBERRIES.—Strong Roots, 4s. per 100. Plants, in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

VINES, PEACHES, NECTARINES, and APRICOTS in Pots. The leading kinds.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

WILLIAM DENMAN, Salesman and Horticultural Agent, Covent Garden, W.C., begs to inform Senders that the Cut Flower Season will now be coming on, and will be pleased to Advise Applicants for Boxes, &c.

SQUELCH and BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH and BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH and BARNHAM.
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WISE and RIDES, Fruit and Flower Salesmen, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.
BASKETS, BOXES, LABELS, and Directions for Packing forwarded upon application.

To Nurserymen, Private Growers, &c.
A. CATTANEO, Commission Salesman, 44, Hart Street, and New Flower Market, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantities. Terms on application.

WANTED, a Collection of NATURAL GRASSES, with Popular and Scientific Names. FESTUCA. *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, the ADDRESS of NURSERY GROUNDS, within an hour's rail of London (Surrey side)—Speciality, Forest Trees of good size, for filling up garden; also tall Hollies for making hedge of some extent.
M. M., Mr. Wagner's, 12, Archer Street, Kensington Park, W.

CENTAUREA CANDIDISSIMA.—The most beautiful of white foliaged bedding plants—easily raised from seed, which is the cheapest way to obtain a stock. 1s per packet (about 100 seeds), 2s 6d. per packet (about 300 seeds).
HOOPER and CO., Covent Garden, London, W.C.

Early Flowering Bulbs.
HURST and SON have Stocks of the following, and are prepared to make Special Offers on application:—
HYACINTHS, Early White Roman (new arrival, fine).
,, Early Italian
LILIUM CANDIDUM. ANEMONE FULGENS.
Seed Warehouse, 152, Houndsditch, London, E.

FOR SALE, 10 large CAMELLIAS, 6 large AZALEAS, 10 CALANTHE VEITCHII, 10 CALANTHE VESTITA, 14 PHAIUS GRANDIFOLIUS. For price, &c., apply to
S. DANIEL, Gardener, Elsham House, Grantham.

PRIZE FANCY PANSIES—24 Cuttings, 12 best competition varieties, 4s., including Catherine Agnes, William Cuthbertson, Archibald Grant (new, 1884), Dr. Paterson, Beaconsfield, and other new, rare, and good sorts. 12 Cuttings, 6 splendid varieties of 1884, for 4s.—a rare chance, as these were 5s. each in spring.
M. CUTHBERTSON, Florist, Rothesay.

Winter Flowering Tree Carnations.
W. HOWARD, Southgate, N., can supply good strong well furnished Plants, from the open ground, of all the varieties worth growing, including the new ones of this year also:—ADIANTUM cuneatum, in 48's and 32's, very good; do. farlevensis, in 48's. CYPERUS alternifolius variegatus. DRACÆNA striata, Green, a fine variety for Conservatory. GARDENIAS in all sizes. STEPHANOTIS in all sizes. ASPIDISTRA lurida variegata.

BARR'S DAFFODILS.—A beautiful Illustrated LIST, describing more than 450 varieties, free on application.
BARR and SON, 12 and 13, King Street, Covent Garden, W.C.

ROBERT and GEORGE NEAL beg to inform Gentlemen, Builders, and all who may be intending to Plant Trees and Shrubs, &c., this autumn, that their stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS, is specially fine, and that the present time is the best to view and select the same, both as regards foliage and flower. A personal visit to the Nurseries earnestly solicited.
The Nurseries, Wandsworth Common, S.W.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

BULBS for FORCING, CALOCHORTI, CARNIVOROUS PLANTS, GLADIOLI, Hardy FERNS and ORCHIDS, Hardy NORTH AMERICAN PLANTS in great variety, IRIS, Japanese MAPLES, LILIES, NARCISSI, ORCHIDS, Filmy FERNS, NEW ZEALAND SEEDS, Rare MOSSES, NEW PLANTS. See our LIST No. 71, just issued.
NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

Dutch and other Bulbs.
CHARLES TURNER'S CATALOGUE is now ready.
The first consignment is to hand in excellent condition.
The NEW ROSE CATALOGUE is in the Press.
The Royal Nurseries, Slough.

EUPHORBIA JACQUINIFLORA, strong plants, with about six breaks, in 4½-inch pots, 70s. per 100 For cash only.
TURNER BROS., Nurserymen and Florists, Green Hill Nursery, Allerton, Liverpool.

SPECIAL CASH OFFER, of well established healthy plants—6 good varieties of BOUVARDIA, including Alfred Neuner and President Garfield, 3-in. pots, 5s. per dozen; 5-in. pots, 9s. per dozen.
ROSES, Maréchal Niel, 2 feet, 5-in. pots, 9s. per dozen.
CROTON, 6 good varieties, 5-in. pots, 12s. per dozen.
ADIANTUM CUNEATUM, 5-in. pots, first-rate stuff, 9s. per dozen.
W. BARRACK, Castle Gardens, Kendal.

ADIANTUM CUNEATUM, very strong, in thumbs, 20s. per 100; well established in 48's, 70s. per 100. TEA ROSES, ISABELLA SPRUNT and SAFRANO, good plants, in 5-inch pots, 9s. per dozen.
All for cash only.
ROBERTS BROS., East Grinstead, Sussex.

Established 20 years.
HERBACEOUS PÆONIES.
Now is the time to plant.
A very select Collection of about 60 choicest varieties, in various shades of Primrose, Lemon, Pink, Rose, White, Crimson, &c., many of them sweetly scented. Extra strong blooming plants 9s., 12s., and 18s. per dozen.
J. J. MARRIOTT, Highfield Nurseries, Matlock.

SALES BY AUCTION.

Sales Every Monday, Thursday, and Saturday.

DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Clapham, S.W.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Rose Nursery, 30, High Street, Clapham, S.W., near the Clapham Road Railway Station, on TUESDAY, September 23, at 12 o'Clock precisely, by order of Mr. G. B. Fischer, the Surplus Stock of STOVE and GREENHOUSE PLANTS, the whole of which are remarkably well grown, and in the best health and condition, including Aspidistras, Hoyas, Stephanotis, Dracænas, Ficus, Gardenias, Camellias, Azaleas, a fine assortment of Palms and Ferns, two nearly new; Conical Boilers, &c.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Ealing, W.

ABSOLUTE SALE of the whole of the STOCK in TRADE, Horses, Van, and effects, without the slightest reserve.

IMPORTANT to the TRADE.

MESSRS. PROTHEROE AND MORRIS having sold the Nursery are now instructed to SELL by AUCTION on the premises, the Haven Green Nursery, Ealing, W., about ten minutes' walk from the Ealing Railway Stations, on WEDNESDAY, Sept. 24, at 12 o'Clock precisely, the whole of the well grown GREENHOUSE PLANTS, including about 20,000 Maidenhair Ferns in No. 24, 32, 48 and 60 pots; Bouvardias, 1000 Lomaria gibba, 2300 Cyperus, 2000 Marguerites, 800 Azaleas, 4000 Geraniums, Palms, Pinks, Carnation, Chrysanthemums, Evergreen and Deciduous Shrubs, two HORSES, VAN, UTENSILS in TRADE, and numerous effects.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises: of Messrs. M. & H. TURNER, Solicitors, 22, Sackville Street, W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Brixton, S.W.—Thursday and Friday Next.

Five minutes' walk from Loughborough Junction Station, and only 2½ miles from the City or West End.

Sale of the VALUABLE LEASE, PLANT, HOUSEHOLD FURNITURE, and effects.—Two Days' Sale.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Dowling (who is retiring) to SELL by AUCTION, on the Premises, the Swiss Nursery, Angel Road, Brixton, S.W., on THURSDAY and FRIDAY, September 25 and 26, at 12 o'Clock precisely, the beneficial INTEREST in the LEASE of the NURSERY, comprising Half an Acre of Ground with 7 Greenhouses, held for an unexpired term of nearly Forty Years at a quit-rent of only 1s. per annum. Also the Interest in the Agreement for Lease of piece of GARDEN GROUND, situate in Arlington Place, with 3 Greenhouses. Immediately following the Sale of the Leases will be offered in lots the whole of the GREENHOUSE PLANTS, large Azaleas and Camellias Palms, Ferns, Shrubs, and UTENSILS in TRADE; also the HOUSEHOLD FURNITURE, and EFFECTS, comprising about 160 lots of the usual description.

May be viewed (the furniture only) one day previously to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The FIRST DAY'S SALE will comprise the LEASES, PLANTS, and OUTDOOR EFFECTS. SECOND DAY, HOUSEHOLD FURNITURE.

Friday Next.

VERY VALUABLE IMPORTATIONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 26, at half-past 12 o'Clock precisely, a grand lot of VANDA SANDERIANA, CALANTHE VEKATRIFOLIA, superb masses of CATTLEYA DOWIANA and GIGAS IMPERIALIS, ODONTOGLOSSUM ALEXANDRÆ, several plants of a superb form of AERIDES in flower, two lovely SOBRALIAS of very dwarf habit, and some fine NEW ORCHIDS.

On view morning of Sale, and Catalogues had.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in Flower will take place on TUESDAY, September 30, and they will be glad to receive an intimation from Gentlemen desirous of including Lots on or before the 20th inst.

Sale 217.

HIGHLY IMPORTANT UNRESERVED SALE of the well-known COLLECTION of ESTABLISHED ORCHIDS, formed by Oscar Lamarche, Esq, of Liège, and enjoying a reputation probably unequalled on the Continent.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above Collection by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 7, at half-past 12 o'Clock precisely. Many grand things will be included, amongst others may be mentioned:—

Vanda Lowi, an unique specimen with thirty-two leaves	Cattleya Gaskelliana, white variety
Dendrobium Shrœderi	,, Frianæ alba
,, Gimberti	Anguloa Ruckeriana
Cypripedium Haynaldianum	Cœlogyne Massangeana vera
,, Stonei	Oncidium tetraœpis
,, Domnianum	Vandas in variety, a grand lot
Masdevallia troglodytes	Lælia Perrini
Lælia superbiens	

Catalogues may now be had on application at 67 and 68, Cheapside, E.C.

Brighton.

By order of the Executors of the late Mr. Thomas Killick.

IMPORTANT CLEARANCE SALE of NURSERY STOCK, PLANTS, HORSES, FURNITURE, and Effects.

To Gentlemen and others intending Planting this season.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Mr. G. Attree) are instructed to SELL by AUCTION, on the Premises, The Nursery, Dyke Road, Brighton, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely each day, the whole of the beautifully grown NURSERY STOCK, which is in capital condition for removal, comprising thousands of Border Shrubs in fine assortment, 4500 Aucubas, about 400 of which are unusually fine plants, from 3 to 4 feet high; 15,000 Dwarf Roses, Standard Roses, Fruit Trees in variety, large quantities of Limes, Poplars, and other Ornamental Trees, the whole of the Greenhouse Plants, sixty unglazed SASHES, AGRICULTURAL IMPLEMENTS, HORTICULTURAL REQUISITES, capital WAGGON, TUMBRIL and Spring CARTS, Bay GELDING, Chestnut PONY, Bay PONY, HARNESS, and the remaining HOUSEHOLD FURNITURE, WARDROBE, CHIMNEY-GLASSES, and other items of the usual description.

May be viewed any day prior to the Sale. Catalogues are now ready, and may be had on the Premises; of Messrs. CLARKE AND HOWLETT, Solicitors, 8, Ship Street, Brighton; at Mr. ATTREE'S Offices, 136, North Street, Brighton; and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. To be SOLD, the valuable FREEHOLD BUILDING ESTATE, being that portion of the Nursery situate on the eastern side of Dyke Road, with the Dwelling-house standing thereon, and having an area of about 4 Acres, with a frontage of 300 feet to Dyke Road, particularly eligible for the erection of superior residences. For particulars and terms apply to Mr. ATTREE, or Messrs. PROTHEROE AND MORRIS, as above.

Wimbledon, S.W.—Preliminary Notice.

GREAT CLEARANCE SALE of unusually well-grown NURSERY STOCK, in consequence of the expiration of the Lease of a portion of the Home Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. D. S. Thomson to SELL by AUCTION, on the Premises, The Nursery, Wimbledon, on MONDAY, October 20, and three following days, about 10 Acres of remarkably well-grown Nursery Stock.

Further particulars of which will be Advertised.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Highly Important Sale of Specimen Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 25, at half-past 12 o'Clock precisely, the entire COLLECTION of ORCHIDS formed by the late T. D. Cunningham Graham, Esq., Dunlop House, Dunlop, Ayrshire, and now belonging to his late Gardener, Mr. D. Kemp, who intends to dispose of the whole entirely without reserve. The collection comprises, amongst other rare and valuable things:—

Angræcum sesquipedale, very large, 4 feet high	Vanda Sanderiana, well-rooted plant
Miltonia Clowesii majus, 2 feet across	Cypripedium caudatum, 2 feet across
Vanda Lowii, splendid healthy plant	Dendrochilum filiforme
Cypripedium grande, two strong growths	Cœlogyne Massangeana
Cattleya Trianæ Massangeana	Vanda suavis (Veitch's var.)
Cypripedium selligerum majus	Masdevallia Harryana splendens
,, punctatum violaceum	Cypripedium microchilum
Vanda suavis, Manchester var.	,, insigne Maulei
Zygopetalum Sedeni	,, euryandrum
Cypripedium albo-purpureum	Dendrochilum densiflorum
Lælia anceps Hilli	,, Guibertii
Vanda Lowii, splendid plant	,, thyrsiflorum Walkerianum
Lælia anceps Barkerii	Epidendrum prismatocarpum "Veitch"
Cypripedium marmorophyllum	Vanda insignis, true
Lælia purpurata alba	Cymbidium Lowianum, fine
Sobralia zantholeuca, true	plant of Russel's var.

Also other magnificent specimen VANDAS, a grand plant of CYPRIPEDIUM DOMINIANUM, with over 30 young growths; splendid specimen CATTLEYA INTERMEDIA, over 100 Bulbs and 20 young growths; AERIDES, SACCOLABIUMS, CŒLOGYNES, ODONTOGLOSSUMS, LÆLIAS, ONCIDIUMS, PHALÆNOPSIS, CALANTHES, a few NEPENTHES, &c., all in the grandest possible health.

On view morning of Sale, and Catalogues had.

Waltham Cross, N.—Without Reserve.

MR. J. TYDEMAN will SELL by AUCTION, on TUESDAY, September 23, at 2 o'Clock sharp (unless a suitable offer is previously made for the Whole Collection), at the Nurseries, Waltham Cross, a VALUABLE COLLECTION of SPECIMEN STOVE and GREENHOUSE PLANTS, the property of Mr. E. Tudgey, of the "Exotic" Nurseries, Waltham Cross (late of Worcester), and sold in consequence of his giving up Exhibiting, including well grown specimens of Azalea indica, Cape Ericas, Genetyllis, Aphelexis, Phœnocomas, Dracophyllums, Stephanotis, Allamandas, Clerodendrons, Francisceas, Rondeletias, Specimen Palms, Anthuriums, Crotons, &c.; also a quantity of hard-wooded Heaths in 6-inch pots, and Palms in 4-inch pots. This well-known collection has taken first prizes at the London and Provincial Shows, viz.:—Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in the country. Also two Exhibition Plant VANS, in good repair.

Full particulars of Mr. J. TYDEMAN, Auctioneer and Valuer, Waltham Cross, N.

Melbourne Nursery, Anerley.

Lately occupied by the General Horticultural Company.

MESSRS. MEAKIN, MAY AND MAY will SELL or LET by AUCTION, at the Mart, Tokenhouse Yard, E.C., on TUESDAY, September 23, at 2 o'Clock, the above valuable FREEHOLD PROPERTY, covering over 2 Acres, and having Greenhouses and Conservatories (over 20,000 feet of glass), Engine, Furnaces, Manager's House, &c., all in working order. Excellent frontages to main roads.

Particulars, Plans, and Conditions at the Mart, of Messrs. JESSOPP AND SON, Bedford; and of the Auctioneers, 111, Anerley Road, Anerley, S.E.

To Gentlemen, Nurserymen, and others Planting.

SALE of a most valuable and extensive COLLECTION of ORNAMENTAL TREES, SHRUBS, CONIFERÆ, and FRUIT TREES.

MR. THOS. NEALE, has received instructions from Messrs. J. Frettingham & Son, of Stapleford, near Sandiacre Station, Notts, to SELL by AUCTION, on Tuesday, September 23, at 1 o'Clock, on a portion of land recently sold by them, and which has to be cleared, 5000 to 6000 Gold and Silver Queen HOLLIES, from 1 to 3 to 5 feet, all upon their own roots, including some very fine specimens—a magnificent lot; 800 Portugal and Common LAURELS, 200 English YEWS, THUIOPSIS DOLABRATA, 500 RHODODENDRONS, PINUS AUSTRIACA, Weeping ELMS, CUPRESSUS, RETINOSPORA PLUMOSA AUREA, 200 LAUREL ROTUNDIFLORA, AUCUBA JAPONICA, Standard and Pyramid APPLES, best known varieties, in bearing condition; Specimen CEDRUS DEODARA, ARAUCARIA IMBRICATA, 9 to 12 feet high, the whole in splendid condition for removal, having been frequently transplanted.

The place of sale is situate near the Stapleford Nurseries, about ten minutes' walk from the Sandiacre Station, on the Erewash Valley Railway.

Descriptive Catalogues may be had on application, by post or otherwise, to the Auctioneer, Wheelergate, Nottingham; and of Messrs. FRETTINGHAM AND SON, Bromley House, Nottingham; the Stand, Arcade, Derby; and at the Stapleford Nurseries.

Eccleston Nursery, Prescot.

IMPORTANT SALE of excellent NURSERY STOCK, HOLLIES, RHODODENDRONS, AUCUBAS, ANDROMEDAS, YEWS, LIME TREES, CAMELLIAS, CONIFERÆ, and other valuable productions, which have been transplanted within three years.

MESSRS. ARTINGSTALL AND HIND are instructed by Mr. John Stead, to SELL by AUCTION, on WEDNESDAY, September 24, at 12 o'Clock prompt, at Eccleston Nursery, Prescot, Lancashire, about 3000 valuable EVERGREENS and SHRUBS.

The whole may be inspected one week prior to Sale, and Catalogues obtained from Mr. STEAD, or now on application to the Auctioneers, 45, Princess Street, Manchester.

435, Fulham Road, West Brompton, S.W.

MESSRS. HENRY OUGHTON AND SON will SELL by AUCTION, on the Premises, as above, on FRIDAY, September 26, at 1 o'Clock precisely, about 1000 PLANTS, GREENHOUSES, HOTHOUSES, FRAMES, LIGHTS, Stained GLASS SUMMER-HOUSE, FOUNTAINS, FLOWER-STANDS, GARDEN ROLLER, TOOLS, and SUNDRIES.

On view the day previous and morning of Sale. Catalogues may be had on the Premises and of the Auctioneers, 165, Sloane Street, S.W.

Great Clearance Sale of First-class Nursery Stock.

MESSRS. MORRISON BROTHERS, Forbesfield Nursery, Aberdeen, being obliged to clear about 20 Acres of their Land, have decided to SELL the greater part of their valuable Stock by AUCTION, on THURSDAY, FRIDAY, and SATURDAY, October 2, 3, and 4. They will offer, in Lots to suit purchasers, upwards of 30,000 Dwarf ROSES, all of the finest varieties; 10,000 fine named RHODODENDRONS, 20,000 GOOSEBERRIES and CURRANTS, many hundred thousand fine CONIFERS, TREES and SHRUBS of all sizes, all of which, having been kept frequently removed, cannot fail to give satisfaction.

A List is now being prepared, and will be sent, when ready, free to any address on application. Intending planters will do well to examine the Stock previous to Sale.

Sept. 2, 1884.

Royal Oak Nursery, Goldsworth, Woking.

Close to Goldsworth Old Nursery. 1 mile from Station of London and South-Western Railway.

EXPIRATION OF LEASE.—CLEARANCE SALE.

MR. H. W. COPUS is favoured with instructions from Mr. Newey, who is giving up Business in consequence of Expiration of Lease, to SELL by AUCTION, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely, the whole of the fine grown NURSERY STOCK, comprising 20,000 (6 in. to 2½ ft.) Rhododendrons and Stocks, 2000 Aucuba japonica, 5000 Green and Variegated Holly, 1 to 7 ft.; Perry's Weeping and Golden Holly, 1000 Roses, standard and half-standard, true to name; 5000 Ligustrum ovalifolium, 2 to 4 ft.; Cotoneaster Simonsii, 4000 Spruce Firs, 10,000 Common Laurels, 6-in. to 3 ft.; Laurustinus, 10,000 Chestnut, 2 to 5 ft.; 4000 Yews, 2 to 6 ft.; fine well furnished Green and Variegated Box, Lawsoniana viridis, 2 to 4 ft., Deutzia gracilis, large quantity of well-grown Specimen and Border Plants, Flowering Shrubs, Virginian Creepers, Ivies, Gooseberries, Currants, &c.

Catalogues can be had post-free of the Auctioneer, 16, Friary Street, Guildford, Surrey, or at the Nursery, Woking, Surrey.

Preliminary Announcement.

WHITTINGTON NURSERIES, near LICHFIELD.

MR. GEO. MARSDEN is instructed by Mr. Holmes to SELL by AUCTION, at the above Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, 1884, commencing at 10 o'Clock each day, a magnificent selection from this well-known Nursery, comprising several thousands of Standard APPLES and PEARS, Pyramid PEARS on Quince, LARCH, OAK, SPRUCE FIRS, &c.; EVERGREEN and DECIDUOUS SHRUBS, including Purple Beech, Scarlet Oak, Aucuba, Box, Holly, Portugal Laurels, Common Laurels of sorts, Yews, &c.; a choice assortment of CONIFERÆ PLANTS of all sizes; ROSES, Maréchal Niel, Gloire de Dijon, &c., very fine; Seedling and Bedded Plants of TREES and SHRUBS in great variety.

Catalogues will be ready fourteen days prior to the Sale, and may be had on application at the Nurseries; or of the Auctioneer, Wirksworth.

WANTED TO LEASE, a few miles from London, near Railway Station, Two or more ACRES, suitable for Nursery, with Glass Houses and cottage preferred.

Apply, Mr. ARCHER, Vine Cottage, Navarino Road, Hackney, E.

Kent.

FOR DISPOSAL, a thoroughly genuine and very old-established NURSERY and FLORIST'S BUSINESS, part Leasehold and part Freehold, with a good Market Connection. Terms moderate, and can be arranged.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO BE DISPOSED OF, the LEASE of a SEEDSMAN, FLORIST, and JOBBING BUSINESS, about 7 miles from London, in main road, all in thorough working order.
Address A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, a FREEHOLD FARM, comprising House, Barn, Stables, and other Out-buildings, and 8 Closes, containing about 20 acres of good Land, suitable for a Fancy Farm, Hunting Stables, Nursery Grounds or Building Sites for good Villas. Prettily situated on the south side of Rugby, and about a mile from Rugby Grammar School. For further particulars, apply to the owners.
Messrs. ABEL AND SON, Alexandra House, Harrogate.

Scotland.

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New Illustrated Catalogue.

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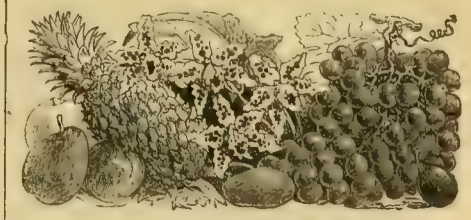
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 20, 1884.

LYNFORD HALL, NORFOLK.

THIS beautiful seat of Mrs. Lyne Stephens (of which we give illustrations, figs. 65, p 361, and 66, p. 365), is placed in a small park, surrounded with about 2000 acres of common covered with gorse, and is emphatically a game estate. The mansion, a noble structure of red brick faced with stone, occupies a sheltered position, and is not seen until nearly reached. It is 5 miles distant from Brandon, and 7½ miles from Thetford, the former being the nearest railway station. Fine carriage drives diverge from the mansion in various directions—the one towards Brandon reaching to a distance of about 3 miles. These roads are 12 feet wide, well made and kept, and most of them are furnished with Chestnut, Planes or other trees, planted in avenues at distances of 18 feet asunder, and 12 feet from the gravel on either side, thus having a clear space between the trees of 18 feet from plant to plant, and 36 feet between the rows. The soil is very light, but should the trees once get up and span these roads their artistic effect, as well as welcome shadow, will form magnificent additions to the arboreal grandeur of this fine place. The charming Wellingtonia avenue, proceeding in a straight line from the forecourt of the house, has not grown as was anticipated, the site being too dry and the soil too poor for this plant. Several trees, however, of a more glaucous variety than the type, have grown with exceptional vigour.

The garden in front of the mansion is one of Nesfield's largest and best. It is entered through golden gates, massive and rich, similar to those that give admission to the forecourt at the carriage entrance. Though not so high, the retaining walls are heavy and massive, with the usual copings for vases, and there are the customary terraces with sloping banks of turf, geometrical designs of Box and flower-beds, borders, with walks of smashed brick, &c.; the whole having a pleasing effect from the terraces, and from the windows of the mansion. The beds were well furnished with flowering and foliage plants of the usual character. It is all very well to find fault with coloured walks in summer when the usual flowering and foliage plants give perhaps an excess of glare to the garden; but in winter, when shrubs or small trees are chiefly used, the varicoloured walks lighten up their verdure with welcome tints of colour, which diffuse a much needed sense of warmth over the landscape. The centre-piece of the garden is a magnificent mistake—two bulls in marble in mortal conflict—which might with great propriety be removed to the forecourt of the mansion and a vase, or some other appropriate subject, put in its place.

This, however, is merely a matter of taste, and our illustration gives a good view of the flower garden as it is. Beyond the garden in front is a small richly wooded park, with a stream meandering through it, and furnishing the supply to a long lake to the right. This

lake has broad turf verges, on which noble Pampas-grass used to thrive; but some late winters have proved too cold for them, and the greater number have passed away. Cool shady walks pass through shrubberies to the further end of the lake, which furnished a capital site for a noble fernery.

Standing on the upper terrace, and contrasting the beauty of the silvery stream with its tiny island, with all the magnificence of the balustraded garden, the idea suggests itself whether if the water could be widened here into a lake and brought up closer to the mansion, a richer and more satisfying scene of sylvan and floral landscape might not have been the result. But our business is to describe what is, and not what might have been, and hence we hasten back along a green walk through a woody shrubbery to the kitchen garden.

This is of good size, and is well furnished with vegetables and fruit trees of the usual sorts. Here, too, all the glasshouses, plant and otherwise, are situated. Among the former are several of the first erected of Beard's patent houses, dry-glazed with felt in lieu of putty; they still retain the character they earned at first, of imparting unusual richness of colouring to the foliage and flowers of most plants, especially in the autumn months.

The different stoves and greenhouses were well furnished with a general and miscellaneous collection of flowering plants, such as Eucharis, Begonias, Gardenias, &c. Most of the summer greenhouse plants were, however, in the open air, and I specially noticed a very fine collection of Azaleas, being at once hardened and shaded by being placed on the shaded sides of the fruit trees in the garden. The latter are very fine examples of culture and training, and though the soil is remarkably light, they were models of health and of cleanliness. As a rule, the crops of Apples, Pears, Cherries, Plums, are plentiful in these gardens; but this season the severe spring frosts and the continued droughts have done their blighting and scathing work here even more completely than elsewhere. The fruit crops, albeit that the trees are young and healthy, are well nigh *nil* in the open air. Even Apples are almost as scarce as Pears, which is an unusual experience this season. The Pears are, in general terms, fruitless, and more marvellous still, though in first-rate condition, they were bloomless; the bloom on Pears was rather a variable quantity this season, and, as a rule was by no means up to the average in either quantity or quality; but this is the first large example met with where the bloom was not forthcoming. Mr. Lee, the clever gardener, who has managed these fine gardens for sixteen years, is at a loss to account for the absence of blossom this season.

It seems, however, that the site and soil of these gardens are so favourable to late autumnal growths for fruit trees, especially should a wet autumn occur, that the usual practice of summer pruning or stopping of the breast-wood of Pear and other fruit trees must not be adopted. Were this done the trees would break into Willow-like shoots so soon as the autumnal rains set in, and there would be an end of all hope of maturing the wood before winter. There is such an abundance of very fine fruit under glass at Lynford that the failure of the outdoor crops will be of less moment. The finest crop of Peaches and Nectarines ever seen by the writer was found in a long glass case, 360 feet long by 9 feet wide, in several divisions. It is not heated, and the protection afforded by the glass alone has been sufficient to ensure a crop. Nothing can exceed the health and vigour of the trees, unless it be the enormous crops of fruit of the highest quality and of good size, with which they are literally laden from top to bottom. The causes of this great success were pointed out to us on the spot. These were copious waterings and frequent transplanting and renewal of trees. A constant stream of sewage has been flowing over the roots of the different divisions in this long case for three months. This is carefully stored from all sources in and around the mansion, and raised by a steam engine, and conveyed on to the roots by simple wooden troughs. Hence, through this tropical season, the roots have never once suffered from lack of water, and no trace of aphis, spider, or thrips is seen. But Mr. Lee attributes his chief success to a biennial lifting and replanting of the trees The soil is light and is speedily exhausted, and his antidote to this is to lift the roots and replant in fresh soil. This is done in the early autumn, and the trees never lose a crop in consequence; on the contrary, they fruit all the better, the fruit being all the larger in size and fairer in quality in consequence of these transplantations; and in confirmation of all this tree after tree was pointed out of unusual fruitfulness that been moved in the autumn of 1883. With the exception of some seedlings and a few of Mr. Rivers' raising, the majority of the Peaches and Nectarines were of the older and well-known varieties, such as Early York, Royal George, Noblesse, Chancellor, Violette Hâtive, Walburton Admirable, Late Admirable Peaches. Lord Palmerston and several more of Mr. Rivers' early and late Peaches have recently been added. The chief Nectarines grown are the Elruge, Violette Hâtive, Pitmaston Orange, Hardwicke Seedling, Lord Napier, Pine-apple, and Humboldt, &c.

No one walking through this case need be surprised to hear that the excessive supply of Peaches and Nectarines has caused one of the divisions to be planted with Figs, which are also doing well. As fine individual trees may be met with elsewhere, but it is rare indeed to find so perfect an example of robust health and high and perfect cultivation extending to every tree. Nor is the cause of this far to seek. Almost before any tree hoists signs of weakness or distress, it is superseded by another—fine young stuff being held in reserve against such contingencies. Grapes may be said to be as well done at Lynford as Peaches and Nectarines. Higher praise would be as impossible as it is needless. The main range of glass consists of a range of 274 feet long by 15 feet wide, with a height at back of 18 feet. There are four vineries, each 45 feet long, one devoted to late Grapes—Lady Downe's, Alicante, Alnwick Seedling, and Trebbiano, all fine in bunch and berry, and promising to finish in perfect condition. Another vinery is chiefly furnished with Hamburghs nicely hung and well finished. In the third or early house there were some fine examples of Buckland Sweetwater, so fine in berry as to be mistaken for the Duke of Buccleuch; Golden Champion, and Hamburgh. Another vinery is devoted chiefly to Muscats, which looked most promising, the whole of the Vines being in robust vigour, carrying capital crops. The centre division is reserved for plants tastefully arranged and constantly varied according to the season. At the time of my visit it was chiefly furnished with Gloxinias in bloom, standing slightly up above a base line formed of Maidenhair Ferns; these, backed up with taller plants behind, had a very chaste and charming effect. Nor must I in this hurried notice forget to mention the fernery under glass. This is a somewhat lofty house, with the walls furnished boldly with masses of rock, having crevices and pockets filled with different large Ferns; but the most striking feature of the whole was the free use of Begonias of the Rex section among the Ferns, the latter never seen so much at home as when drooping over rocks, and adding their rich and varied bands or patches of colouring as a contrast to the verdure of Ferns of different sorts. Mr. Lee is, no doubt, first of all, a fruit grower, though the plants at Lynford, and their arrangement alike out-of-doors and in, prove him a skilful plantsman alike in their culture and disposition. *D. T. F.*

NEW GARDEN FERNS.

GYMNOGRAMMA LATHAMIÆ, *Moore, nov. hyb.*

Fronds oblong-lanceolate, 2—2½ feet high, erectly spreading, quadripinnate, pinnæ ascending, obliquely elongate, triangular, very shortly stalked; pinnules sessile, deltoid, with numerous ovate pinnulets, cut down to the rachis in small narrow segments, the larger of which are forked or trifid, and the smaller ones entire; sori in short forked lines on the narrow segments embedded in a white waxy secretion; stipes and stout main rachis, as well as slender secondary rachides, of a bright chestnut-brown; caudex erect.

This is supposed to be a garden hybrid raised between G. decomposita and G. schizophylla, and may very well be such in reality, the fronds possessing characters which might have originated in this way, and which do not appear likely to have been brought about in any other manner. In the outline of its fronds, and in the fine cutting and small narrow segments of its pinnules, it most nearly resembles G. schizophylla, and the fronds sometimes, but not always show the forking of their apex characteristic of that plant, but in its firmer texture and in the vigour and size of its fronds, which grow up in an erectly spreading or shuttlecock fashion, it follows G. decomposita.

G. Lathamiæ is a very handsome plant, and will occupy quite one of the foremost positions in this most ornamental genus. The size of the fronds—2½ feet high—moreover, gives to it an aspect of importance which few of the finely cut species possess, but of which G. decomposita is a very good illustration. The pinnæ, which have scarcely any stalk, are obliquely ascending, and form an unequal sided triangle, the anterior side being broadest. The panicles are sessile, and more equally deltoid, while the numerous pinnulets are cut up into very small segments, of which the smaller ones are entire, and the larger ones forked, or the basal ones sometimes trifid. The sori are abundant, and occupy the forking veins in the narrow segments of the pinnulets, the spore-cases being embedded in a white waxy secretion, which completely invests them, but does not extend to the extreme edge or apex of the segments. The chestnut-red stipes is remarkably firm and stout, as also is the primary rachis, which is in strong contrast to the slenderness of the secondary rachides. The upper surface of the frond is a pale green, the lower surface whitish from the presence of the waxy particles over and among the sori.

This sterling novelty was raised by Mr. W. B. Latham, Curator of the Botanic Garden, Edgbaston, Birmingham, and we have much pleasure in dedicating it to Mrs. Latham, of whose courteous kindness we have a grateful remembrance. *T. Moore.*

ADIANTUM FERGUSONI, *Moore.*

Fronds triangular ovate, tripinnate, stiffly erect in habit; pinnæ long stalked, spreading; pinnules variable in size and form, but mostly large, their pedicels continuous with the rachis—not articulated, their general form when at all regular bluntly ovate on slender pedicels varying from ⅛—½ an inch long; truncate at the base, with a pair of large basal lobes cut down to within about one-third of the centre, and three or four smaller lobes above, all the lobes again lobulate, and where sterile finely toothed; sometimes the lobes are more numerous and the lobing more irregular, and sometimes the pinnules are wedge-shaped as if the basal lobes were abortive. In some pinnæ the pinnules are distinct, almost distant, and in others the pinnules themselves and their lobes are closely imbricated towards the apex, giving to those parts a semi-cristate character; sori oblong at the tops of the ultimate lobes; stipes and rachides glossy purple-black; veins flabellately forked.

The history of this singular Fern, which has been placed in our hands by Mr. Baker, is very brief and incomplete. It is cultivated by W. Ferguson, Esq., F.L.S., at Colombo, in Ceylon, having been found some time ago, as we understand, growing as a chance seedling in his conservatory. In Ceylon it seems to have attracted a good deal of attention, and its proper position amongst the Maidenhairs has somewhat exercised the pteridologists of Colombo. According to one of the suggestions which have been made it is a supposed hybrid between typical Adiantum tenerum and its cristata variety farleyense. We cannot adopt this view, seeing that A. tenerum has the pinnules so decidedly articulated with their pedicels, that many of them drop off in the mere process of pressing and drying for the herbarium. In the

present case there is no sign whatever of this articulation, and hence we cannot believe the two Ferns are specifically related. We rather look upon it as a sport or form of Adiantum Capillus-Veneris, but whether a hybrid or an evolution we have no means of forming an opinion. In any case it is so distinctly aberrant that it will not class well as a variety under any known species, and we have therefore separated it as we would a distinct hybrid, and have attached to it the name of Mr. Ferguson, in whose garden it originated.

We hear that the plant has been exhibited at a flower show in Ceylon, and attracted considerable attention. It is said to have a remarkably long stipe, and stiffly erect ungraceful fronds, so that it will have to be regarded more as an interesting botanical enigma, than as an accession to our already numerous ornamental Adiantums.

The specimens which have reached us are about 9 inches in length, exclusive of the stipes, and about 7 inches in breadth across the base. The unusual length of the pedicels gives the frond a somewhat spare and open appearance, while the leafy portions seem in some places to have all run together towards the ends of the pinnæ, this crowding and the numerous lobes and teeth giving it something of a cristata aspect, which has doubtless led to the suggestion that A. farleyense was concerned in its origin. We know nothing of the character and vestiture of the caudex, which, however, ought to throw some additional light on its affinity. *T. Moore.*

TOMATOS AT THE "HEALTHERIES."—Gardeners and consumers who are interested in this fruit will derive instruction from the inspection of a collection of these which is on view at Messrs. Jas. Carter & Co.'s stand in the South Gallery. The sorts include the best of American and English raising, both large and small fruited; and are so arranged as to afford readily means for comparison.

A HOLIDAY TRIP IN INDIA.

MADRAS.—Availing myself of two months' leave in November and December, 1883, I visited South India, which I had not seen before. Madras I found hot and uninteresting, but I was repaid by a sight of the Crotons in the compound of the Holy Emanuel Church. They are a marvel of beauty, and of all forms, sizes, and colours of leaf. The compound glowed with colour. Some fine specimens were upwards of 6 feet high. The best I thought was the C. pictus. I never suspected what a charming beauty this was till I saw it here. These Crotons alone were worth coming to Madras to see. There were still finer specimens of some kinds in the horticultural garden. Crotons are great favourites in Madras, and justly so. A fine bush of them is a great feast for the eye. They are much used for decorating verandahs and porticos, and they appear to like the sea air.

All the trees I saw in this capital appeared as of yesterday. In vain did I search for some fine old trees either on the roadsides, or in compounds, or anywhere; while, on the other hand, the whole place looked so ancient. I saw no fine avenues. In such a climate there should have been no difficulty in growing trees with fine foliage; they would add grandeur to the future Madras to which the people are aspiring. Many of the trees on the roads are ugly specimens of the Thespesia populnea, which would have been better suited to Dante's *Inferno*, as illustrated by Doré.

In the People's Park, the only interesting things I saw were two cubs. They assured me that these were hybrids between a wolf and a "pariah" dog. The parents I saw also. The father was an ordinary Indian wolf, and the mother a black pariah, with a white neck and white feet. The cubs were wolf-like, of a fawn colour, and one of them had a white foot. I tried to ascertain whether such a fact had been recorded, but could not find that anybody took any interest in such matters.

The Masula boatmen interested me much. I thought them among the finest specimens of men I had seen anywhere. Although not so heavy as navvies, their muscular development is superb. The muscles of their legs, thighs, trunk, arms, shoulders and neck, are all equally well developed. One does not see such fine specimens, except among acrobats. They are middle-sized men, and are pictures of health and strength. There is a curious and erroneous notion, which unfortunately has found its way into scientific books, that people in the tropics live upon Rice and vegetables. No greater delusion. These Masula boatmen eat plenty of mutton or beef, according to religion, plenty of fish, rice and vegetables, and drink a good deal of toddy, or "arrack," brought from Colombo. Their only covering is a small loin-cloth; they are exposed to the rain and the sea, and work hard. Whatever cargoes come to and go from Madras are landed and shipped by them. Among them are Mohamedans, Hindoos, and Roman Catholics, and they all appear to pull well together in one boat. I left Madras with the feeling that I should not like to have been the designer of its fountains!

BANGALORE.—I looked in at Bangalore, as I had often heard that this is the station of South India. It is a fine place certainly, with a fine climate. I was told punkahs are not generally used there, excepting on hot days at meals. There are many regiments stationed at Bangalore. The Cubbon Park is an extensive place, with a fine large building over-looking from an upper terrace. The building is of a brick-red colour, and in it are the Government offices. In the Park I saw a number of Mango trees (the grafted Mango grows well), and many of Pongamia glabra. I saw a few Araucarias, and many ugly-shaped Casuarinas; in fact, I hardly think I saw one well-shaped Casuarina. These were queer trees. Some grow as straight as an arrow, others fork, and many grow cro ked



FIG. 65.—LYNFORD HALL, NORFOLK. (SEE P. 359.)

and all ways. While yet in the nursery it is not difficult to recognise which are likely to grow straight. Those that do, often make fine trees, and the others are not worth having. The Poinsettias were in flower, and very fine, equal to those of the Mediterranean. I saw a few trees here which are worthy of notice. They are the Schinus molle, or Pepper tree. In the Mediterranean this tree grows well, but cannot be grown even so far north as Rome, on account of the frost. I tried it largely in Lucknow. The damp, hot weather of the rainy season killed it. In the Cubbon Park there were four trees as large as those on the Mediterranean, but, perhaps for want of a rich soil, not so fully clothed with foliage. It is a very graceful tree, and why they do not grow more of it in Bangalore I do not know. Its growing well there indicates, I think, that the climate during the winter is like that of the Mediterranean, and that in summer it is free from the hothouse dampness of the tropics. I saw a group of the Spathodea campanulata (this is the name on the ticket). This is a tall tree, with unusually dark green foliage, interspersed with masses of scarlet bell-shaped flowers, turned upwards. At a short distance they look like bunches of scarlet Pelargoniums. The tree is a perfect marvel of the vegetable world, and matched only, I think, by the Poinciana regia. Its common name is "flame of the forest." An avenue of Spathodeas, full grown, and in full bloom, would be a subject on which to write a poem. The charm of this tree is that it flowers in winter. Will no one try to immortalise himself by planting such an avenue in Bangalore? It is a curious thing that close to the red brick building masses of Poinsettias have been planted. Masses of Cupressus sempervirens, which in Bangalore grows superbly, would have been far more appropriate. The soil appears generally good; no artificial irrigation is used, excepting when the trees are growing, and the grass is everywhere fine in this park. The fallen leaves are carefully swept away. This is well, if they are rotted, and afterwards returned to the roots of the trees. This is not done, and most of the trees bear evidence of a want of leaf-mould. When will people learn that the best manure for a tree is its own decayed leaves?

On the way to the Lal Bagh at Bangalore there are various native nurserymen. I went into B. Nagappah & Co.'s nursery and was much pleased to find there an extensive collection of well grown decorative plants, and all very moderate in price. This firm appears to carry on a thriving business, not only in Bangalore, but also with various parts of South and Central India and Ceylon. They publish a catalogue of plants and seeds; somebody should, however, help them to put down the right botanical names. For Schinus Molle, they have Chinese mulli. They have also a Splendunus variegata, which probably would prove new to botanists! Most of the names are well hit off.

The Lal Bagh is a charming garden, with terraces and parterres. Here a pretty use is made of the Bignonia gracilis. It covers a sloping trellis, which forms the verandah of a pic-nic shed. Its elegant slender branches hang very prettily from the eaves—the perfection of gracefulness. Near the band-stand are two perfect specimens of Spathodea. The white and purple Meyenia are splendid here, and very floriferous. These, however, and the Hamelia patens are tortured into shapes of huge balloons and buttons. I remember seeing at some station on the East Indian Railway the tops of a "Mehndi" hedge (Lawsonia inermis) clipped into figures of elephants, temples, dogs and donkeys. This is excusable in a native gardener, but to carry on such a system in the Lal Bagh, Bangalore, where huge iron embossed botanical tickets are used, is not only out of place, but, I think, unpardonable. There are some fine specimens of Cupressus sempervirens as straight as an arrow, and between 40 and 50 feet high, and beautifully clothed with foliage from top to bottom. There are, however, too few of them, and they are stuck about singly, like solitary unmeaning pillars. Some thousands of them, grouped in striking masses, would be very effective.

The Tamarind tree grows well, but is nowhere used for avenues. Those who have been to Fyzabad, in Oudh, know what a famous tree the Tamarind is. Curiously enough, in Bangalore, I saw only one plant of the Bougainvillea glabra. They have the spectabilis, which flowers only once a year; nowhere have I seen anything like the "fireworks" of Bouganvillea glabra which there are in Lucknow. The Grevillea robusta makes a pretty road tree. The Lal Bagh is a great place for promenades on band evenings. One evening the European cavalry band was playing under a pretty kiosk-like place. The Bangalore society were promenading about the terraces and parterres. I was snugly seated on a high bit of ground under a Spathodea. For a few moments I allowed myself to dream that I was in Versailles! Here they use the beautiful large single red Hibiscus rosa sinensis for hedges, and they clip them! I saw a fine untouched bush of this same Hibiscus in the shade of a pretty tree, with its base fringed with Fern and painted leaves; it was unique, and worth more than a mile of the clipped hedge. I saw a European Olive tree, and also a Carob tree; both looked healthy. I should not wonder if Mysore, with its almost Mediterranean climate, were suited to these trees. The Cocoa-nut Palm grows well, and so do other Palms, but nowhere are they used for decorative purposes. I have not seen one specimen of Lombardy Poplar, although it ought to do well in such a climate. They have two Figs, the Ficus comosa and Benjamina, which are very pretty and suited for avenues. All over Bangalore there is an infinity of trees of the Poinciana regia. What a conflagration in the spring! Then, one would almost require tinted spectacles to save his eyes from the blaze—I did not see, however, a single decent avenue of any sort; such as would make you stop and look at it again and again, and say within yourself, "How fine!" All are of the "higgledy-piggledy" style. In one line are planted a number of incongruous trees that cannot by their nature ever form a line. All avenues, in fact, are planted like this in India. In all my travels from north to south I have not yet seen one avenue worth looking at, except the Tamarind one at Fyzabad, and that, I was told, was planted by a Rani "somebody" long before the British occupation. I liked Bangalore very much, but I left it with the impression that they may have engineers and gardeners there, but there was no trace of artists. With such wealth of trees and shrubs growing in the open air, what a paradise a landscape gardener might make of this military capital of South India, with its fine Mediterranean climate! *E. B.*

(To be continued.)

FERTILITY OF HYBRIDS.

A NOTE before me reads: "You would do good service by giving illustrations where hybrids between undoubted species have proven fertile."

Just what is an "undoubted" species cannot be answered. As Dr. Gray somewhere puts it, the idea of a species has become a matter of experience. Marked differences without a series of closely connecting links might be regarded as undoubtedly constituting distinct species in one case; in another case differences of precisely the same degree, but connected by a chain of minute variations, would probably lead to the decision that the forms constituted a single polymorphous species. The modern idea of a species is little more than that which might be suggested by two ends of a chain, in which we cannot find the connecting links. The two ends would represent two species. If afterward we find the lost links many would want to unite the two as one. Some would not be so ready to do this as others. They would not expect to find exact boundaries. Their idea of a species would allow of a little overlapping at the boundaries; and the two extremities would rather be centres of circles than the end of a line of descent. But there are differences of opinion on this subject to make it difficult to present species that would be "undoubted" to every mind. This difficulty is greater from the widely extended belief that a hybrid must of necessity be sterile. Many, with this prepossession, will not regard a species as "undoubted" if it produces fertile progeny when crossed by another. The very term hybrid, in its original Greek sense, is also against us; for no "outrage" on Nature ought to be reproductive, and there is no doubt but the name was originally intended to mean simply the mule—the sterile, unproductive animal, which constituted about all that was known of the subject by the ancients. A fertile hybrid would be a contradiction in terms. It is worthy of note, however, that the great father of modern botany does not seem to have had much, if, indeed, any idea of sterility in his comprehension of the term. He believed that a large number of plants which he regarded as true species, and to which he gave specific rank and specific names, originated as hybrids. Thus we have Trifolium hybridum, Trigonella hybrida, Campanula hybrida, Papaver hybridum, Chelidonium hybridum, Vicia hybrida, Tussilago hybrida, Sedum hybridum, Veronica hybrida, Chenopodium hybridum, among a large number of similar Linnean names. Linnæus must have been aware of the complete fertility of all these, yet the idea of complete sterility seems to have followed closely after his time. Milne, in his *Dictionary* (1770), says absolutely:—"The seeds of hybrid plants will not propagate." Leading botanists, who have succeeded him seem to have had mixed ideas; sometimes in their writings evidently inclining to the idea that hybrids should be sterile, at others indicating an impression that they were generally fertile. Lindley, in his *Theory of Horticulture*, leans a little from Milne, and tells us that "facts prove that undoubted hybrids may be fertile." He, however, doubtfully says that the reasoning about the subject has been "derived but from very few facts, and from the analogy of the higher orders in the vegetable kingdom." Darwin, however, shows that there were but three or four cases of intermixture of species known among the higher animals, and, curiously enough, when he ventured to add to their numbers, he found the hybrids of his own raising fertile. (See *Nature*, January 1, 1880.) Romanes ("Hybridisation," *Encyclopædia Britannica*), while telling us in one place that there are "innumerable" exceptions to the old belief that hybrids are sterile, goes on further to speak of the "sterility which so generally prevails." A leading botanist, recently deceased, often wrote to the writer about the sterility of hybrids. An Oak growing near St. Louis he was sure must be a hybrid, because in many years he never saw but one seed on it; yet he had as strong a belief that the Quercus heterophylla, or Bartram Oak, was a hybrid, though it is as fertile as any other Oak. The difficulty of satisfying the mind on this question of sterility, in view of the evidences to the contrary, has been so eminent, that refuge has been taken in the belief that "if not absolutely sterile at first, it will become so in the second, third, or fourth generation." (Lindley, *Introduction to Botany*.) Darwin (*Origin of Species*) says: "It is a fact that hybrids are very generally sterile." Yet he quotes no evidence of any moment to support this; on the contrary, shows that Kolreuter and Gaertner, two chief fathers of the sterility belief, might have more properly referred the sterility which in many cases followed their experiments to other causes than that of hybridism. Indeed, notwithstanding the statement that "hybrids are very generally sterile," all, nearly, of his illustrations among plants, show that they are as fertile, and in cases more so, than the parent plants.

The facts are, that the recorded and undisputed cases of sterility in hybrids among plants are so rare that it would seem the onus should be on that side to prove the point. The writer does not know where to look for cases of "undoubted" hybrids among plants that are sterile. In most cases where reference is made it has been assumed that they were hybrids, because there was some difference in appearance from the normal form, or, perhaps, from the simple fact of sterility alone. The curious Pyrus Polvilleriana, in the garden of the Museum at Paris, is a case in point. This was known in Bauhin's time, and, when the knowledge of hybridism was developed, believed to be a cross between an Apple and a Pear. It bore fruit; but it was thought there was no seed in them. But, in 1860, Decaisne cut large numbers open and found thirteen seeds in 150 fruit. In 1864 sixty-two seeds were found in 139. Now the very fact of the fertility varying with different seasons shows that sterility was in relation to the structure in connection with external circumstances, rather than in any physiological imperfection in the reproductive organs themselves. In some other locations, where the circumstances should be uniformly as they were in 1864, we should have a tolerably fertile tree. Seedlings from the tree showed a relationship to Cratægus Aria, and, indeed, from what we now know of departures from normal types without any pretensions to hybridism, one may say that there is no fair reason for regarding this curious tree as a hybrid, or the sterility as having anything to do with the question of hybridisation. The writer has a tree, certainly raised from Halesia tetraptera, certainly no hybrid, as there is nothing near for the parent tree to hybridise with, which is so different from the parent type that

it can scarcely be called a Halesia. It is as sterile as the most famous hybrid could be. In short, sterility is well known to often follow the union of two individuals in the animal kingdom, and there are "innumerable" cases of sterility among individual plants; sterility will often be characteristic of a whole race, and often of a whole species; and we may say positively that there is no more sterility among recognised hybrids than we find of everyday occurrence where hybridisation is certainly out of the question. *T. Meehan.*

(To be continued.)

WOODS AND RAINFALL.

The fact that a spring is often seen to increase in volume during the period in which a wood is growing, and ceasing to flow on the same being cut down, at the same time that the soil, when it is covered with trees, is usually in a dry state, has frequently been mooted, and a variety of reasons adduced for this peculiar feature. I therefore venture to note down my own observations, taken in various parts. Surface-soil will be dry owing to the root absorbing as much water or nearly as it can hold between its organic particles. What cannot be retained by the soil nor be utilised by the roots during its downward progress reaches lower and impervious strata, and will there remain to form springs may be, or it may rise to a higher level by natural increase from snow and rain, and then flow over through pervious strata to lower levels such as those of brooks and rivers.

On bare land, although there is nothing in the way of roots to absorb moisture, if we except the roots of herbage, the surface-water runs off to lower levels, if the surface is hard, or forms pools and marshy places, and in stiff soils remains for lengthened periods, during those periods of the year when the sun has but little evaporating effect on water. In the hotter months the evaporation from bare land is much greater than is possible in a wood, the soil of which is shaded by the trees, and therefore rains falling at that period have not time to soak into the land, but are rapidly evaporated by the sun-heat, and carried elsewhere in the form of vapour. Perhaps bare, light soils overlying gravel or greensand, lose less by evaporation than the former, as the descent of rain is much quicker to depths beyond the reach of the sun's power.

Where forests abound floods are much rarer in the main streams, provided the banks are sufficiently high and strong, and that there is care taken that no silting up occurs from any cause, thereby raising the bottom of the stream in places, and so causing a want of room for large quantities of water. Where snow remains on hill tops, and then suddenly melts in June and July, floods are then the most difficult to avoid, or to control, although forests may clothe the lower portions of the hills and line the streams. But if such hills—when the altitude admits of its being done—were planted to their tops, the greatest risk would be averted, as the melting of the snow would be gradual, and the consequent rush of water after heavy summer downfalls would also be much less rapid. Forest ground evaporates therefore less than bare ground, and the trees on it consume much water by their roots and absorb also a little by their leaves in summer time. In winter the action of trees on the water falling on the land becomes more controlled by the nature of the soil, its slope, and the composition of the underlying strata. Trees at that season exert the minimum of direct influence through root action, and water either sinks slowly, as in heavy soils and in partially pervious strata, or rapidly in those of an opposite nature, and much finds its way by artificial and natural channels to rivers, &c. Failing these natural and artificial means of clearing land of the moisture that in one or another form descends on it, it gets only partially dried by the action of tree roots, assisted by evaporation from its surface during the hotter periods of the year.

In this way forests act as conservators of water in so far as they prevent a too rapid evaporation, but the trees themselves part with great quantities which has been drawn by their roots from the soil, and which is lost in the air by a drying-out process going on in the leaves. Their own requirements in building up the tree growths of stem, roots, and foliage represent an immense amount of water and dew, and it is only the surplus remaining which finds its way to the streams; but this flowing away gradually and in reduced quantity than is the case from bare soil, is therefore less liable to cause floods, except in such exceptional instances as have been alluded to.

The dampness felt in dense or even moderately dense woods is not so much due to any locked up moisture in the land itself as to the confined cool moist air, a condition that is owing mainly to the shade of the foliage hindering the sun's heat from penetrating to the stratum of air near the ground level. Higher up, near the tops of the trees, it is of a pleasanter and more buoyant nature. In windy weather this cool moist feel in the air is much lessened, or else entirely absent, the moisture itself being carried through the wood by the action of the wind, and is replaced by the drier, or colder, or may be warmer air, from outside the wood. This condition of the air within a wood will account for the prevalence of dew on the herbage early in the day, and up to mid-day, and in denser parts throughout the day, when the air circulation is gentle. *M. A.*

GATHERING AND STORING FRUIT.

It will, I doubt not, be the exclamation of many, when they see the above heading, "I have no fruit to gather!" but though there are some who own gardens or orchards in that unfortunate position, there are others more favoured, as in most districts there is a sprinkling, and in others very good crops. Unfortunately the wind, which blew a gale, and the heavy fall of wet with it on the the 4th, has knocked down and spoiled much; but though that is so, I am not sure that it will result in loss, as the fallen fruit may be used, and that not too badly bruised will keep for a time, besides which all left on the trees, except forward sorts, will swell rapidly after the heavy soaking the earth has just got, and the chances are that they will nearly double their size, as the soil is very warm, and the roots in it active. Plums, such as Coe's Golden Drop, Jefferson, Reine Claude de Bavay, and other late kinds, are splitting, and when this takes place it is useless allowing them to hang, for if they escape rot, wasps and flies are sure to attack them, and the best thing is to gather them at once for use, as all these varieties are excellent cooked, and should be more grown for that purpose. The Jefferson Plum, if gathered when dry, and laid or hung up in an airy room, will keep a week or more, as will also Coe's Golden Drop, much longer than that, and these, when eaten, will be found to be perfect sweetmeats. Good as Morello Cherries are any time until now, they are doubly so during September and the early part of October; but to keep them in condition till then the wall requires a coping of some kind over the trees, to ward off wet, which at this period soon brings on decay; and the same holds good with red and white Currants, which will only hang late on bushes trained on a wall. To know when to gather Pears and Apples it is necessary to be acquainted with the sorts, which vary much as to their season of ripening, but it may be stated broadly that the later they are in coming into use the longer they need to hang on the tree. Take Pears, for instance, such as Josephine de Malines, Easter Beurré, Ne Plus Meuris, and others that keep till April or May, and gather them when the winter kinds are picked, and it will soon be seen that a great mistake has been made, as they will shrivel and never be any good. It is also the same with Apples, and all late sorts of these, as well as Pears, should be left out till they begin to loosen their hold, or there is danger from frost coming to injure them before they are housed. The first Pears to come in now are Beurré Superfin, Beurré d'Amanlis, Louise Bonne, and Marie Louise; and instead of a general gathering being made of these or any others it is much better to go carefully over the trees and take the most forward, by doing which the season for their use is greatly prolonged. If it cannot be decided by the eye when they are fit to pluck a gentle upward bend will soon prove if they are ready, as when they are all Pears and Apples separate at once at the joint of the stalk, and they should never be pulled till they do. Some go by the colour of the pips, and though this is a fairly safe guide still it does not tell so closely as the test just named, which is unerring, and may be relied on by any one who is in doubt when to pick. As so much depends on the way fruit is handled in regard to its keeping the baskets to put them in should be padded by having a lining of soft hay, moss, or a thick cloth placed round the sides and over the bottom, that the fruit may not by the weight of one on the other be pressed against the material and bruised, as any abrasion or indentation of the skin is the first step to decay. The best place to store Apples and Pears is a dry room or cellar where the temperature is not only cool but equable, as changes either way are not favourable for their keeping. This is why it is that thatched buildings or those low down on the ground will preserve fruit in a fresh plump condition longer than any other, and under such storage I have seen Marie Louise Pears in good order at Christmas *W. J. S.*

Orchid Notes and Gleanings.

Oncidiums for the Intermediate-house.—Following the remarks on Oncidiums requiring cool-house treatment (p. 294), it will be well also to enumerate a few which are sometimes grown too cold in winter, and which succeed best in the Cattleya or intermediate-house—not in all cases because they want more heat than the cool-house gives, but because the air in the intermediate-house is drier, and because a clearer light is generally to be found in it than there is in the Odontoglossum-house, both of which circumstances are favourable to many Oncidiums. The fleshy-leaved section is particularly impatient of damp and cold, and consequently many of them which might be successfully wintered in a low temperature if kept very dry, are in immediate danger in such a situation if kept moist, or if even by accident drips from the roof fall on them. The risk and trouble are, therefore, too great to make it worth while to attempt them in the cold-house, when they will thrive better and with less trouble in the temperature in which our Cattleyas are now generally grown. The whole of this section of Oncidiums, commencing with the most beautiful O. Lanceanum (a note and illustration of which we gave May 10, p. 609), and following with O. luridum and its varieties, O. intermedium, brown, yellow, and red; O. bicallosum, yellow; O. Cavendishianum, yellow; O. carthaginense and its varieties, roseum and sanguineum, white, rose, and brown; O. pumilum, yellow, &c.; will thrive best as intermediate-house plants. They like a clear but subdued light, and are all easily injured by the direct rays of the sun falling upon them, indeed that is the most fruitful cause of the frequently spotted, blackened and damaged leaves on the fleshy leaved Oncidiums. O. Lanceanum, O. luridum, and O. intermedium should be placed in the warmest part of the house, and the others in the coolest; O. ampliatum and O. ampliatum majus stand no chance in the cool-house but should be placed in the warmest part of the intermediate-house. These and particularly the var. majus are fine plants when well grown; they used to form the most telling plants in exhibition groups, and even now some grand specimens of them often appear at flower shows. O. juncifolium (Ceboletti), O. Sprucei, the new and lovely O. Jonesianum, and all the other terete-leaved Oncids, are best in the intermediate-house. With regard to O. Jonesianum it thrives best on blocks, the plants being so placed as to hang head downward after the manner of the Scuticarias; if hung upright it is said to become very stubborn and hardly to move at all. O. Papilio, O. P. Krameri, and the other varieties of the Butterfly Orchid, want more heat than the cool-house affords, and they must, therefore, come into the present category. They thrive best on blocks or in baskets in the shadiest part of the house. Oncidium pulchellum (white and rose), O. triquetrum (white and red), and O. Lemonianum (yellow), form a neat, dwarf-growing, bulbless section of West Indian Islands Orchids, growing but a few inches in height, and sending out long sprays of pretty flowers, which in the case of O. pulchellum look startlingly handsome when well grown. This section will not stand a dry heat for any length of time, but they are not safe in the Odontoglossum-house in winter; it is, therefore, better to grow them on blocks, keep them always moist, and suspend them in the coolest part of the Cattleya-house or some other which does not fall below 55° in winter. O. pulvinatum, O. divaricatum, and other soft-leaved Oncids do best in the intermediate-house in winter, and even an occasional plant of the cold house kinds from an exceptionally low altitude may prefer it as Mr. De B. Crawshay remarks (p. 332) with respect to that well known cool-house Mexican Orchid, O.

incurvum. On the other hand many of the above enumerated Oncidiums which I wish to caution growers from keeping too cold in winter are quite as often met with suffering from too much heat; it will be best, therefore, to say in plain terms that there is no known Oncidium which requires a greater heat than that of our ordinary intermediate-house, or that will not grow better, and be sounder and flower freer in that temperature than in a warmer. The whole of them, indeed, which are not growing in summer are to be greatly benefited by being removed even from the intermediate-house to a shady greenhouse or cooler Orchid-house at that season. *James O'Brien.*

CATTLEYA WALKERIANA.—This is one of the small growing Brazilian species, of evergreen habit, with blunt strap-shaped leaves. The peduncles come from the base of the pseudobulb, and bear two flowers about 4½ inches in diameter. The sepals are narrow, the petals roundish-ovate, both rosy-lilac, lip 3-lobed, lateral lobes erect, shorter than the flat, oblong, truncated central lobe, which is of a rich magenta with a basal yellow blotch. Mr. Williams finds it to do well in a stove with Crotons exposed to full light. *Orchid Album*, t. 154.

VANDAS.—The remarks on these at p. 332 are interesting and instructive, inasmuch that they prove how well these handsome Orchids grow in the neighbourhood of London, or rather in London itself. All the varieties of V. tricolor and V. suavis succeed equally well in Messrs. Veitch's nursery at Chelsea, where a large importation of the true V. insignis has become well established, and the plants of this succeed as well as the others. I have frequently admired the plants in the Upper Holloway Nurseries, furnished as they are with leaves to the very base of the plants. Some of these leaves must be at least ten years old, and they are of as deep and healthy a green colour as if they had been formed the year previous. Mr. Thomson, of Clovenfords, near Galashiels, has also been very successful in growing this class of Vandas, and his plants have been grown in the same temperature. Other growers have been successful, but the fact remains that the largest proportion of cultivators have not been so. One of the most enthusiastic and successful of cultivators, the late Mr. Spyers, fancied that it was the nature of Vandas to lose their lower leaves after they had flowered freely. That this is a fallacy is abundantly proved by the Vandas alluded to above. Now it is easy enough to give the plants the same temperature as Mr. Williams and Messrs. Veitch give theirs, and there is no difficulty in shading them, but the results are not always the same. Perhaps the watering of the plants and the atmospheric conditions have something to do with the want of success in some cases. Ventilation, too, plays an important part in the economy of Orchid-houses. Those who have been unsuccessful in the culture of Vandas would do well to consider whether their houses are sufficiently ventilated. The hot-water pipes are usually placed close to the walls, and it may be of consequence to state that the Vanda-houses of Mr. Williams and of Messrs. Veitch are span-roofed, in that case the hot-water pipes are fixed close to each side wall, and opposite the pipes ventilators are placed in the wall, so that the air passing into the house must be warmed by its contact with the pipes. These ventilators should be open night and day in all but very cold weather. There should, of course, always be ventilators at the top of the house, which are also kept open on all occasions when the weather admits of it. The plants should be placed in pots more than half full of clean potsherds. The potting material should consist of pieces of charcoal, broken potsherds, and sphagnum chopped up; and during the growing season the surface should be a compact mass of live sphagnum: this is attained by frequent waterings with rain-water. Once in a week or ten days the plants may be dipped in a tank of rain-water, plunging the pots to the depth of the drainage, else the underneath roots may suffer while those on the surface are moist. Plunging the pots in the water causes wood-lice, &c., to come out. A most essential part of their culture is the resting period in winter; during that time they should neither have a moist atmosphere nor a high temperature—50° is a good average minimum. Water should also be very sparingly applied to the roots. The moss which has been kept quite green hitherto will become whitish owing to the more moderate supply of water. In January, or early in February, the plants will begin to grow again, and will require more water, while those requiring it should be repotted. *J. Douglas, Great Gearies, Ilford.*

SACCOLABIUM BELLINUM, RCHB. F.—This pretty species was described in our columns, n.s., xxi., p. 174. The evergreen leaves are strap-shaped, deeply and unequally notched at the apex. The flowers are borne in short racemes, each flower being about 1½ inch across, flat, sepals and petals obovate oblong, yellow blotched with brown, lip 1 inch long, cup-shaped at the base, side lobes erect, central lobe transversely elliptic with numerous thread-like processes on each side, and with a central yellow spot marked with bright red blotches. At Mr. Lee's, at Leatherhead, the plant is grown in the East India-house near the roof, where it gets plenty of light. This rare species is figured in the *Orchid Album*, t. 156.

ODONTOGLOSSUM PESCATOREI.—I have been interested in counting the flowers on spikes of O. Pescatorei, and have seen a great many of them. The finest I ever saw was in Messrs. Veitch's nursery at Chelsea, and on it I counted a hundred flowers. I see allusion is made at p. 332 to "gracefully branched spikes frequently having from 100 to 150 flowers." I would ask, is that in this country? When the flowers on the above plant were counted, it was stated in my hearing that one of our most successful Orchid growers had often counted the flowers on a spike of this Orchid, but had never yet found one to reach a hundred, although he had obtained one with ninety-nine flowers. *J. Douglas.*

CŒLOGYNE GARDNERIANA.—A species with dark shining green pseudobulbs with foliage about a foot high or more. It produces its flowers on drooping spikes, the blossoms being pure white, having a pale lemon-yellow tip to the lip, and it blooms in October and November, continuing in beauty for three or four weeks. Mr. Williams says that in his experience this plant does well grown in a pot or basket with good fibrous peat and sphagnum moss, and with perfect drainage. It must be well elevated above the rim of the pot or basket, a few lumps of charcoal being added to the peat. In the growing season the material about the roots must be kept moist, and when the growth is completed it should get only enough moisture to keep the pseudobulbs plump, but when the plant begins to grow more water must be afforded it, in order to induce it to grow freely. It thrives well in the Cattleya-house, as near as possible to the glass, but shaded from the burning sun. The species is a native of Nepal, Khasia, &c., and is scarce in cultivation. It is figured in the last number of the *Orchid Album*, t. 153, from which we have condensed the above note.

CYPRIPEDIUM INSIGNE.—Any one who has a frame or a pit with glass or a small greenhouse can grow this plant, than which there is no more accommodating one in the whole order. The secret is to take care of the plant after the flowering season (winter) is over. "We grow this Cypripedium," says Mr. Williams, "in a warm pit during winter after the flowering is over; in spring and summer no heat is required, but it must have plenty of ventilation during the day, the pit being closed at night. When the blossoms are nearly ready to open we take them into a warmer house in order to expand their flowers. When they have finished flowering they are repotted if necessary. Abundance of water in the growing season, with the addition of a little manure-water, is desirable, and the plant should be grown near the glass. *Orchid Album*, t. 155.

FLOWERS IN SEASON.

SINGLE DAHLIAS.—From Mr. T. Fish come two novelties, one which bears his own name, and which is not only novel but interesting, which is more than can be said for all florists' flowers. It is a good, flat, circular flower, with regular broad ray florets, the edges striped with canary-yellow, the centre white: the disc is a rich golden-yellow. This is a very attractive flower. The special interest lies in the distribution of the colour. The outer or ray florets, though apparently single, are, as every botanist knows, made up of three, perhaps five, petals united, but generally the notches at the end indicate the number of petals. In the present instance there are three petals joined; the two side ones are canary-yellow, the central one white, so that the composite nature of the "quill" is here shown in the distribution of the colour, as it is also in Paragon and in the variety of Marigold known as Meteor.

Beauty of Hardwicke had fallen to pieces before we received it. The ray florets seem astonishingly broad, ovate-obtuse, golden-yellow, with a reddish-brown, blotched at the base; the whole flushed with lilac. Disc yellow.

Formosa.—This is a very handsome variety, flowers of which are sent us by Messrs. Cheal & Sons, of Crawley, Sussex. It received a First-class Certificate at the last meeting of the Royal Horticultural Society, and well deserved the honour. The flowers are of medium size and good form, of a rich glowing chestnut-red; the disc yellow.

STREPTOSOLEN JAMESONI.—Messrs. Cannell send us splendid spikes of this fine orange-flowered plant, which after being neglected for many years has once more been brought to the front by the zeal of Messrs. Cannell. It was figured in the *Gardeners' Chronicle*, p. 797, vol. xxi.

HIBISCUS SYRIACUS (ALTHÆA FRUTEX).—It is inconceivable why these fine autumn flowering shrubs are so little esteemed. There seems to be a sort of blight over ornamental trees and shrubs, which keeps them from assuming their rightful place. When people take more interest in their gardens, and less about the decoration of their dinner-tables and boudoirs, and when the demand for cut flowers becomes reduced to more moderate proportions, we may expect this class of plants to emerge from the cold shade of neglect. Mr. Anthony Waterer, Knap Hill, sends us some specimens of fine varieties, which are flowering well this autumn in most places.

Duchess of Brabant is a double flower, the petals of which are white striped with reddish-lilac, somewhat like an Apple blossom.

Double Blue is rather lilac than blue, but very pretty.

Celeste is a lovely single variety, with obovate blue petals, with a crimson blotch at the base, running out into radiating streaks of the same colour.

Amaranth is very similar to the last-named, but of a pale lilac colour.

Totus albus is, as the name implies, pure white. It is a single flower, of great beauty.

Alba plena is a double-flowered variety, the flowers very full; petals white, with a magenta blotch at the base.

NARCISSUS SEROTINUS.—Mr. Ware sends us under the name N. oxypetalus aurantius what we take to be N. serotinus. It is an autumn-flowering species, with a very slender flower-stalk, bearing at its summit a single white flower, like that of the common Jasmine. The membranous spathe is twice the length of the pedicel, the ovary very small, the flower-tube three quarters of an inch long, very slender, and with a flat six-parted limb, the white segments of which are spreading oblong. The corona is very shallow, divided into six shallow rounded lobes of a rich orange colour. Three outer or uppermost stamens have very short filaments, but project nevertheless slightly beyond the tube, the three inner stamens have much longer filaments given off from the base of the tube but included within it. The style is short. The plant would not get a First-class Certificate, but it would be highly appreciated by the botanist.

COLONIAL NOTES.

ROSES IN MELBOURNE.—Roses are not always cultivated in private gardens here to the best advantage, indeed, one of the reasons for the want of success with them is the frequency of the attacks by aphides, combined with a want of vigour, all superinduced by poverty of soil and nonapplication of water and manure. The Tea Roses bid fair to take a leading place now, at least so far as white and semi-white flowering varieties are concerned, in preference to many of the hybrid perpetuals.

Pruning, too, is but poorly attended to in many instances. The other day I quoted to my sick father (an old and experienced gardener) Mr. Wolley Dod's advice (April 5, 1884, p. 458), to prune with the shears. Well, he smiled at that, and shook his head very dubiously; but when I told him of the still more serious method by means of the donkey (Scotch clergyman's plan), he was fairly convulsed with laughter.

Prune Roses? Oh yes! But how are we to arrange

for a supply of these new "gardeners?" We have one here, who can bite well, too well, alas!—for was he not the cause of the death of an unfortunate fellow who ventured to caress him several months since. The said donkey conveys a barrel-organ or something of that kind, together with its mendicant owner, about our city.

Stand by the old plan, I say; use the knife, and only when required. Do not prune the Tea Roses any oftener than necessary. Prune away, but not too hard, back to last year's wood, in connection with the hybrid perpetuals, and if blight insects (aphides) renew their attack, why, use the Yan Yean water, by means of the hose and director, and scatter them. Roses will come to perfection, and plenty of them, if a common-sense plan be observed and practised. Query: Was the Rev. C. Wolley Dod in a humorous mood when he recommended the plan (?) to which I have referred? Our water supply is from a large lake called the Yan Yean, which is fed by the Plenty River; it is situated about 20 miles from here.

Melbourne Botanic Garden. — Midwinter is scarcely a favourite time for flowers: they are indeed, even in our mild climate, to be found in no great variety. Our coldest season is between May and August, in which we are subject at times to severe frosts, snow only occurring in the upland districts, in parts some 40 miles from Melbourne. Plants in flower are, of course, very scarce as yet, but many kinds might be quoted as bravely flowering, and beautifying some of our gardens, both public and private; however, in some of the latter matters are by no means satisfactory, for scarcely a flower-spike is to be seen.

A quiet stroll through the Melbourne Botanic Garden is at this season interesting and instructive—so the writer of this memorandum thinks, and he is of opinion, farther, that those gardens with no flowers in them at present, might be made passably beautiful by following the example set by Mr. Guilfoyle, in cultivating plants for effect in winter, as he does, so freely, especially by using those with variegated foliage, by way of contrast with others of varied hues. The names of the more prominent of these are Cineraria montana, Iresine Herbstii, Mesembryanthemum cordifolium, Plectranthus Eckloni, Beets (various), Ricinus Gibsoni, Coprosma picturata variegata, Cryptomeria japonica, Veronica Andersoni variegata, Arundo donax variegata, Phormium tenax variegata, Centaurea argentea, and many others. The effect in winter is very pleasing indeed, and the gardens much appreciated in consequence by the numerous visitors who throng the lawns of Buffalo-grass (Stenotaphrum glabrum) on holidays, &c.

The more prominent exotic plants in flower which are to be seen in the garden at the present time, are Berberis Darwinii, Caltha æthiopica, Camellias, various, Diosma alba, Erica Bowieana, Lasiandra macrantha, Lasiandra macrantha floribunda (4½ inches across flower), Mesembryanthemum (various colours), Nandina domestica, Narcissus (various), Polygala myrtifolia, P. grandiflora, P. speciosa, Photinia serrulata, Protea mellifera, P. nigrescens, Pyrus japonica, Thea chinensis, Tecoma capensis, Viburnum Tinus.

Some of the more interesting of the winter flowering plants of Australia, as growing in the garden, may be seen to advantage now in groups (of course, in the open air) set apart by Mr. Guilfoyle for their accommodation. The names may be interesting, as many of their brethren in Europe have to be tended in temperate and hothouses, and treated very carefully to ensure the blooming of the same species, which cost scarcely an effort here; they are Bauera rubioides, Banksia ericifolia, Brachycoma multifida, Correæ speciosa v. pulcherrima (and others), Callistemon coccineum, Calythrix tetragona, Chorozema cordatum, Epacris impressa (pink and white varieties), Epacris longifolia, Grevillea alpina, G. ericifolia, G. macrostylis, Leucopogon Richei, Pittosporum rhombifolium (orange coloured berries only, very effective), Thryptomene Mitchelliana. "*Penrhyn*," *Melbourne*, *July* 14.



Fig. 66.—the flower garden at lynford hall. (see p. 359.)

The Arboretum.

Garrya elliptica.—This handsome evergreen shrub succeeds well in the mild climate of North Wales, and especially so in the valley of the Conway, where it is at preeent fruiting freely in the gardens of Henry D. Pochin, Esq., of Bodnant. I enclose a small branch of it with fruit. *J. Douglas.* [This is one of the very few cases in which we have seen the fruit. The plant is dicecious. Ed.]

Cratægus Douglasii.—What lovely berry-bearing subjects many of the Cratægus family are, and how very seldom the finest varieties are seen in gardens! The whole lot of them are grown well in Messrs. Wheeler's nursery, Gloucester, and the Douglasii seems the most ornamental of all, as it produces large clusters of brown berries, which individually are as large as Morello Cherries. I never saw anything prettier as a berried bush at this season of the year. *J. Muir.*

Planera Richardi, or Zelkoua Tree. — "There are two trees situated in the bowling green of the 'Woodrow Inn' here (Cawston, Norfolk), which are great curiosities; not only each branch, but each twig, bearing leaves of three different kinds of trees—namely, Oak, Beech, and Hornbeam. The trees would have been pulled to pieces years ago by parties taking branches as specimens if it had not been stopped." The above notice in the *Post-office Directory of Norfolk*, 1879, excited my curiosity and a desire to see the tree; and I was gratified when a friend who had passed through Cawston brought me

a twig bearing leaves of very dissimilar appearance. I at once recognised the tree as Planera Richardi, of which I have for many years possessed a growing tree. The leaves differ quite as much in their venation as in outline; and it is remarkable that no notice is taken of this singular feature in Lindley and Moore's *Treasury*, nor in Lindley's *Vegetable Kingdom*, nor in Loudon's *Arboretum*. The fertile catkins on my tree all grow on the Hornbeam-leaved twigs; it is now too late to search for the barren catkins, but I shall search for them next spring. Loudon writes in high terms of the quality of the wood. I do not see the tree named in any nurseryman's list, but I observe that Loudon mentions that young plants had been raised, in his time, in France, from seed sent by the French Consul at Tiflis. *Geo. E. Frere.* [There is a fine tree at Kew, and another we believe at Sion. ED.]

EDGE HALL.

(*Concluded from p.* 334.)

IN the herbaceous borders Codonopsis ovata was new to me, and I am glad that I know now what it is like. The worst part of it is that you have to look into this flower before its markings are visible. They are certainly very much to be admired, and in a way they reminded me of those of Calochortus, but I think they are not quite so refined and the pendulous habit of the plant detracts from its excellence. Aster Townshendi was not doing so well this year as I have seen it before, but Meconopsis Wallichi was making up for any deficiency on the part of others; it was grand in the extreme, its tender blue colour quite stands by itself and its eye of gold sets it off wonderfully. In Mr. Dod's garden I came across what is to me the saddest sight in the year—I refer to an apparition of the first single Dahlia in bloom. Paragon had opened for the year 1884! That means that all spring and even some summer flowers were over. All the Irises, all the Primulas, the Scillas, the Leucojums, nearly all the Anemones and some Roses, &c., have had their day. Anemone rivularis was the solitary exception to all this which I saw. The reign of Composites had begun! There is no accounting for taste, but I never can see how the attractions of autumn can be compared with those of the spring. In the latter case everything appeals to you individually, and form and delicacy of colour lend grace to the tiniest subjects. In the former case it is quite true that there is in a way an individual appeal—at any rate it is so in a garden like Mr. Wolley Dod's; but this comes off best by far when both size and breadth are undoubted. Large plants, large borders, seem to comport with the autumn, and the grand colours that take with one then should never be poured out in driblets. This is one reason why the gardens at Edge Hall are unrivalled in August and September. Such a plant as Helenium pumilum seems to say to every passer-by, "You never could tell at all what I am like until you came here." The relation of a haystack to a hillock expresses the relation between Mr. Wolley Dod's plant and anything I had seen before of the same sort; but this means if you think of all the Echinaceas, and all the Grindelias, and all the Rudbeckias, and all the Asters, and all the single Dahlias, and all their innumerable allies which are spread over this garden, a vision of glory which could not easily be surpassed. Mr. Dod's Composites seem to be put in composition themselves, and they are a hundred times better for it. There is only one thing about which, with trembling pen, I am so bold as to say a word. I refer to Mr. Dod's system of labelling. It no doubt answers his purpose well enough, for he carries the names of his plants so accurately in his head that for him they do not want labels at all; but it would puzzle any one else who might take office under him, and certainly posterity will never be much better for his correct nomenclature if he leaves things as they are. It would surprise me to see Mr. Wolley Dod win the prize at a label show, and I believe so entirely in whatever names he makes out for and affixes to his plants that I feel they ought never to be lost. All that Edge Hall wants is a few glass-houses for bulbs, and then there would be little left to be desired. I must not however omit to mention his Lily-house, which is a decided success. Mr. Wolley Dod has hit on this notion and has worked upon it successfully, and Lillium Hansoni, L. Humboldtii, L. Washingtonianum, L. Parryi, and L. neilgherricum, were finely responding to his desires. L. Parryi was new to me, and the clear yellow of the flower—very much after the colour of Erythronium americanum—was a set-off for the others, and very pleasing indeed.

Suffice it to say that Mr. Wolley Dod's frames and seed-pans and back places for raising plants are very much after the fashion of those at the York nursery. Nothing is done at Edge Hall by halves, and if any one wanted to know the scale on which Mr. Dod proposes to work I should recommend him to go behind the garden into the field which adjoins it. A firm for making patent manures or for dealing with garden necessaries would seem to have set up an establishment there, all the mysteries of gardening are understood to the depths—every ingredient which can command success in it is stored up in large quantities. I am sure that Mr. Wolley Dod will beat the weather, and will do without ozone, and will get on without the sun, and will stand the rain, however much of it he may have in Cheshire. I do think these are great drawbacks to his position from a gardener's point of view, but his skill and energy will overcome them all. *A Wanderer.*

THE PROPAGATOR.

Osmanthus Aquifolius variegatus.—The best wood for propagating this plant is that of the medium-sized growths, it should be quite hard and well finished up. Make into cuttings 3 inches long, dibble into the soil to the depth of 1 inch, and water them.

Passiflora cærulea.—From this plant choose some ripe pieces, cutting them off at a joint, and each piece to have two leaves attached. Place in the frame, and press each cutting firmly into the soil.

Rubus laciniatus, R. leucodermis, R. rosæfolius, R. coronarius.—These plants can be propagated most freely from the roots. Some pans should first be prepared; they should be filled with sandy loam after being well mixed and sifted through a ¼-inch sieve. Press the soil into the pans and a ¼-inch layer of river sand on the top of the soil and water each pan so as to solidify the soil. Procure some strong roots, and after having cut them into 2-inch lengths dibble them into the pans prepared; the top of each piece of root should be level with the surface of the soil. The holes made by dibbling can be filled up with dry sand. When they have been well watered, place in a cold frame or on the platform of a cold-house, but care should be taken never to allow them to become dry. As soon as the growth they have started reaches the length of 2 inches each piece must be potted in a separate pot. They must then be kept well watered and given plenty of air until they are well rooted. At that time they can be potted into larger pots, but they must be replaced in the frame and kept watered until they are strong enough to stand outside.

Schizophragma hydrangeoides. — Strong pieces of this plant, 6 inches long, with two sets of leaves and a bottom joint, are suitable for cuttings. Dibble 3 inches deep into the soil, and press in each cutting firmly.

Many of these plants enumerated are of great service when grown in pots for conservatory and indoor decoration, the Eulalias, Euryas, and Gyneriums being particularly serviceable for those purposes. All the others are of sufficient importance to render it very desirable to increase the stock of them. *T. O'B.*

TUBEROUS BEGONIAS FOR BEDDING.

TUBEROUS BEGONIAS have been special favourites of mine since their introduction, and I take some little credit, in my own way, in having recommended their cultivation to my garden friends in Ireland and elsewhere. It is wonderful how their culture indoor and out spreads in all directions. I doubt if there were a dozen in any garden or greenhouse in this country half a dozen years ago. At all events, in returning from Paris with some friends interested in horticulture, in 1878, and going through Messrs. Veitch's establishment with Messrs. Dominy and Taylor, we were shown the first white one that Mr. Seden was testing outdoors, to try its adaptability to cool treatment. Now in numerous private unpretentious gardens I meet in my rambles a dozen or more beds, with as many varieties. But I may remark in passing, though the varieties offered by Messrs. Cannell, Laing and others in England, and Messrs. Saunders, Dickson, &c., in Ireland, can be counted by the hundred, the number suitable for bedding is only a fraction of the total. What I mean by suitable is this:—1. To have bright, showy colours. This would exclude whites, yellows, light roses, lemon, buff, and salmon and intermediate shades. These colours are never popular for outdoor bedding, and that is what I have now under consideration. 2. They must be floriferous. If a variety is a shy bearer, or relatively tender, it will never make its way in the flower ground beside others that give a blaze of brilliancy continuously for months. This is why in my visits to gardens where tuberous Begonias are bedded out largely I find such varieties as B. Sedeni and B. Florian among Pinks, B. Lelia and B. Oriflamme among crimsons, B. Vesuvius and B. Paul Masurel among scarlets, and B. Fournierii, B. Monarch, &c., among reds, generally preferred to much larger and newer varieties that are not so free bloomers. I must not, however, be understood as saying that there are any Begonias, single or double, that would not live outdoors during July, August, and September. I know at least two amateurs who grow during those months the very best varieties satisfactorily, including doubles, outdoors. But for general purposes the warm bright showy colours named, and the varieties that are the most profuse and continuous bloomers, will always get a preference. From this point of view I would ask you to suggest that the next issue of nurserymen's Begonia lists contain a separate list of those suitable for bedding out. One note I made, and that I would draw gardeners' attention to, is excessive division of the tubers. In the flower-bed one stalk cannot be so effective as half a dozen or more from one tuber, and if the bed does not look a mass of bloom so as almost to hide the foliage, half the effect is lost. Most gardens were particularly suitable for them this year, but you will permit me to return to the subject. *W. J. Murphy, Clonmel.*

The Flower Garden.

THE brightness and beauty of the summer garden are now rapidly passing away, so that, notwithstanding the fine weather we have had lately, the majority of the flowering plants present a decidedly faded appearance, even the fine-foliaged and subtropical plants, which are the last to show signs of decreasing temperature, are checked in their upward growth, and now appear to expand their sap in the full development of those leaves already formed. To prolong and heighten the few remaining and fast fleeting charms of the garden to their fullest extent, extreme neatness and trimness should be strictly observed, not only in the treatment of the beds, but also in the keeping of the walks, verges, edgings, and everything else in connection with the garden which can possibly improve the general effect. This natural decay and disappearance of everything associated with summer, will forcibly suggest the necessity of again duly providing the requisite material for the decoration of the garden during the seasons, which so quickly follow each other. For the comparatively dull seasons of autumn and winter there is nothing so suitable, so bright, and at the same time so convenient, effective, and economical as a collection of carefully selected hardy late autumn flowering herbaceous plants and shrubs in pots, which can be with the greatest facility plunged in the beds as the summer plants are removed. By this means all decaying objects may be cleared off before they become objectionable, and the garden immediately assumes a varied and cheerful aspect, contrasting most favourably with the appearance of such as are left unchanged till autumn frosts have made them painful to look on. Amongst the most suitable herbaceous plants for this purpose I would mention the following:—Asters, Amellus, Amellus roseus, Chapmanni, lævis, Novæ-Angliæ, salsuginosus, grandiflorus, bessarabicus, and longifolius var. formosus, and turbinellus; Veronica Andersoni, V. Traversii, V. longifolia, V. sibirica alba, and V. s. a. variegata; Tritoma uvaria grandis, Solidago bicolor, lævigata, and rigida; Senecio pulcher, Sedum spectabile purpureum, Helleborus niger and H. variegata; Funkia lanceolata and F. alba; Crocus sativus, Colchicum autumnalis, and C. alba; Chrysanthemum maximus, Amaryllis belladonna. With these may be associated various hardy ornamental grasses, Bamboos, and other suitable plants of graceful habit of growth, as, for example,

such as Arundo conspicua, donax, and A. c. variegata; Bambusa aurea, B. gracilis nigra, B. Fortunei, and B. variegata; Dactylis glomerata and D. elegantissima, Eulalia japonica, Gynerium pumilum and variegatum, Phormium tenax and P. variegata, Chamærops Fortunei. To this list may be added the best hardy kinds of shrubs, such as Andromeda floribunda, Aucuba japonica fœmina, vera nana and limbata; Erica herbacea carnea, mediterranea rubra and alba; Cotoneaster microphylla, Arbutus Unedo, Sweet Bay, Buxus nana variegata, Daphne laureola and pontica, Elæagnus reflexa, Eucalyptus globosus, Euonymus japonica, E. argentea variegata, E. aurea and E. radicans alba marginata; Ilex, silver and gold-leaved; Hedera tricolor variegata and argentea; the Myrtle-leaved Laurel, Viburnum Laurustinus alba, and V. tinus; Mahonia japonica, Yucca gloriosa, Y. recurva, and Y. filamentosa; Andromeda calyculata major, Kalmia angustifolia and K. myrtifolia; Rhododendrons of sorts, such as R. dauricum, R. fragrans, R. hirsutum, R. lepidotum, R. multiflorum, and R. præcox; Althæa frutex alba, A. ardens, and A. elegantissima; Amygdalus communis and A. sinensis; Cydonia japonica, Cornus mascula variegata elegantissima, Forsythia Fortunei, Magnolia conspicua and M. Norbertiana; Daphne Mezereum alba and M. rubra; Persica dianthæflora, flore-pleno and alba. From these lists may be selected plants sufficiently varied in character for use in the largest garden, and such as will prove effective through the autumn, winter, and early spring seasons. For a small garden, however, it would be much better to use a more limited number of species, as the object should be rather to use a few good kinds than to introduce too much variety in a small space. It is also very essential that the plants should be selected so as to be suitable to the size and shape of the beds. In addition to the plants already enumerated a few of the more dwarf and graceful kinds of Coniferæ may be advantageously used if judiciously interspersed amongst the other plants. The most suitable are Biota orientalis aurea and B. elegantissima, Cryptomeria japonica and C. viridis; Cupressus Lawsoniana, C. L. argentea, C. L. erecta, C. L. glauca, C. L. gracilis, and C. L. minima; Juniperus chinensis aurea, and J. sinensis, J. variegata, J. excelsa, J. stricta, and J. glauca. Retinospora ericoides, R. filifera, R. gracilis, and R. plumosa; Thuia gigantea, T. compacta, T. ericoides; Thuiopsis borealis, and T. dolabrata. For planting small, and the margins of larger beds a few carefully selected free-flowering spring plants may be used, such as Violas, Primroses, Polyanthus, Pansies, Aubrietia, Daisies, Hepaticas, Arabis, Wallflowers, Violets, and Myosotis. Groups of early flowering bulbs may be associated with these plants as also introduced in suitable positions between the larger plants and shrubs. They should consist of Aconites, Snowdrops, Crocus, Narcissus, Tulips, Crown Imperials, Hyacinths, and Turban Ranunculus. The effect when thus planted will be more varied and much more pleasing than the usual method of massing large quantities of bulbs alone, or in combination with the ordinary spring plants only; which, at best, give but a blaze of colour for a short time and at great cost, whereas when grouped amongst flowering plants and other shrubs, as here described, the usual flat and monotonous surface is broken into irregular and graceful outlines, while the bright and varied tints of the Coniferæ and other fine-foliaged shrubs give an additional charm by contrast with the flowers associated with them. The effect of these shrubs is pleasing even at mid-winter, when the smaller plants are frequently hidden by snow or considerably damaged by storms of wind and rain. When once purchased and potted in suitable compost they last for many years, with little trouble and expense, by simply plunging them in an open position in the reserve garden during the summer months, where they simply require to be occasionally watered and pruned into shape, and where they are ever ready when required for the purpose mentioned. By a more liberal use of such plants in the flower garden the great annual expense incurred in the purchase of new bulbs may be partially avoided, and an ever-changing, ever-pleasing effect be produced with a comparatively small amount of labour and cost. *T. S. C.*

Acer Negundo variegatum, and other Shrubs.—To all lovers of gardening I would beg leave to mention that one of the most charming of beds, to my mind, can be made by planting the following beautiful flowering and foliage plants, namely, Acer Negundo variegatum, Lobelia cardinalis, Hydrangea paniculata grandiflora—these three to be mixed together; and for an edging to the bed use the lovely Ceanothus azureus. The latter plant is not grown as it ought to be: if grown in pots and plunged in a bed of this description, it will flower all the summer, and once seen in company with the above will not be forgotten. To all who like something besides the usual run of bedding I would recommend the above as worth a trial; and should any one doubt the flowering qualities of Hydrangea paniculata and Ceanothus azureus I would advise them to have a peep at Messrs. Veitch's Coombe Wood nursery, for, like many other good things to be seen there, these two were grown well and in quantity, and when I saw them they were covered with flowers. *W. C. L.*

The Hardy Fruit Garden.

Those who possess such kinds of Pears as Marie Louise, Beurré d'Amanlis, Louise Bonne of Jersey, Doyenné Boussoch, and Seckel, will require to gather them, choosing the afterpart of the day, when they will be quite dry. Gather them carefully, and stand the baskets on a hand-barrow, when they can be carried carefully to the fruit-room. There are many kinds which will require, some another fortnight, and others a month, before they are gathered, but it is one of those things in which only practice makes perfect. That fine winter Pear, Knight's Monarch, as usual, is shedding its fruit, so that there is no help for it but to get them in, choosing a cool dark part to store them away in, for it should not ripen for another two or three months yet. The unusually hot summer has hastened the period of many of our Apples, and many of the autumn kinds must be got in, especially large kinds on lofty trees, which a heavy gale would bring down, and spoil a great portion of the crop; but let nothing tempt one to get the winter and spring kinds for another month yet, otherwise they will shrivel and lose half their value. Singularly enough, that sweetest of all Apples, the Gravenstein, is a fine crop here this year on the Paradise stock. Once more we would urge upon gardeners the necessity of regularly picking up windfalls; nothing can well be more unpleasant for an employer than to go through the orchard and see quantities of rosy fruit lying in the dirt.

The nights are getting cold, so any Figs which seem backward in ripening may be gathered and put in a basket over the hot-water pipes in the late vinery; there they will finish up tolerably. Mulberries are a good crop in most localities, and any late fruit makes an excellent tart, and is a special favourite of some.

Nuts are sooner ripe than usual, therefore must be got in. Some place them in glazed jars, with a sprinkling of salt, with an air-tight lid, where they keep quite fresh till the spring; but we would repeat it again, the great mistake with most winter fruits is keeping them at too high a temperature during winter.

Let nothing in the shape of a hot-water pipe or stove be ever found in a fruit-room; oftentimes one finds during the winter or spring months windfalls which have lain all winter in the open orchard, with perhaps only some long grass or leaves to protect them, quite fresh, while those in the fruit-room of the same kind are all past and gone, and one has not far to seek for the cause.

Nets which have done duty in protecting our fruit crops against birds, may now, if not already done, be all carefully labelled and put away in a dry place for another year.

Continue to gather Plums as they ripen; but late kinds, such as Grand Duke and Wydale, will be better next month; and the same applies to Golden Drop and Impératrice among dessert kinds on north walls: they will be most excellent next month. The Farleigh or Crittenden Damson is a splendid crop here—indeed, it always bears—and the Shepherd's Bullace is a valuable late kind, and is sweeter and better after frost.

As we pointed out in a previous Calendar, the leaves should be turned aside or picked off, to allow the late Peaches to have the autumn sun to colour them. Walburton Admirable, Late Admirable, and Thames Bank are now getting ripe; the last named kind never fails to bear, and ripens in the latter part of September.

As wasps are very numerous, continue to take nests, and to entrap them by a variety of contrivances. *J. Rust, Eridge Castle, Sussex.*

The Kitchen Garden.

Cauliflowers.—Prick out the first batch of these under hand-glasses, placed in rows 2 feet apart, so that there is room between the glasses in the row for the top of each glass to be placed when taken off; for this purpose four bricks should be placed in position for the covers to rest upon. Previous to putting out the plants a surface-dressing of wood-ashes should be put on to prevent the attacks of insects. We put from six to nine plants into each hand-light, the latter being of two sizes, 18 inches and 22 inches square respectively, and we shall thin out the plants to three and five in February and March next, lifting them carefully with all the adhering soil, which are then transplanted into a suitable situation. In order to maintain a sturdy growth the top lights must be left off, and only be replaced on the approach of frost or during heavy rains. The plants in glasses which I am now referring to will occupy a piece of ground adjoining the recently planted Cabbages, and which has been deeply trenched and liberally manured. The plants thus treated, together with a few hundred plants wintered in 3-inch pots, will supply our earliest Cauliflowers in May next, and to which these plants raised from seed at the same time as those in glasses, and subsequently pricked out in a cold pit or frame 5 or 6 inches apart every way, and transplanted a week or two later than those in pots, will make a capital succession. These plants, like those in the hand-glasses, should have the sashes and shutters left entirely off in the absence of frost, heavy rains, or snow, the object to be attained in each case being identical—a sturdy growth. Failing the above accommodation, a sufficient number of plants may be wintered in an improvised frame fixed in a warm corner and protected during frosty nights with hurdles to which mats have been fixed, the whole to be covered with dry Fern in the event of severe frost.

Lettuce.—This is another important crop, and one that requires some care in wintering it. The plants raised from seeds sown at the same time as the Cauliflower, will now be ready for pricking out in pits, frames, and warm borders. These may be grown in the same way and under the same conditions as those recommended for Cauliflower plants in glasses, but a greater number of plants may be put under a light or in pits, &c. Those for early spring use are wintered in glazed pits, and planted in rows about 6 inches apart in light soil, and which should be within about 9 inches of the glass. In addition to these there are wintered a great number of plants in a shallow frame with wooden shutters and Fern as a means of protection from frost when necessary; and also on a warm dry border, at 6 inches between the rows, and 3 inches in the rows, we make our last planting, covered lightly on the approach of frost with Fern, which in the event of severe weather is increased, and again removed and replaced as may be found necessary. Before pricking out the young Lettuce plants and finally transplanting them, it is a good plan to surface-dress the ground with fresh soot, which should be raked in slightly. This I find, from several years' experience or its use, serves not ony as a safeguard against the attacks of insects, but also as a fertiliser of the soil.

Ordinary Work.—Advantage should be taken of fine days to ply the Dutch hoe freely, to destroying small weeds, and for the purpose of aërating the soil between the rows of Onions, Lettuce, Spinach, Endive, and other crops, which will accelerate growth in the plants. Any blanks that may happen to be in rows of autumn-sown Onions should be made good with young plants thinned out of the same rows, and these should not be buried deeper in the soil than they were before. Thin out plants of Lamb's Lettuce to about 4 inches in the row, and, if necessary, extend the crop by transplanting some of the thinnings. The recent fine weather will have allowed of the earthing-up of Celery, and late plantings of Broccolis, Savoys, and Leeks to be made.

French Beans, and Scarlet Runners.—Good gatherings of these should be made before they get nipped with the frost, and be spread out on a shelf in a cool room. In this way Beans may be had nice and fresh for three weeks or a month after the plants have been killed by frost.

Frame Ground.—On the approach of frost it will be necessary to lift all the full and half-grown Lettuce plants, and lay them in by the heels at a little distance apart for present use. Make a sowing of Wood's Early Frame Raddish forthwith, and as soon as the plants appear through the soil, ventilate freely, removing the sashes daily during fine weather from all hardy crops growing under them. *H. W. Ward, Longford Castle.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 22	Sale of Bulbs, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms
TUESDAY,	Sept. 23	Sale of Stove and Greenhouse Plants, at Fischer's Nursery, Clapham, by Protheroe & Morris. Royal Horticultural Society's Show for Fruit and Vegetables (two days).
WEDNESDAY,	Sept. 24	Sale of Bulbs, at Stevens' Rooms Clearance Sale of Plants, at Haven Green Nursery, Ealing, by Protheroe & Morris. Seedling Potato Show at Northampton (two days)
THURSDAY,	Sept. 25	Sale of Established Orchids, at Stevens' Rooms. Great Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of the Plants and Lease, &c., at The Swiss Nursery, Brixton, by Protheroe & Morris.
FRIDAY,	Sept 26	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Sept 27	Sale of Bulbs, at Stevens' Rooms Sale of Bulbs, at Protheroe & Morris' Rooms

THE death of GEORGE BENTHAM constitutes in some measure the close of one era in botanical history, so far as this country is concerned. Hitherto the greatest reputations have been made in the department of systematic botany, and we have had in former years frequent occasions of expressing our regret that the physiological side was unduly neglected. Now-a-days the tendency is in the opposite direction, and we cannot but think that the completion of the *Genera Plantarum* and the death of GEORGE BENTHAM, the associate of BROWN, Sir WILLIAM HOOKER, LINDLEY, and others who are gone, will accentuate that tendency. Whether this is for good or ill is a point we do not care to discuss now; our present business is to lay before our readers in faint outline some account of the career of one of our greatest scientific worthies—one to whom horticulture is under great obligations, but of whom none but a few students have had the opportunity of knowing much.

GEORGE BENTHAM, the son of General Sir SAMUEL BENTHAM, was born on September 22, 1800, at Plymouth, his father being then Inspector of all the Royal Dockyards. From his uncle, the famous jurist, JEREMY BENTHAM, the future botanist probably derived much of that logical precision and method which characterised him in later years. While still a boy he passed some time at St. Petersburg, where he acquired a knowledge of the Russian language. From 1814 to 1826, or thereabout, BENTHAM lived with his family in the neighbourhood of Montpellier, and there he began his botanical career by a practical examination of the wild plants of Angoulême and Montauban, quickly followed by further researches into the flora of the Pyrenees. His first work, a *Catalogue of Plants Indigenous to the Pyrenees and Bas Languedoc*, was published in French in 1826, and was the outcome of excursions made either by himself, or in company with WALKER-ARNOTT, REQUIEN, and AUDIBERT. In the preface to this volume we already find indications of the mental tendencies by which he was guided in after-life. Special stress was laid on the verification of the original type-specimens, upon which authors have founded their descriptions—a point not at that time judged to be of such exceeding importance as now. Still more characteristic is his deprecation of the "extreme multiplication of badly defined species"—a fact which led him to describe afresh the French species of Cerastium, Orobanche, and Helianthemum, and which later on elicited many protests against the loose way in which garden plants are named and described.

"If I have ventured to differ from that learned botanist (DUNAL), as to the number of species (of Helianthemum), it is," says BENTHAM, "because I have observed on living specimens that the characters upon which they have been established are very variable and too intricate not to introduce yet greater confusion into this difficult genus." We have here an acknowledgment of the importance of studying living specimens and of the great variability of species. With reference to these variations BENTHAM insists on the impropriety of giving separate names to accidental or minor variations. No name should be given to a variety unless it is the outcome of a permanent change in numerous individual plants, but of which a regular series of intermediate forms demonstrate the connection with the primitive species.

Returning to England in 1826 BENTHAM at first turned his attention to the law, but speedily devoted himself exclusively to botany. He attached himself to the Horticultural Society in the days when that society did excellent service by despatching collectors to various countries, and, together with LINDLEY, undertook the determination of the many species introduced by DOUGLAS, HARTWEG, and others. Thus commenced that friendship with LINDLEY, whose uninterrupted progress was so congenial to the men, and so productive of good results to botany. BENTHAM was Secretary to the Horticultural Society from 1829 to 1840, his predecessor having been Mr. SABINE, and during his secretariat it was that the Chiswick *fêtes*, which were afterwards to be so famous, were first instituted. In his report to the Council and Fellows in 1834 BENTHAM tells us how, with a view of bringing the Fellows together, and of interesting them in the practical work of the Society and its associated gardeners, an annual dinner was established, and after that *fêtes* or public breakfasts were held. These not proving wholly satisfactory it was resolved to have three special exhibitions in Regent Street, where the Society then and for long afterwards had offices. The first of these exhibitions was held on April 3, 1832, and was devoted principally to Camellias; the next, on June 5, to Azaleas and Rhododendrons; the third, on July 3, to Roses. At these exhibitions medals were given, amongst others, to Messrs. CHANDLER, LODDIGES, GEORGE SMITH, WATERER, JOHN LEE, and other well-known names, some extinct, horticulturally speaking, others still with us. The rooms in Regent Street being found too small and crowded, an exhibition was held for the first time in the Society's garden at Chiswick in 1833. For this purpose, a tent supported by iron pillars, and 150 by 100 feet in area, was purchased, covering a central circular and side stages. At this, the first of the Chiswick *fêtes*, 1700 people were present. BENTHAM goes on to describe how the shows were repeated, and gives official details concerning them which we need not repeat here. However personally interesting this connection of BENTHAM with the Chiswick *fêtes* may be—an association which, we suspect, will occasion some surprise—yet it is more important to note that during his tenure of office he described many of the introductions of DOUGLAS, his descriptions being accompanied in some instances by coloured plates, which put to utter shame those that pass current in our own times. It is curious to see among such plants the Eschscholtzia, the Limnanthes, Calochortus, Clarkia, and other now common garden plants, which few remember were introduced by DOUGLAS, while still fewer remember or care to remember that they were botanically registered by BENTHAM, to whom, by the way, we owe the description at this period of Salvia patens. Fortunately his fame does not depend upon such things. The first part of the enumeration of the plants collected by HARTWEG on behalf of the Society was published in 1839, and with this, so far as we are aware, his connection, as an author, with the Horticultural Society ceased.

From that time till a year or two ago BENTHAM was constantly at work elaborating monographs of genera and orders, or preparing Floras of various countries. The amount of work he achieved is enormous, and could not have been done but by such steady, unwearied perseverance as BENTHAM exhibited. As these works embrace numerous monographs of such orders as Labiatæ, Scrophulariaceæ, Leguminosæ, and others (including a large proportion of those included in DE CANDOLLE'S *Prodromus*), and more or less complete Floras of Mexico, Guiana, Brazil, Fiji, Hong Kong, Australia, to say nothing of the *Genera Plantarum*, to which we shall hereafter advert, it is clear that BENTHAM'S services to horticulture are both wide and deep.

To enable him to prosecute his researches BENTHAM gradually accumulated a vast herbarium and library, which in 1854 he made over to the nation, with the sole conditions that they should be accessible to the public, and that he himself should have facilities for carrying on his labours. These, incorporated with the corresponding collections of his intimate friend and associate, Sir WILLIAM HOOKER, now form the basis of the unrivalled collections at Kew. Here, day after day, with the regularity of a bank-clerk, BENTHAM laboured assiduously at his monographs, allowing himself little, if any, relaxation beyond the annual holiday (usually spent on the Continent, and largely taken up by visits to and study in botanical establishments, and in former years by botanical explorations in various parts of Europe).

BENTHAM was a frequent contributor to Sir WILLIAM HOOKER'S numerous botanical works and periodicals, and when that botanist conceived the project of publishing a series of Colonial Floras he found a most valuable coadjutor in BENTHAM. To him was entrusted the preparation of the *Flora of Hong Kong*, a model of its kind, and which was succeeded in due time by the *Flora Australiensis*, in seven volumes, itself a marvellous production for one man to accomplish. In this work BENTHAM had the co-operation of Baron VON MUELLER, of Melbourne, who transmitted, Order by Order, his collections for BENTHAM'S examination, as well as his numerous notes.

These numerous monographs of Genera and orders, and these investigations into the flora of the greater part of the globe, gave to BENTHAM a larger and more detailed knowledge of flowering plants than has probably been possessed by any other botanist whatever.

His friendship with the HOOKERS, WALLICH, LINDLEY, ASA GRAY, and with all the principal botanists of Europe, his daily association and frequent consultations with Professor OLIVER and the officers of the Herbarium, his powers as a linguist, all contributed to make him a specially fit person to undertake a *Genera Plantarum*. From such a work profit in the ordinary sense was not to be expected; in its preparation an infinitude of labour and patience were imperatively demanded. BENTHAM was not dismayed. At an age when most persons would be thinking of lightening their labour BENTHAM, in conjunction with Sir JOSEPH HOOKER, undertook the preparation of the *Genera Plantarum*.

The publication of this work was begun in 1862, and terminated in April, 1883. In a recent volume of the *Journal of the Linnean Society*, BENTHAM tells us what share was taken by each author respectively, from which it appears that being untrammelled by official duties, the larger share of the work fell to the elder botanist. There is something very touching in the way in which BENTHAM, recognising the way in which his fellow-labourer's time was occupied by official and public duties, himself undertook some of the most laborious portions of the book, so as to lighten his coadjutor's labours, and relieve him of anxiety as to the progress of their joint labours so far as possible.

This invaluable book is the outcome of the personal investigation of the authors. They were not content to condense other people's descriptions, but they examined and compared for themselves every genus of which there were



Fig. 67.—Hydrangea quercifolia. (see p. 370.)

specimens in the Herbarium, collating the descriptions published by others, adjusting the synonymy, furnishing adequate references to the literature, and thus forming a work which cannot be surpassed, and is not likely to be even imitated. During the course of its publication BENTHAM published numerous exhaustive memoirs and commentaries in the *Journal of the Linnean Society*, in which he discussed at greater length than the plan of the *Genera* allowed, the structure, affinities, and geographical distribution of many of the Orders, and which are masterpieces of insight and logical method. Thus, day after day, for more than twenty years, the great book grew, nothing having the power to stop, though much to delay its progress. A story told of BENTHAM during this period, and the substantial correctness of which we can affirm, is eminently characteristic of the man.

Late on one afternoon, at the end of a week, when most of the officials were thinking of concluding their labours for the day, BENTHAM came to the end of his revision of the Orchids —a task that had occupied him for many consecutive months. Without taking pause, as most people would have done after the accomplishment of such a task, BENTHAM simply summoned an attendant, and requested that the Gramineæ—the grasses—might be brought to him, and then and there he entered upon another task before whose magnitude and intricacy most men would recoil.

BENTHAM was a man of shy and retiring habits, who rather shunned than sought notoriety and repute. The honours due to him came late in life, and had to be pressed on him rather than conferred. It was only comparatively of recent years that he became a Fellow of the Royal Society, though, had he wished it, its portals would certainly have long before been opened to him. From the Society he received one of the greatest honours in their power to confer—the award of a Royal Medal. He was also a Member of the Institute of France, and associated in some form or another with most of the scientific societies of the world. In 1861 he accepted the Presidency of the Linnean Society in succession to Prof. BELL, and for the thirteen years during which he presided over the destinies of the Society he devoted himself with characteristic thoroughness to its work. No detail was too minute for his consideration—he did the work not only of President, but largely shared in the labours of the Librarian, Secretary, Treasurer, and especially of the Editor. Not only his time but his purse were at the disposal of the Society, and his only thought appeared to be how best to secure its prosperity and usefulness. In this position BENTHAM showed not only his power of persistent work—that was known before—but his business tact, which was less well known, and especially his philosophic mind. This latter attribute was probably well known to his intimate friends, but it came as a surprise to those who had looked on him as merely a systematic botanist—a very eminent one, but still a systematist, as it was thought, pure and simple. The series of anniversary addresses in which prevalent theories relating to the life-history of organised beings, to hybridism, dimorphism, geographical and geological distribution, were discussed, and those devoted to summaries of the progress of biological science afforded evidence of philosophic insight, shrewd perception, and cautious generalisation. His utterances were of the highest value at the time when the scientific world was keenly interested in Darwinian theories, and the world outside adopted a tone half-contemptuous, half alarmist. At such a period the utterances of a man so specially well qualified to give an opinion, from his life-long studies of the very point at issue—that of the limits of variation—became of immense importance, the more so from his unimpassioned temperament. What bias he possessed might have been expected to have been manifested—and manifested strongly, too—in favour of the old view of the immutability of species. His diagnostic characters in his various works are so sharp and concise, that considered by themselves they might be regarded as indicating the existence of fixed limitations to the species thus so clearly marked out. But this would be a mistaken view. It is only necessary to read his accompanying comments, to observe the plan adopted in his admirable *Handbook to the British Flora* and the Colonial Floras, to see that he always recognised the arbitrary nature of the limitations which circumstances compelled him to draw. An illustration of it is afforded even in the preface to his *Catalogue of the Pyrenean Flora*, to which we alluded at the beginning of this notice. In any case, BENTHAM, in his official capacity as President of the Linnean Society, while strongly deprecating vague discussions on points of mere speculative opinion, as tending to foster dissension and to retard rather than accelerate progress, nevertheless gave the sanction of his vast experience and reputation to the Darwinian doctrine of evolution, and by so doing no doubt influenced many who relied on his experience and cautious judgment when they would have shrunk from the aggressive advocacy of some of the apostles of the new doctrine.

Of the events which led to his resignation of the Presidential chair we need say no more than that the Society then lost the officer who more than any other was devoted to its best interests, and that the line of conduct he pursued in the particular emergency was subsequently pronounced by Lord HATHERLEY, to whom the case was submitted, to have been the correct one.

With BENTHAM we fear dies a vast amount of knowledge of the history of botanists and of botany during the century, a circumstance to be infinitely regretted, as British botany during that period has passed through a really brilliant phase, and produced men like ROBERT BROWN, WILLIAM JACKSON HOOKER, LINDLEY, and others, whose careers illustrate a distinct epoch in the history of botany.

It remains to say a few words as to the man apart from the botanist and the philosopher. If this be thought in this place an impertinence—as, indeed, it would be in most cases—there is justification for it in the fact that BENTHAM, as a man, was little known, save to his intimate friends. To strangers, and even to those who had some slight acquaintance with him, there was an air of reserve about him which bordered on brusqueness, and might be mistaken to indicate an unsympathetic nature. The truth was far otherwise; BENTHAM was warm-hearted and full of generous impulses, the kindliest of critics, the firmest of friends.

—— HYDRANGEA QUERCIFOLIA.—This is an old-fashioned species, not often met with, but which is amply deserving more notice. In the first place it is quite hardy, then it is free-flowering, handsome when in flower, and the bark peels off in flakes, like that of the Arbutus or Plane. The flowers are white. The species is a native of the North-eastern United States. The specimen from which our illustration (fig. 67) was taken was forwarded by Mr. W. E. GUMBLETON from Cork, but it is hardy enough to withstand the winters in the Oxford Botanic Garden, as well as near London.

—— INTERNATIONAL INVENTIONS EXHIBITION. —The latest date for sending in applications for space has been extended from October 1 to November 1.

—— BRESLAU BOTANIC GARDEN. — Professor ENGLER, of Kiel, has been appointed Professor of Botany, and Director of the Botanic Garden of Breslau, in the room of the late Professor GOEPPERT.

—— "PLANT LORE: LEGENDS AND LYRICS."—This work, by Mr. RICHARD FOLKARD, Jun., embracing the myths, traditions, superstitions, folk-lore, symbolism, and language of the plant kingdom, is announced as ready for publication, by Messrs. LOW & CO.

—— A JAPANESE FIRM.—The long felt desideratum of a native house in London dealing in Japanese bulbs and other horticultural commodities, which are now retailed here at figures often higher than their real worth, is now about to be realised, so that the new firm of Messrs. HAYASHI & CO. ought to be welcomed by all gardeners who admire the many beautiful garden productions of Japan.

—— KILIMANJARO. — Mr. JOHNSTONE, whose charming book on the Congo we lately noticed, is now engaged in an attempt to scale the heights of Kilimanjaro, a snow-clad mountain in East Tropical Africa. He had, when last heard of, camped out at an altitude of 5000 feet, and spoke in most glowing terms of the vegetation. Very great interest naturally attaches to the flora of this mountain and its relation to the vegetation of the Abysinnian mountains. We may hope in time for many good things for our gardens from this region.

—— BULBS.—Mr. A. D. WEBSTER writes as follows:—"In the interesting article (p. 299 of your last issue) we are led to believe that the perfection of new bulbs is entirely owing to vigorous leaf-action, and that, deprived of this, both plant and flower must suffer. This may certainly be the case with some bulbs, but not all, as I have proved beyond a doubt that several hardy Orchids when cut over immediately after flowering come up stronger the following season than those left untouched. In the case of many other plants the succeeding growth is strengthened by depriving the present one of its flowers. Is not this the case with various Lilies?" We may point out that removal of the flowers is one thing, that of the leaves quite another.

—— VINE GROWING EXTRAORDINARY.—To the east of London there is a sewage farm, where a portion of the sewage is from time to time poured upon some 4 acres of Osiers. Between the Osiers a large quantity of seedling Vines systematically make their appearance, and as large quantities of Raisins and Currants are strained off at the works, it is to be presumed that the seedling Vines are the result of the growth of the seeds which have escaped not only the filtration, but also the culinary processes, artificial and natural, to which they have been subjected.

—— CHISWICK RED TOMATO.—In the Tomato-house at Chiswick this variety is now in perfection. For fruitfulness and beauty there are few, if any, superior. The dense raceme-like clusters of oblong red fruit are very handsome, hanging from the stems like monster bunches of Grapes. The flavour is good, but not equal to that of some others.

—— SEEDLING DAHLIAS. — We have received from Messrs RAWLINGS BROS., florists, Romford, a number of seedling Dahlias of considerable merit, in show, fancy, and pompon varieties. A fine scarlet, of great vertical depth, and very well arranged petals, is seen in Mrs. Douglas. T. J. Saltmarsh, a canary-yellow, with the centre petals dashed with crimson, is an equally well formed flower, only the petals are less numerous. Harry Eckford resembles Chang, in having crimson flakes and spots on an orange-yellow ground—a fine globular flower, whose centre is a trifle loose. Arthur Blick is a small and well-built crimson, neat and pretty. The sorts Mrs. Carter, a rosy-purple; Frederick Wilson, a scarlet, tipped with white; Wm. Dodds, an orange-shaded scarlet, but as seen rather too over-blown to judge of its quality; and Charles Turner, a maroon-coloured bloom, were not poor, although scarcely up to the standard of the show table. Two pretty pompons were Jessie McMillar and Thomas Moore—sorts apparently worthy of perpetuation.

—— FOREST INDUSTRIES IN THE UNITED STATES. —At a meeting of the British Association at Montreal, Mr. ALBERT S. BICKMORE read a paper on the Jessup Collection, to illustrate the forestry of the United States, in the New York Natural History Museum. The author, in the course of his paper, said:—"The great importance of the forest industries and lumber trade of the United States led General WALKER, the Superintendent of our tenth Census, to

provide for a corps of competent experts, under the direction of Professor CHARLES S. SARGENT, who have made new explorations of our forest lands, and gathered original data regarding their present extent. The results of these elaborate researches have been partially published from time to time in the form of bulletins, and the completed work will soon appear in two large quarto volumes of the Census series. To place this great fund of valuable information before the artisan and labouring classes in an accessible form, a great collection of our forestry and its products was needed, and this Mr. MORRIS K. JESSUP generously offered to provide at his own expense. After the field work planned by the Census had been finished, Professor SARGENT directed his assistants to return to the forests, and to carefully select the individually largest and soundest tree of each species. Professor SARGENT is preparing a manual which will be a guide to the collection, and contains all the most important information in the large Census volume that will be useful to the visitors and to the artisan classes. The museum is most fortunate in its location in Central Park, where more of our native and domesticated species are flourishing than can be seen together at any other place on the continent. This is the first effort yet made in this country to gather our woods together into one collection on a scale commensurate with the extent of the new continent and the importance of its forests, and we trust as our people learn more of the utility and beauty of our trees they will come to appreciate the necessity of using every possible means to protect and develope our remaining woodlands for the benefit of future generations."

—— RIPENING THE WOOD OF VINES.—The highest object in gardening under glass which many amateurs aim at, and on which, when successful, they most pride themselves, is to grow a crop of Grapes. Neither is this to be wondered at, for beyond the universally admitted excellence of the fruit of the Vine, there are associations connected with it attached to no other edible fruit. Yet how often are the hopes of each succeeding year only born to perish, as it frequently happens that with ample growth of healthy leaves and stout shoots, the presence of which lead to the expectation of Grapes the next season, when the spring again quickens growth tendrils only appear where bunches should have been. And this goes on year after year until the amateur comes to the conclusion that his Vines are irrecoverably barren, whereas the absence, or all but absence, of fruit is owing to the preceding summer's shoots not having been matured, or, as gardeners generally put it, the Vines have no fruit in them through the non-ripening of the wood. This defect is owing to the insufficient length of our summers, through which, even with the help of a glass covering, Vines often fail to mature their wood sufficiently to yield a full crop. Even in seasons like the present, when we have had an unusual amount of bright weather accompanied by tropical heat, the late sunless spring kept growth so much back that there was not enough length of summer left for the wood to ripen, unless where the precaution has been taken of shutting in solar heat by systematically closing the house each afternoon whilst yet the sun was on it sufficiently to raise the temperature for a time much higher than most amateurs have an idea of as necessary. Where Vines exist that are strong enough to bear, and yet fail, and where the early closing of the house has not been attended to, a fire should be lit every afternoon through this month and up to the time when the leaves lose their green colour, which course will warrant a crop being looked for next year. It is no use firing after the leaves have lost their vitality; whatever condition the wood is in when they begin to turn yellow, such it will remain so far as ability or non-ability to bear the coming season.

—— THE ESSEX FIELD CLUB.—The fifth annual Cryptogamic meeting of the Club will be held on Friday and Saturday, October 3 and 4, in Epping Forest. It is intended to devote the Friday to the collection of specimens, and to their examination and arrangement by the experts, and on the Saturday to hold an exhibition of fresh and preserved botanical specimens, microscopical objects, drawings, &c. The exhibition will be confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. The exhibition will be opened at 4 o'clock on Saturday, October 4, in the large ballroom attached to the "Roebuck Inn," Buckhurst Hill. Ample time will thus be afforded for its careful examination by the visitors present, and all possible facilities will be given to exhibitors.

—— GRAPES AT THE HEALTH EXHIBITION.—At the Fruit and Vegetable Show to be held on the 23rd and 24th inst. at South Kensington, in connection with the International Health Exhibition, the classes devoted to Grapes are very numerous, embracing as they do more than half the schedule. Valuable prizes are offered for collections, as also for special varieties, and spirited competition is expected, which will result no doubt in the greatest display of Grapes in London this season.

—— FORESTRY EXHIBITION AWARDS.—We regret to learn that so much dissatisfaction has resulted from the awards of the Jurors, more especially in connection with the exhibits of plants, that the following nursery firms, namely, LITTLE & BALLANTYNE, THE LAWSON SEED & NURSERY CO. (Limited), IRELAND & THOMSON, JOHN LAMONT & SON, STUART & MEIN, and others, have declined to accept the medals, &c., allotted to them.

—— WOOD PULP IN AMERICA.—The production of wood pulp for the manufacture of paper in Maine, United States, America, is said to have made very rapid progress since 1880. In that year seven establishments were at work employing 220 hands, with an annual product valued at 306,490 dollars. The business has quadrupled since that time, and is still growing rapidly with frequent inventions of new machinery and new methods for reducing the wood fibre to pulp. The wood used is Spruce and silver-leaved Poplar, which grow in great abundance in the State of Maine. The pasteboard quality of paper manfactured is extensively used in the production of numerous articles for household and ornamental purposes; it is very soft, and is easily moulded into any shape required: 20 to 30 tons a day are turned out from the mills. The finer sorts of paper are also manufactured from this pulp after it has undergone a chemical process.

—— GHENT HORTICULTURAL.—The monthly meeting (September 8) for the adjudging of horticultural products, appointed by the Syndical Chamber of Belgian nurserymen, and the Royal Horticultural and Botanical Society in Ghent, took place at the Casino. The jury consisted of Messrs. Peeters, from Brussels, C. Spae, Fr. Desbois, Rosseel, A. van Geert, and L. de Smet, from Ghent. Mr. Peeters, from Brussels, presided; Mr. C. Spae performed the duties of secretary. The following awards were made:—

Certificates.

To Messrs. Blanckaert & Vermeire, from Gentbrugge, for their meritorious lot of single-flowered tuberous Begonias.

To Mr. Aug. van Geert, Mont St. Amand, for his Leea amabilis var. splendens.

To Mr. E. Vervaet De Vos, Zwynaerde, for a white flowered Cattleya.

To Mr. Ed. André, Paris, for a spotted-leaved Philodendron.

Cultural Certificates.

To the Continental Horticultural Company, for Vanda Lowei var. Reichenheimi.

Honourable Mentions.

To Mr. F. J. Spae, Ghent, for his Aspidistra elatior fol. var., exhibited in fruit.

To Mr. Ad. D. Haene, Ghent, for his Pinangua maculata.

—— THE GOLDEN SPERGULA.—It is strange that such a singularly beautiful carpet-bedding plant as this is should not ere now have become universally used. Only ignorance of its exceeding beauty can be held to justify the neglect shown towards it by those who have to provide summer bedding displays for the delectation of their employers or for the public. This season the Golden Spergula is employed in a couple of carpet-beds at Chalfont Park with singularly good effect. Its dense, compact, Sedum-like growth not only forms a carpet that is absolutely perfect, but its rich clear golden hue is most striking. Used as panelling within bands of the emerald-green Herniaria glabra the contrast is remarkable, and cannot be excelled. Mr. WILDSMITH employs this golden-leafed plant also at Heckfield with charming effect, though not so largely as Mr. HERREN does at Chalfont. The Spergula is hardy, and may be increased as fast as can be desired. It retains its rich colour always.

—— FANCY PANSIES FROM BOREATTON.—Mr. H. ECKFORD, who has raised a very fine strain of fancy Pansies, has forwarded a box of blooms, to show the value of the strain. The prevailing drought has been severely felt at Boreatton and the district around it; notwithstanding this the flowers are fine and brilliantly coloured. Some of the tints are novel, and very beautiful, and also extremely varied. A rich velvety-maroon self, suffused with blue, and having a narrow edge of warm rosy-pink, is of fine proportions, and well deserving the name given to it. A posy of these fancy Pansies would prove an acceptable present to any one interested in these charming and popular flowers.

—— A GOLDEN WEDDING.—The rather rare occurrence of a fifty years' celebration of a wedding-day took place at the College Nurseries, Cheltenham, when Mr. and Mrs. WILLIAM HEATH celebrated their golden wedding-day in a very pleasant manner in the company of their many friends and *employés*.

—— PUBLICATIONS RECEIVED.—*Nuovo Giornale Botanico Italiano.—The Naturalist.—Review of the Forest Administration in British India for the year* 1882-83. By W. SCHLICH, Ph.D.—*Annual Administration Reports of the Forest Department, Madras Presidency, for the year* 1882-83.—*London Water; a Review of the Present Condition and Suggested Improvements.* By A. DE C. SCOTT, Major-General, late Royal Engineers (CHAPMAN & HALL).—*La Vigne Americaine.—The Dominion of Canada.—Transactions of the Massachusetts Horticultural Society for the year* 1883.—*Cryptogamic Society of Scotland: List of Members, &c.*

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 15, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been generally fine over the whole kingdom, though some wet fog or mist has prevailed at many of our stations, especially in the north. Over central and eastern England some very heavy dews have occurred. The temperature has been above the mean in all places, the excess varying from 1° in the Channel Islands to 5° in nearly all the English districts, as well as in "Ireland, N.," and "Scotland, W." The maxima, which were recorded on the 13th or 15th, were as high as 78° in the "Midland Counties," 77° in "England, E.," 76° in "Scotland, E.," "England, S.," and "Ireland, S.," and between 71° and 75° in most other districts. The minima, which were registered on different days in various parts of the country, ranged from 39° in "England, N.W.," and 40° in "Scotland, N.," to 51° in "England, S.W.," and 54° in the "Channel Islands." The rainfall has been considerably less than the mean in all districts. Bright sunshine has been more prevalent than it was during last week, the percentages of possible duration ranging from 28 in the "Midland Counties," to 56 in "England, E.," and 58 in the "Channel Islands." Depressions observed:—Beyond a disturbance noticed off our north-west coasts at the commencement of the period and another travelling northwards towards our south-west coasts at the end of the week, no depressions have been observed in our neighbourhood. At first two areas of high pressure were shown, one over Sweden and the other over the west of France and the Bay of Biscay; as the week progressed, however, these united, and gradually formed a well-defined anticyclone over Norway, the north-east parts of our islands, and the northern parts of the North Sea. The wind was light from between south and west during the first few days, but subsequently became moderate or fresh from the east or north-east.

—— GARDENING APPOINTMENTS.—T. LOMAS, Foreman, Longford Hall, Stretford, Manchester, as Head Gardener to F. W. GRAFTON, Esq., M.P., Heysham Hall, Lancaster.—Mr. H. T. JAMES, Gardener to Mr. A. LAVERTON, Farleigh Castle, to Clevedon Hall, Clevedon, Somerset. He is succeeded by his brother, Mr. E. H. JAMES, of Westbury House Gardens.—Mr. J. HUGHES, late Plant Foreman at Gunnersbury Park, Acton, as Gardener to H. F. DE PARAVICINI, Esq., Heathfield, Bracknell, Berks.—Mr. G. KNIGHT, late Foreman at Crakemarsh Hall, Uttoxeter, as Head Gardener to Captain ARCHDALE, Underdown, Ledbury, Herefordshire.—Mr. R. GRAY, Gardener to the late Mrs. LAMBTON, Juniper Hill, Dorking, as Gardener to R. BARCLAY Esq., Bury Hill, Dorking, Surrey.

FRUIT GROWING IN KENT.

THE English have always had the name of being little fruit eaters—an estimate that is no doubt correct taken in a comparative sense, so far as applies to the raw article, for if we compare the little consumed in this country in an uncooked state with the immense quantities used in Southern Europe, there can be no question that our consumption is much less than that of our Continental neighbours, who regard fruit, in what may be termed its natural state, as an article of food, whereas we in our chilly climate require something more substantial. But however much we are behind as eaters of raw fruit we make up by its use in the way of preserves in one form or other, the increased use of which in recent years has been amazing, as proved by the all but incalculable amount prepared by the numerous preserving companies, or "smashers," as they are familiarly called. Time was when every housewife used to pride herself each season on making a larger stock of jam than her acquaintances, and this was stored and used more in the way of luxuries than for every-day use. Neither is this to be wondered at when we take into account the large proportion of sugar required in their preparation, and remember that this article used to cost nearly three-fourths more than it now does. The high price of butter has also done much to cause the working classes, especially in large towns, to use the large quantities of those indescribable compounds, cheap jams, which they now consume. In this, as in most other things, demand has begotten supply, and the growers of "soft" fruits have not been slow in setting to work in earnest to meet the requirements of the times. Different parts of the country have contributed to meet the demand. Kent, which had the name of being the "garden of England," when not a twentieth part of the fruit now grown in it was produced, has naturally taken the lead so far that those acquainted with the county twelve or fifteen years and who had been absent during the time, could scarcely credit the extent to which the cultivation of Strawberries, Raspberries, Gooseberries, and Currants is now carried, especially in the neighbourhood of Swanley, Orpington, St. Mary Cray, and the surrounding districts, where for many miles the enormous breadth of these fruits to be seen is such as would create wonder as to where a market could be found for the produce. As a matter of course the metropolis that has not only to provide for its four millions of mouths, but also, in the matter of jam, for a vast number besides, stands first, whilst Manchester, Liverpool, Birmingham, Leeds, Edinburgh, Glasgow, and other centres of industry, proportionate to their size, draw largely for their supply from the Kent fruit gardens. Swanley, St. Mary Cray, and Orpington, are the three principal stations where such portion of the fruit as sent by rail is loaded. All through the principal part of the season at these stations sidings filled with those big, high vehicles, covered carriage trucks, and luggage vans, such as accompany each passenger train for passenger's luggage, may be seen waiting to be loaded and sent away daily. The Strawberries are all in 1 peck baskets, with which the vans are filled up from floor to roof so closely that the whole cannot move in the least. The Raspberries are in stout tubs, made like the Strawberry baskets, narrower at the top, so that they can be piled one upon another up to the roofs of the vans. A train is run each afternoon, which picks up the loaded vans at each of the stations in the districts, bringing them up to the respective railway companies, that take them on to the different provincial towns to which their contents are consigned. The utmost expedition is used, the fruit reaching its destination in the night following the day on which it has been gathered, and in the case of the most distant places—Edinburgh and Glasgow—during the day after. The London and North-Western, the Midland, and the Great Northern Companies, each get a portion of this fruit, carrying to the principal northern towns, and it is well to give merit where merit is due, by crediting them with doing the work well and expeditiously. I believe it rarely happens that a single consignment of these "soft" fruits fails to reach those they are sent to at the time they are expected.

Some idea of the extent to which Strawberries alone find a market in the provincial towns may be formed from the fact that 125 tons of this fruit were sent from Swanley station in the week ending July 5, this year; and this is not more than equal to a third of what is sent to London by road from the Swanley district. Of the large numbers of individuals who have gone in for this description of fruit culture, a few of the largest are the brothers, Messrs. W. E. & E. Vinson, who in the height of the season forward to various places as much 14 or 15 tons of Strawberries in a day.

Mr. J. Wood, who has a very large farm adjacent, has delivered over 11½ tons of this fruit in one day, about half of which I understand went to Manchester.

As might be supposed Raspberries, from their exceptionally soft nature, bruising as they do with their own weight even when only a few are put together are mostly sent to London by road.

Mr. Wood is also one of the largest growers of other kinds of fruit, which include Apples, Pears, Plums, Gooseberries, and Currants. In this part of Kent these bush fruits are almost invariably planted amongst Apples, Plums, and Pears.

Mr. Allen is another of the large Swanley growers, and one of the most successful. He has 100 acres, principally Apples, Plums, Gooseberries, and Currants—no Strawberries. As an evidence that, even in this exceptionally bad season for the larger kinds of fruit in this neighbourhood the failure is not general, I may mention that Mr. Allen has one of the best crops he has ever grown of Apples. The following kinds are carrying a good crop:—Abbey Seedling, an early cooking kind; Northern Greening, New Hawthornden, and also the old variety; Winter Quarrenden, and that excellent dessert sort, Cox's Orange Pippin. Of Plums, Lady Lucy, a large, late red kind; Black Diamond, a large fruit like Pond's Seedling, but not so pointed: and Rivers' Seedling Early Purple, are all bearing heavier this year than usual.

The varieties of Strawberries grown are few; none but free, heavy cropping sorts that produce large, handsome fruit that is not soft or easily bruised in carriage will do for market work. Sir J. Paxton and Sir C. Napier are the principal kinds, much more of the former than the latter, with some of the old Elton Pine, to come in latest. Most of the planting is done in autumn, the rest in spring. Thoroughly cleanly cultivation is the rule. Stable litter was largely employed for mulching Strawberries so long as it was plentiful, but since so much sawdust and compressed moss has been used in the London stables the greater portion are mulched with barley straw.

As might be supposed, picking the fruit off the thousands of acres grown in this locality entails an immense amount of labour, and the cost is a serious deduction from the amount it is sold for; 4*d.* to 5*d.* per peck is the price paid for Strawberries, and for miles around the district literally swarms with pickers, for the housing of which outbuildings of all descriptions are in requisition. Some of the largest growers put up long ranges of huts divided into small compartments, they are built of bricks, with corrugated iron sheets for the roofs, in fact something that cannot take fire. But, if the tawny colour of the skins of not a few of this immense army of pickers is any indication as to where they lodge, one would guess that the sky was the only roof they have. Hundreds of families turn out of London, and begin with the Strawberries, then go on with Raspberries, followed by Gooseberries and Currants, after which comes Plums, and then end up with Hops. Good hands can make good wages; a man has been known to gather 28 pecks of Strawberries between dawn and dusk in a day. As soon as the fruit is gathered the runners and part of the leaves are cut away; much of this kind of work is done by the piece by the pickers; the material is then allowed to lie until it is dry, when it and the straw is together cleared off and stacked like hay, being available for use a second season. The horse-hoe is then brought into requisition between the rows, with which and hand-hoeing the whole are kept quite clean through the season; many of the plants are permitted to stand six or seven years, yielding the most in the second, third and fourth seasons.

Fruit is not the only commodity cultivated in this neighbourhood in extraordinary quantities. Veitch's Autumn Cauliflower is now much in favour with the principal pickling firms. I understand one of the Swanley growers of this excellent vegetable contracted with a noted pickling company to deliver 1000 tons last autumn, and was not 20 tons short of the quantity. Breadths of as much as 20 or 30 acres of this Cauliflower may be seen so true, that scarcely a plant can be found differing from the rest.

Manure, the sheet anchor of high cultivation, is used in all but enormous quantities, the London, Chatham and Dover Railway Co. is, I believe, willing to defray the cost of putting in a siding for any one who is prepared to find land for the purpose adjoining their line, and to take enough manure to warrant the expense of the siding; and some of the largest farmers have already availed themselves of the company's offer. To several of the largest of the farms hereabouts as much as 5000 or 6000 tons each of London manure is brought by rail in a year; at Swanley station alone 45,000 tons were delivered last year. Immense dressings are applied to the land and ploughed in, and in addition to this other manures are largely used, for Potatos especially, to which crop the soil in this part of Kent is particularly adapted, yield and quality being alike excellent. One favourite mixture is kainit and superphosphate, two parts each, with a smaller proportion of sulphate of ammonia, all mixed together and drilled in the rows at planting time, thus supplementing the solid manure used. It is said that no wireworm will touch the crop where this mixed manure is used, Potatos coming out so clean and bright in their skins that last year, even with the low prices that ruled, the Potatos so grown fetched 30*s.* per ton more in the London market than where it was not used. Peruvian guano, and the article that bears the name of Fish guano, are used in large quantities, as also wool waste, fur waste, and hoof parings. Frequent changes in the manure used, and plenty of it, with clean cultivation, is the course followed in the district under notice, with the result that it would scarcely be possible to improve upon the crops obtained. Much of the ploughing in this district is done with steam-tackle. I saw on the premises of a Mr. Wood—I believe a brother of the Mr. Wood, the large fruit farmer named—some twenty-four engines with the corresponding tackle, which are let out for hire.

The most is made of the land; the country by-lanes running between farms are very narrow, so much so that two vehicles have difficulty in passing, and almost the whole of the hedge-rows are thickly planted with Damsons, which, in many cases all but meet across the roads. Tallish standards appear to be used: these have their heads cut clean off at some 5 or 6 feet high, bearing nothing but the straight stem which then breaks out two or three erect branches; this heading down is much practised, and is found to greatly increase the fruitfulness.

The British farmer from time immemorial has been the lucky individual that any one who knows a field full of Cabbages from a field full of Potatos has vouchsafed advice to, the advice usually being much on a par with that which was given to a certain old man about his ass. In these latter times, when the incontrovertible fact has become apparent, that farmers cannot live by growing corn that costs as much to produce it as the price it will fetch, they have been told by those at the helm of State affairs that they should grow less corn and more fruit. But how stand the facts in relation to this matter of more fruit? In some of the great northern towns during the last season Kent grown Strawberries were selling for 1*s.* 3*d.* a peck and less; considering what would be left in the shape of profit after the picking, carriage, sale, commission, labour in growing, with rents and rates, were paid, it would be interesting to know what the growers thought about extending the cultivation of fruit. *T. B.*

FRUIT NOTES.

THE CRITTENDEN DAMSON.—I send you herewith a branch of this Damson in fruit, not, however, to be accepted as evidence of its average cropping qualities this season, but rather as showing how it will crop when it can do so. Were all our trees laden as this small branch is (fig. 68) we should be favoured indeed; but so far from that being the case, the crop is a very thin one, though even better than could have been expected, having regard to the bitter weather which prevailed when the trees were in bloom. This particular kind, though about here better known as the Farleigh Prolific, thrives very well in stiff land, but will not do on light soils. I notice that Morello Cherries and this Damson seem to do well together, and I should think that, given a fair amount of shelter from winds, hardly two more profitable kinds of standard fruits could be found. The Damson trees here have been planted some seven years, and in that time have generally made excellent growth. A few years ago, when a south-western tornado almost stripped the trees of their young leaves and bloom, blight followed and crippled them for a couple of seasons, and they were this season fully recovered and

full of bloom when the April frosts nearly destroyed their promise. Probably some good bearing seasons are in store, and the trees will then well repay their original cost, for they have been productive of little outlay since. This Damson, it seems, is not propagated by seeds or by budding, but by means of suckers, the which taken off carefully and trained, soon make standard trees. The wood is hard and tough, and is not easily torn by winds, whilst the habit of growth conduces to strength, as it is dense and compact though needing little thinning. *B. A. D.*

[For the specimen figured we are indebted to Messrs. Bunyard of Maidstone. Other varieties of Damsons were figured in a recent issue. Ed.]



Fig. 68.—The Crittenden Damson. (see p. 372.)

Buds and Fruit.—Few realise how much the autumn of one year has to do with the crop of the next, but to make it plain one has only to point out that, however favourable the spring may be, there can be no fruit without blossom first, and no blossom unless the buds are formed and packed right for the winter. What stops or hinders their formation in many seasons, is the load the trees have to carry, as they cannot bear a heavy burden and do other work at the same time, that is, without assistance or heavy rain, as the swelling and maturing of the fruit taxes their utmost energies, and all they can manage is to feed it till it ripens and they are relieved from the strain. Even without fruit most trees looked sadly distressed till lately, but since the soaking the earth had the revival of the foliage has been something

remarkable, and instead of drooping it now stands out bold and fresh, with the buds at the base of the leaves plumping up in a manner pleasant to see. Apples and Pears are swelling at a prodigious rate and so fast in many places that the skins of the latter are cracking, as are also those of late Plums, which are gaping open and inviting the wasps, that are only too willing to be at them, gorging themselves as is their wont when anything good is before them. To assist the buds autumn thinning or pruning should be carried out, as it is surprising what a good effect it has, especially on Peaches and Nectarines, which require all the sun and light they can have, and to let in these agencies is a very easy matter, as all the shoots not required for bearing may be removed at once, by doing which the foliage will be greatly reduced and the young wood exposed, when it will soon harden and ripen, and the trees be in the best condition for meeting and facing the winter. Pears and Apples should have been done long ago, but if there are any stray shoots they ought to be taken off at once, that the sap instead of going to them may be forced into other parts where wanted. *J. S.*

GRAPES AT SYON.—"Golden Champion is also fruiting finely," *Gardeners' Chronicle*, August 16. I cannot get on with this Grape. I have fine bunches and berries, but the latter split, and do not ripen well. I should be glad to hear how it succeeds elsewhere, as I had almost determined to grow it no longer. *T. C., Bellefield, Trowbridge.*

NORTH AMERICAN VEGETATION.

AT a meeting of the British Association at Montreal a paper was read by Professor Asa Gray, entitled "Remarks on the Characteristic Features of North American Vegetation." He said when the British Association met for the first time on that side of the Atlantic it was not to be wondered at that a corresponding member of the Association for a quarter of a century should be present to read a paper to the naturalists of Section D. He presented certain outlines of the flora of Canada and the United States as distinct from those of England. On the Atlantic coast the first impression made upon a visitor would be the similarity to the flora of England, many of the plants being almost the same. As one proceeds westward and southward the differences become more marked. While an agricultural people displaced the aborigines of New England, the flora of Europe also gradually supplanted the plants of the red man. Many of the common plants of the Old World sprang up in the farms and fields and roadsides as civilisation proceeded. The reason why indigenous plants are invariably supplanted by plants brought from other cultivated lands is that they then were rendered strong by the struggle for existence. The flora of South America is poor, but the deficiency is being supplied by the herbaceous plants of Europe, men and animals being the disseminating influences. At almost every step in America the English botanist meets with well-known plants, which have found their way from the American to the English soil. The Virginia Creeper, the Rhododendron, and other well-known plants in England are of American origin. Turning from similarities to differences, an observing botanist on the Atlantic coast would be struck by the liberal number of trees and shrubs to be seen in this section of the country in comparison with England or Scandinavia. The wealth of this flora is obvious. The most interesting contrast between the eastern section of the American Continent and Europe is the large number of tropical flowers which the heat of the American summer permits to be grown in northern latitudes. There are also in this section many of the arctic plants which remained behind after the glacial period had passed away. The same plants are also to be found in Japan and China, but are wholly wanting it Europe. Europe was at one time much similar to Greenland, which is now undergoing a period of extreme glaciation, fatal to Flora. In Europe also the glacial period had destroyed many types of Flora which had escaped in America. The arctic flora of America is insignificant. A few species are found on the cool shores of Lake Superior, the shores of Labrador, and certain mountain summits in the Appalachian Mountains. Professor Gray further referred to the visit which is to be paid to Philadelphia, and said that the botanists of that city were desirous of carrying off their visitors on a botanical tour throughout New Jersey, the flora of which he described. Between the wooded region of the Atlantic coast and the wooded region of the Pacific coast there is a large tract of woodless land. The prairies are tenanted with a goodly number of plants. The dryer plains probably never grew trees, and are capable of growing nothing but coarse weeds. Then come the Rocky Mountains, which are well wooded on the sides, and possess nearly 200 species of arctic flora along their summits. When one reaches the Sierra Nevada he enters perhaps the noblest coniferous forest in the world. Although the Pacific coast is richer than the Atlantic coast in its Coniferæ, it possesses a much smaller portion of the other trees, such as Oaks, Ashes, and Maples.

HOME CORRESPONDENCE.

Forestry Exhibition.—May I point out that in one of your interesting articles on this Exhibition, at p. 298, in the issue for September 6, the beautiful wood known as Andaman Marble-wood is not furnished by Diospyros quæsita, as there stated, but by D. Kurzii, Hiern. Gamble, in his *Manual of Indian Timbers*, describes the tree as an evergreen, with very thin, smooth grey bark, and handsome wood, streaked with black and grey. It is used for cabinet work, and should be better known as a substitute for the Ceylon Calamander wood, which it much resembles. In the Andamans it is used for handles and sheaths of blades, as well as for furniture. The tree grows in the Andaman Islands and Nicobars. These facts I have pointed out in the new guide to the Kew Museum. Diospyros quesita, Thw., is the true Calamander, or Coromander wood, and is a large tree of Ceylon, now scarce, though the wood is in great demand for ornamental articles and inlaying. *John R. Jackson, Museum, Kew.*

Yeast Fungi and the Ascomycetes.—In the *Gardeners' Chronicle* for Aug. 18, 1883, you published an abstract of Dr. Oscar Brefeld's admirable work on Yeast Fungi, 1883, and in the first paragraph you have pointed out that Brefeld associates the Ascomycetes with yeast-like conidia forming fungi. It would appear that the Rev. M. J. Berkeley was the first person to notice and illustrate these appearances in the Ascomycetes, for in 1860 he illustrated in the *Outlines of British Fungology*, plate 1, Ascosporium (Ascomyces) deformans with "sporidia simulating yeast globules," and under A. bullatum he gives another illustration to show the further growth of the spores in the manner of yeast. Long prior to this Mr. Berkeley had observed and illustrated the same appearances; for the yeast-like growth is shown in the *Introduction to Cryptogamic Botany*, 1857, p. 284, and even in that volume there is a prior reference given to vol. 9 of the *Journal of the Royal Horticultural Society of London*. In 1864 Prof. de Bary published in *Beiträge zur Morphologie und Physiologie der Pilze*, a similar illustration in reference to "Exoascus," a name which, as every reader of the *Gardeners' Chronicle* probably knows, is a mere synonym for Mr. Berkeley's Ascomyces. It is very necessary to fix these references in print as French and German botanists are constantly and vexatiously altering generic names and fixing their own observations as original on to their own newly hatched genera. As synonyms are seldom given and the work of the older observers is systematically ignored, it is often most difficult to trace a fungus with its associated first observations, to its first name and author. *W. G. Smith.*

Clerodendron fœtidum (p. 304).—I should like to supplement your account of this plant by stating that, though it seems to be perfectly hardy (I have had it here for many years), it is not a plant that I should recommend to every one. This year it has flowered grandly, and is very striking, but in ordinary summers it either does not flower at all, or so late as to be unable to perfect its flowers. Where it does not bloom it is an undesirable plant. The foliage is handsome but very offensive, and it spreads by underground stolons to a most troublesome extent. This year has been excellent for flowers that usually flower late. Hibiscus grandiflorus will be out in a week or ten days (it seldom gets its flowers so early, and they perish prematurely), and Paliurus aculeatus is producing plenty of its curious fruit, which I never saw before. *Henry N. Ellacombe, Bitton Vicarage.*

Impatiens Sultani.—I am exceedingly obliged to Mr. Tallack for his admirable and practical reply to my query respecting the seeding of the above-named charming plant. It would have been interesting had he farther alluded to his method of culture, size of pot, and general conditions under which his plants are grown. I mention these points because I have seen in many gardens this Balsam very indifferently done. My own plants are now illustrating practically all that Mr. Tallack has written, and having regard to the fact that they are cramped or starved as it were in 48-sized pots they are now doing wonderfully well, and blooming beautifully in a cool house, and evidently preferring the present low temperature to the exceeding heat of a week or two since. I, too, find the plants to vary in habit, some being more spreading or tall, others fairly compact and even. The latter are to my mind both perfect and most beautiful, and though some 15 inches in height and as much through, yet are so full of bloom as to give more beauty from out of a 48-pot than any plant I have seen at this time of the year. There is such a charm about the erect prominent flowers, in colour rosy-magenta, that I am sure all will like them. It is at this time of the year far more decorative than are the best of double Balsams, and is most easily grown. *A. D.*

Early Peas.—Seeing a note of Mr. Gilbert's in your last issue respecting Mr. Berbery's new Peas, I should be glad to bear testimony to their quality, as I have grown three sorts, viz., Berbery No. 2, Early Kenilworth, and Early Bird for two seasons. Last season, 1883, I planted in March the three sorts above mentioned together with Laxton's Earliest of All, a Pea sent from America called Cleveland First and Earliest, and William I. Cleveland First and Earliest, Laxton's Earliest of All, Early Bird, Early Kenilworth were all ready to gather within a few days, Cleveland being a day or two the first. I gathered 2 lb. of each kind, and had them shelled and weighed and cooked separately, Cleveland furnishing 13½ oz. of Peas, the other sorts having all about 12¾ oz. of Peas. It will be thus seen that the Cleveland Pea was best for quantity and earliness, and when on the table it was mealy and second-rate, so that I did not think it worth growing again. Early Bird, which is a wrinkled Pea, was as fine in flavour and sweet as an average late Pea, about equal to Telephone in flavour, but inferior to Ne Plus Ultra. Next in point of flavour came Early Kenilworth, which is a blue Pea, resembling Kentish Invicta in the seed, and a very heavy cropper, with five to eight Peas in a pod. Earliest of All is rather similar to the last-named Pea, but not so sweet nor such a cropper, but still the best early Pea at present in commerce as far as I have tried. Berbery No. 2 and William I. came in about the same, but No. 2 is far superior to William I., seven to ten Peas in a pod, growing about the same height, the pods literally covering the haulm, and all as true as possible, so unlike the average sample of William I. This season I have grown Berbery Peas again against a new early Pea given to me by Mr. Sander, of St. Albans, which sort is not so early as Early Kenilworth and Early Bird, and growing much more straggling, small Peas and pods, and quite inferior; on the other hand, a late sort, given to me by Mr. Sander, is an excellent sort of the Ne Plus Ultra type, one of the best late Peas I know. The special merit of Berbery's Peas is their fine quality; the Early Bird I believe will soon be generally grown as the sort becomes known, as it is by far the best early Pea I have grown. *J. Pope.*

—— Referring to p. 341, September 13, in which "R. C. E. H." speaks very highly of a perpetual bearer Pea, should it not be Walker's not Watkins'?—as the description fully bears out all that is said of it: "A first-rate variety for a main crop. The Peas are large, and cook a rich dark green colour. It withstands mildew better than any variety I have ever grown." —— *Nutting.*

Ornithogalum gracile.—About the end of last winter certain auction catalogues advertised many lots of Ornithogalum gracile, said to be a hardy novelty, offered in lots of fifty. I bought a lot, and potted some for greenhouse and cold frame, and planted out others. Not one has shown any sign of life. Perhaps some one who has been more fortunate will tell us what they were like. *C. Wolley Dod, Edge Hall, Malpas.*

Veitch's Selected Extra Early Pea.—I was very pleased to read Mr. Perkins' remarks on the above Pea in your paper of last week, and can testify to all he says in its favour, in fact it is the best early Pea I ever saw, and a most prolific bearer; and all who still adhere to the sowing of Peas in November need do so no more, for this Pea was sown here in January and was fit for table in the third week in May, and the garden here is one of the bleakest in the Midlands. If Messrs. Veitch could sell it by the bushel to the farmers, who grow for market, they would be doing the public a good turn, to say nothing of what it would be the means of putting in the farmers' pockets, for a friend of mine in Essex made £15 per

acre this season for early Peas that were very inferior to the above Early Pea. *W. C. L., Fineshade Abbey.*

Lilium auratum.—I send particulars respecting a spike of the above growing in the gardens at Elmstead Grange, Chislehurst, the residence of J. Scott, jun., Esq., the dimensions of which are, I think, rather unusual. The spike is between 9 and 10 feet high. It formed sixty-nine buds, of which number four proved abortive, leaving sixty-five perfect. As I write there are forty fully expanded blooms, five have dropped, and the remaining twenty are on the point of expansion. I may add it is an excellent type of flower. *J. Blackburn, The Gardens, Elmstead Grange, Chislehurst, Kent.*

Æcidium berberidis.—The abnormal individuals of Æcidium berberidis figured in last week's *Gardeners' Chronicle* by Mr. W. G. Smith are by no means unfamiliar to those who study these fungi experimentally. I have seen the same kind of thing before with Æcidium berberidis. The cause is simply that the fungus has been grown in an atmosphere which is free from currents of air, &c. If Mr. Cheyne would place the affected Barberry in the open air for a few days, the elongated peridia would soon become shortened to their normal "out-of-door" length by the combined influence of wind and rain [?]. *Charles B. Plowright.*

Apples at Gloucester.—Judging by what I have seen lately of Apples in the western and midland counties, I do not think there are many full crops of this favourite fruit this season; but some varieties are bearing particularly well, and as this is their rule it would be well to make a note of them. In Messrs. J. C. Wheeler's nursery at Goucester there are over 300 varieties of Apples growing, and on inspecting them the other day I booked the following as bearing the finest crops:—Hawthornden, Golden Noble, Cox's Orange Pippin, Pearson's Plate, Royal Russet, Stirling Castle, Emperor Alexander, Waltham Abbey Seedling, Kerry Pippin, Yellow Ingestre, Fearn's Pippin, Dutch Codlin, Lord Suffield, and Cellini. The trees are small nursery stock, in the finest possible health, and although only two and three years old are bearing from two dozen to five dozen capital fruits. *J. Muir, Margam.*

Hybrid Hedychiums.—I have to-day forwarded to you by rail a box containing specimens of two hybrid Hedychiums, raised by Mr. Lindsay in the Edinburgh Botanic Garden. Both of these were obtained from H. coronarium as the female parent. In the one case the male parent was H. Gardnerianum, in the other it was H. angustifolium. The first of these hybrids, H. coronarium × Gardnerianum, is, I think every one will admit, a great success. With flowers of the size and shape and perfume of H. coronarium, it has the elongated inflorescence of H. Gardnerianum, from which also it manifestly derives the pale yellowish or creamy tint of its flowers. The second hybrid, H. coronarium angustifolium ×, is also very good. Curiously enough, it much more closely resembles its male parent, H. angustifolium, than it does its female parent, H. coronarium. It is, however, sufficiently distinct from H. angustifolium, its flowers being larger, and the inflorescence more compact. The marked potency of H. angustifolium as a pollen parent in this case is of great interest taken in connection with that of our hybrid, H. Gardnerianum × angustifolium, noticed in the *Gardeners' Chronicle* of last October, where the resemblance to the same pollen-parent, H. angustifolium, was so close that Sir J. D. Hooker and yourself could scarcely be persuaded that it was a hybrid at all, although admitting its superiority to any of the ordinary forms of that species. *Alexander Dickson.*

Hull Botanic Gardens.—I send you herewith a photograph of a flower and leaf of Monstera deliciosa, which flowered here last week. The plant, which is grown in a tub in a stove, produced three spathes; the first spadix produced seems likely to develope into the luscious fruit so highly prized in the markets of Central America. It is satisfactory to be able to state, that the enormous debt, no less than £27,000, hanging over these gardens when I came here two years ago, has, thanks to the generous assistance accorded me by many of the townspeople, been totally cleared off, so that the gardens are now the absolute property of the Society—a result which, at one time, the most sanguine scarcely dared to hope for. *Philip MacMahon.*

The World's Exposition, New Orleans, U.S.A.—I have been very succcessful in my endeavours to secure exhibits of plants and fruits for the New Orleans Exhibition, and trust that those who exhibit will not find cause for complaint, as the Board of Managers is determined to spare neither labour nor money to make the horticultural feature of the Exposition a grand success. We now feel assured of a large display, and that our expectation of making the first really International Horticultural Exposition will be more than realised. I hope as many of your horticultural friends as possible will give us their practical support. The American Exchange, 449, Strand, are our European agents, and will give every information possible to exhibitors. *P. J. Berckmans.*

Root Fusion.—Referring to an article in the *Gardeners' Chronicle* of September 6 on root fusion, I would call your attention to a similar freak in an Oak tree or trees growing near the railway station at Leebotwood, Shropshire, a small village near Shrewsbury. It is known as the "Twin Oak." If not already known to you, I think an illustration of it would give even a better example of what you call "root fusion" than the one already shown in the *Gardeners' Chronicle. E. W. G.*

A New Flower-pot.—It may be thought that the inventive faculties of the potter were exhausted when he had produced the familiar flower-pot; indeed, for all useful purposes, this common receptacle for our house plants fulfils every condition but that of keeping out worms. Fig. 69 shows a pot having sides more approaching the upright; in this respect resembling Hyacinth pots; it has also a concave under-side, which is perforated with a middle hole (by the way, quite useless, as all the water will descend to the bottom holes), and several at the bottom, and small channels are made in the edge of the pot at the bottom, so that water will not lodge under it. Its inventor claims for it sundry advantages, viz., that insects cannot enter, which is an over-statement, as any insects having feet can do so, as can also slugs, although worms could not; and as worms are the greater enemies, it is a good thing they are now overreached; few crocks will be wanted, and the pot, while holding more soil, takes up less space than the ordinary pot. Owing to the little difference there is

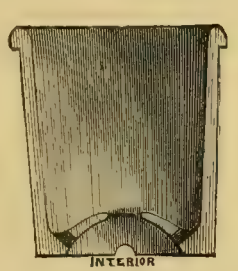


Fig. 69.—VERTICAL SECTION OF POT.

between the size of the pot at the bottom, and its upper part there will be a difficulty in getting tightly rooted plants turned out of the pot, without much jarring and shaking, unless they are allowed to shrink by drought, which latter is not the condition the ball of earth should be in when shifted. By making the pot like an ordinary one as regards the slope of the sides, it has advantages that with many will outweigh the slightly extra price charged for it. The inventor is Mr. James Crute, Langton Lodge, Westhall Road, Honor Oak, S.E.

Reports of Societies.

Dundee Horticultural: *September* 11, 12, *and* 13.—Fruit.—By way of furnishing further details of the fruit shown on this occasion, it may be stated that there were fourteen classes for single bunches of Grapes, and that in the case of the black Grapes especially, they were generally numerously and well shown. In the class for a single bunch of Alnwick Seedling, which was shown in excellent condition throughout, Mr. McKelvie, Broxmouth Park Gardens, was 1st, and Mr. John Robson, Springbank, 2d. Mr. Jas. Jeffrey, gr. to A. Pringle, Esq., Craigcleuch, had the best bunch of Black Hamburgh, staging a very good one; Mr. W. Watson, The Gwynde, being 2d. In the class for Black Alicante, Mr. T. Boyd staged a very fine bunch; Mr. John Laing, Craighall, being 2d. Mr. Geo. Smith, Mylnefield, had the best bunch of Gros Colmar; Mr. James Birsant, Castle Huntley, being 2d. The latter was 1st with an excellent bunch of Lady Downe's; Mr. J. Johnstone, Broughty Ferry, being 2d. Mr. John Brunton, gr. to Sir A. Kinloch, Bart., had the best bunch of any other black Grape, showing a good bunch of Muscat Hamburgh; Mr. D. Morrison being 2d, with an unnamed Grape, looking like West's St. Peter. Mr. John McIntyre, Woodside, Darlington, had the best bunch of Buckland Sweetwater; Mr. John Smith, Blyth House, being 2d. It is worthy of remark that there was not a single exhibit in the classes for two bunches or one bunch of Mrs. Pearson. Mr. Jas. Johnson, Ashbidie, had the best bunch of Muscat of Alexandria; Mr. E. Douglas, Derwent Lodge, being 2d. In the class for any other white Grape, Mr. John Hannah was 1st, with good Golden Hamburgh; Messrs. Haig & Beisant being 2d and 3d with the same. In the class for a bunch of Grapes for weight, Mr. John Hannah was 1st, with a huge bunch of White Syrian; Mr. John Laing being 2d, with what appeared to be White Nice; and Mr. J. McIndoe 3d, with the same, the last having the best finished berries. The best bunch for finest bloom was Alicante, from Mr. T. Boyd, superbly coloured; Mr. Jas. Thompson being 2d, with the same; and Mr. Kirk 3d, with Alnwick Seedling. In the class for the best bunch of finest flavoured, not less than 1 lb. in weight, Mr. Geo. Johnson was 1st, with Duchess of Buccleuch; Mr. A. Crosbie, Buchanan Gardens, 2d, with Muscat of Alexandria; and Mr. Joseph Souza, Touch, 3d, with Duchess of Buccleuch. One exhibitor with a desire to mislead the judges, in order to make his bunches of Duchess of Buccleuch of sufficient weight, is alleged to have actually tied on to it the tip of another bunch in order to make it so. As the exhibitors' names were placed only on the winning exhibits, we are unable to give the offender's name with absolute certainty, but it was said to be that of a leading exhibitor of fruit on this occasion, who it is to be hoped is by this time heartily ashamed of himself.

Owing to the method of staging adopted, which was somewhat confusing, and the practice of placing a high wire fencing all round the fruit as if it were a poultry exhibition, it became difficult to pick up completely the details of all the fruit shown on this occasion, and unfortunately a good deal of it was unnamed. Of Melons there were a large number. Mr. Allison, Sea View, had the best green-flesh, and Mr. A. Pettigrew, gr. to the Marquis of Bute, the 2d best. In this, as in the succeeding class for scarlet-fleshed varieties a large number of fruit were shown. Mr. James Malcolm, Montrose, had the best scarlet-fleshed variety, and Mr. J. Mackenzie, Belmont House, 2d. Mr. Hunter, Lambton Castle Gardens, had the best twelve Figs, staging what appeared to be fine Brown Turkey; Mr. J. Galloway, Minto House, being 2d. Mr. John McLeod, Brantham Park Gardens, Stirling, had the best twelve Peaches; Mr. James Johnson, Ashbidie, being 2d. Mr. George Johnstone had the best twelve Nectarines, having fine Pitmaston Orange; Mr. James Hunter being 2d with the same. Mr. Brown, gr. to R. Clark, Esq., had the best six Nectarines, staging Pitmaston Orange; Mr. John Laing, gr. to General Clark, Rattray, being 2d, with Violette Hâtive. Mr. J. Milne, gr. to James Tweedie, Esq., had the best six Peaches, staging very fine Princess of Wales; Mr. W. Gardiner being 2d, with Stirling Castle. There were as many as twelve exhibitors in the class for twelve Apricots, Mr. J. Brunton being 1st, with Moor Park; and Mr. J. Brown 2d, with the same variety. Mr. W. Gardiner had the best three dishes of Plums; Mr. J. W. Goodacre being 2d. These were shown as dishes of four fruits, which is not enough to make an effective display. There was a class for three varieties of Pears, three of each, and also one for twelve varieties, two of each; the practice of putting them all into one vessel made it difficult to gather the names of the varieties. Baking Apples, as well as those for weight, were very finely shown, Lord Suffield in particular being very fine, and there is no doubt the best examples had been grown under glass. Mr. J. Hunter had the best collection of twelve varieties of dessert Apples, two of each; Mr. J. McIndoe being 2d. Mr. P. W. Fairgrieve had the best collection of eight dishes of hardy fruits grown in the open air, consisting of Pears, Cherries, Gooseberries, Plums, Currants, &c.; 2d, Mr. P. Robertson. Mr. W. Murray was the only exhibitor of four fruit trees growing in pots, having Apples and Pears. There were also classes for Vines grown in pots; the best specimen black came from Mr. J. Machar, gr. to R. Mudie, Esq., Broughty Ferry; and Mr. G. R. Milne, Grange Gardens, Monifieth, had the best specimen white Grape in a pot. There were other classes for hardy fruits, but they contained nothing calling for special mention.

Vegetables.—It has already been stated that the best basket of fifteen kinds of vegetables came from Mr. J. S. Brown, gr. to C. S. H. D. Moray, Esq., Creiff. This was the best among eight, and it included Autumn Giant Cauliflower, Intermediate Carrots, Golden Stone Turnip, Schoolmaster Potato, Brussels Sprouts, Onions, Celery, Peas, &c.—a very fine lot indeed. Mr. D. McBean, gr. to J. Cunningham, Esq., Renfrew, was 2d with an excellent lot, only a little inferior. Mr. P. McArthur, Newport, was 3d. Mr. J. Stewart, St. Fort, had the best basket of ten kinds; Mr. W. Goodall, Errol, being 2d. Then followed prizes for Cucumbers, Cauliflowers, Cabbages, Celery, Beet, Parsnips, Carrots, Leeks, Onions, Peas, &c., in all of which there was an extensive display, and a very keen competition. Onion Rousham Park Hero was very finely shown; it was 1st in one class, where there were forty competitors; the six bulbs weighed 8 lb., and they came from Mr. Wingrove, The Gardens, Rousham Park. In the class for twelve varieties of Potatos, six of each, there was something like twenty collections, Mr. Thos. Johnstone, St. Fort, being 1st with very good examples of Myatt's International, Woodstock Kidney, Bresee's Prolific, Radstock Beauty, Lye's Favourite, Grampian, Reading Russet, Schoolmaster, Blanchard, Porter's Excelsior, and Fiftyfold; 2d, Mr. John Wilson, gr. to J. M. Gordon, Esq., with Prime Minister, Snowflake, Snowdrop, Blanchard, Schoolmaster, Radstock Beauty, Vicar of Laleham, &c.; 3d, Mr. John Stewart, St. Fort. Mr. John Foulis, Scots Craig, Tayport, had the best six dishes, staging excellent examples of Woodstock Kidney, Porter's Excelsior, Schoolmaster, Reading Russet, Grampian, and one other; 2d, Mr. Francis Stewart, with a fine lot also. In all the classes for single dishes of Potatos there was a

remarkably keen competition. Mention must be made of the Leeks, which were marvellously fine even for Scotland.

The group of Rousham Park Hero Onion shown by Mr. Henry Deverill, Banbury, was a very fine one, and attracted much attention, from the great size and symmetry of the bulbs.

PLANTS.—One important error crept into our report in course of transmission by wire. In class 91, Mr. Edward Boyes, Burn Park, was awarded the 1st prize for three greenhouse Heaths, showing very fine examples of Erica retorta major, E. Marnockiana, and E. Jacksoniana, and the former of these was selected for the Veitch Memorial Prize as the best stove or greenhouse plant in flower; Mr. Allison was 2d, showing smaller plants of E. Marnockiana, E. eximia, and E. Turnbulli. The Veitch Memorial Prize for the best Orchid also went to Mr. Boyes, for Odontoglossum grande, but it was scarcely deserving such a distinction.

CONIFERS.—A very fine group of six specimens in tubs was shown by Messrs. Dickson & Turnbull, nurserymen, Perth, and awarded the 1st prize; they were of good size, even, and in excellent character, and consisted of a variegated Sequoia gigantea, Taxus baccata aureus, Thuia dolabrata variegata, Abies Pinsapo glauca, Abies Douglasii Stairii, with a fine silvery sheen; and A. tsuga nana. Messrs. W. P. Laird & Sinclair, Dundee, were 2d, with Retinospora plumosa aurea, Taxus fastigiata aurea, Abies polita, and a pendulous form of Sequoia gigantea, as their leading subjects.

SUMMER-FLOWERING CHRYSANTHEMUMS. — These are a somewhat new feature to schedules, and they were well represented by nicely grown and flowered plants of the named type. Messrs. W. T. Laird & Sinclair were 1st, with six plants; and Messrs. D. & W. Croll, seedsmen, Dundee, were 2d. With four plants, Mr. John Collie, Elm Grove, West Ferry, was 1st; and Mr. James Brown, Crauford Lodge, Dundee, 2d.

MISCELLANEOUS FLOWERING PLANTS.—Under this heading may be grouped Pelargoniums, Fuchsias, Cockscombs, Begonias, Hydrangeas; and while all were fairly good there was nothing of sufficient importance to require special mention. Single specimens of Valotta purpurea were well grown and flowered.

MISCELLANEOUS FOLIAGE PLANTS.—There was a class for three Gleichenias, and here Mr. Hammond added to his former triumphs by taking the leading prize with medium-sized examples of G. microphylla, G. Mendeli, and G. rupestris; Mr. G. R. Milne was 2d, with much smaller specimens. Mr. E. Moir had the best six British Ferns in one class, and Mr. John Donaldson, Newport, in the other. The class for twelve dwarf British Ferns was a very interesting one. Mr. A. W. Anderson, of Edinburgh, was 1st, with a group of pretty specimens; Mr. D. D. Arnot 2d. In the class for six Mr. John Donaldson was 1st, and Mr. Peter Barron 2d. The class for thirty alpines in pots was another full of interest, though but very few indeed were in flower. There were five collections in all, and they were well grown and scrupulously clean and neat. Mr. T. B. Scott, West Ferry, was 1st; and Mr. John McIntyre, Woodside, Darlington, 2d. In the class for fifteen specimens Mr. D. D. Arnot, Kirkcaldy, was 1st; and Mr. John Ford 2d. Of plants for table decoration there were a large number. In the class for six Mr. James Mitchell, Newmains, Aberdeen, was 1st; and Mr. R. Grigor, Sunnybank, 2d. In that for three plants Mr. W. Bell was 1st, and Mr. James D. Ker 2d. They were generally nicely grown and well suited to the purpose.

CUT FLOWERS.—Mr. Campbell's stand of twenty-four blooms of fancy Pansies. to which attention was briefly directed in our last, comprised some of the finest varieties, such as Evelyn Bruce, K. Montgomery, Lord Beaconsfield, John Gold, Mrs. Jamieson, Mrs. McTaggart, Mrs. Burns, and Mrs. Downie. Messrs. James Cocker & Son, Sunny Park Nursery, Aberdeen, had the best collection of twenty-four bunches of bedding Violas, in twelve varieties, and very pretty and bright they were, the most striking being Countess of Kintore, Harlequin, Max Kolb, Stella, Vestal—this last still a good white; Sovereign, Admiration, and Golden Gem. Mr. J. Sutherland, Lenzie, was 2d.

Bunches of hardy flowers were remarkably fine and attractive. Mr. J. Crighton, Inchture, had the best twelve bunches, which included superb examples of Tritoma grandis, Lobelia cardinalis, Gaillardias, white Everlasting Pea, Anemone japonica alba, Hyacinthus candicans, &c.; 2d, Mr. T. H. Miln, Linlathen. In the class for six bunches Miss Pitcaithly was 1st, having very fine bunches of Lilium auratum, Gladiolus hybridus aureo-marginatus, Tropæolum speciosum, Physostegia imbricata, and Anemone japonica alba; 2d, Mr. Matthew Smith, Prestwick. Pentstemons were finely shown in bunches of the finest varieties. Herbaceous Phloxes also made a rare display, the collection shown by Mr. A. Brown, Orchill, being very fine. It is in the North of England and in Scotland that one sees French and African Marigolds shown to the best advantage; here they were good, and so numerous that it was no easy task to make the awards. Asters of all kinds were not a whit less inferior. Mr. T. H. Miln had the best twelve bunches in variety, showing Sweet Peas, Eschscholtzias, Malope grandiflora, Chrysanthemum coronarium and tricolor, Godetia Whitneyi, Papaver umbrosum, and others equally telling; Mr. R. Alexander, Balmossie, the charming blooms of Carnations and Picotees, which were a surprise also for this late period of the year. Mr. G. C. Minty was 1st with twelve blooms of mixed flowers, having William Skirving, Figaro, Distinction, Lord Milton, Squire Meynel, Falconbridge, John Bull, and the following Picotees—Novelty, Mrs. Dick, Pallas, and Minnie.

CERTIFCATES OF MERIT were awarded to Croton Thynei, a very fine looking and robust growing seedling in the way of Baroness Rothschild; a striking plant, grandly coloured, and sufficiently distinct to merit this award: it was exhibited by Messrs. J. & R. Thyne, nurserymen, Glasgow. Also to the following single Dahlias, shown by Messrs. J. Lamont & Sons, nurserymen, Edinburgh: —Sir John Hope, R. J. Hamill, Volunteer, Attraction, and Zulu—the last-named a rich shining maroon-coloured variety in the way of Negress. A special Certificate of Merit was awarded to Scotch, Striped French, and new orange Marigolds, shown by Mr. Cuthbertson, Rothesay. Certificates of Merit were also awarded to the following Fancy Pansies:—P. Lutz and My Lady, selected from a batch of fine seedlings by Messrs. Dobbie & Co., florists, Rothesay. Messrs. Dickson & Co., nurserymen, Edinburgh, exhibited a large-leaved copper-coloured variety of Acer, named Hookerianum, from the Himalayan Mountains, of a distinct and promising character, and respecting which more requires to be known. There were many exhibits not for competition, among them a very fine lot of single Dahlias from Messrs. J. Lamont & Sons; Mr. John Sutherland, nurseryman, Glasgow, had a quantity of cut blooms of very fine show and fancy Pansies; Messrs. James Cocker & Co., Sunny Park Nurseries, Aberdeen, boxes of cut Roses and Picotees; Mr. A. Lister, florist, Rothesay, fancy Pansies, also fine and showy; Messrs. J. Dobbie & Co., Rothesay, show and fancy Pansies, remarkably fine, African and French Marigolds, Roses and Dahlias; Mr. Henry Deverill, seedsman, Banbury, sent four dozen bulbs of Rousham Park Hero Onion, that formed one of the features of the exhibition; Mr. W. Cuthbertson, Trew, Rothesay, had a collection of Apples; Messrs. C. Daly & Son, nurserymen, Coleraine, Ireland, an interesting collection of Irish-grown Apples, Eckinville being very fine; Messrs. T. Frost & Son, nurserymen, Maidstone, had a collection of Apples; Messrs. Ireland & Thomson, nurserymen, Edinburgh; Messrs. Storrie & Murray, nurserymen, and Messrs. W. P. Laird & Sinclair, nurserymen, Dundee, had collections of decorative plants; Messrs. H. Cannell & Son, nurserymen, Swanley, had bunches of double and single Pelargoniums and Begonias; Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill, Kent, also had cut blooms of Begonias; and Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, examples of single Dahlias.

Royal Caledonian Horticultural.—The autumn show of this flourishing Scottish Society took place in the Waverley Market, Edinburgh, on Wednesday and Thursday (17th and 18th inst.). For a considerable number of years past, the "Caledonian" under generous management has been steadily growing in public favour, and each year in consequence its shows have seemed to grow better. Outside of the International shows several have been held under the auspices of the Caledonian in Edinburgh, the exhibition of this week is probably one of the finest they have ever held alike in aspect as to number of entries of flowers and fruit, and the quality of the exhibits. The entries numbered 1326, which was as nearly as possible the same as the number at the autumn show last year; but it is fully double the number ever entered in previous years. The prize money offered amounted to £270. In quality the exhibits were excellent, and the manner in which the various stands were set out was exceedingly tasteful. The Market Hall had indeed a most pleasing appearance. The glowing colours of the autumn flowers interspersed with abundant greenery had a splendid decorative effect, and the general appearance of them was greatly enhanced by the display of a large number of tall Palms placed at the intersections of avenues between the tables.

FRUIT.—The premier place in the catalogue was allotted to the fruit, which in all respects was a creditable display. For the best collection of twelve sorts Mr. McIndoe, gr. to Sir Joseph Pease, was placed 1st. He had two splendid Pines, two very good Melons, and fair bunches of Grapes. Mr. Johnston, Glamis Castle, who got the 2d prize, had a very fine bunch of Muscats, a good bunch of Black Alicantes, and his Nectarines were superb. The 3d honour went to Mr. McIntyre, The Glen, Peebles, whose Grapes were the best things in his collection. Competing for the prizes for the eight sorts of fruit, excluding Pines, there were five entries. There was a keen competition for places. The 1st fell to Mr. J. McConochie, Cameron House, who showed exceedingly good Grapes and Peaches. Mr. McIndoe was 2d, with a nice collection, and he was pressed hard by Mr. P. W. Fairgrieve, gr. to the Dowager Duchess of Athole, whose Grapes and Nectarines were particularly good. For the collection of ten fruits grown out-of-doors, Mr. Fairgrieve outdistanced all the other competitors. His exhibits under this heading were similar to those with which he carried off the prize at the International at Dundee last week. They included dishes of Jefferson & Kirke's Plums, Elruge Nectarines, Early York Peaches, Harley's Early Peach, Shipley's Apricot, Louise Bonne Pears, Jargonelle Pears, Morello Cherries, and Worcester Apples. All these fruits were shown in first-class order, and were deservedly admired. Mr. L. Dow's 2d prize lot included some very fine Cellini Pippin Apples, and Royal George and Noblesse Peaches, while in Mr. John Brunton's 3d prize collection the Nectarines were most conspicuous for their merit. Grapes were a splendid show. For the best twelve bunches, Mr. E. Kirk, Norwood, Alloa, was 1st. He had two very fine bunches of Alicante, a beautiful bunch of Lady Downe's; and his examples of Gros Colmar, Duke of Buccleuch, and Alnwick Seedling were distinguished for their size and bloom. Mr. McIndoe's 2d lot were fair. Mr. Jenkins, Durham, secured the leading place in the competition for eight bunches, which included splendid Alicantes. Mr. McIndoe, who was 2d, had some well coloured Lady Downe's; and in the 3d prize lot, shown by Mr. W. Lees, Hillsborough, Co. Down, the best bunch was of Cooper's Black. There was a good competition for the prizes for the best four bunches, and some splendid Grapes were shown. Mr. George McKinnon, Melville Castle, who was 1st, had a really magnificent example of Gros Colmar, very good Black Hamburghs, Alicantes, and Trebbiano, the last-mentioned being remarkably large in the berry. To Mr. W. Lees fell the prize for the best two bunches—Muscat and Cooper's Black—both good examples of their kind. The prize for two bunches of Muscat of Alexandria went to G. Ramsay, Fordell. There was strong competitions for one bunch of Muscat, Black Hamburgh, Alicante, Alnwick Seedling, Gros Colmar and Lady Downe's, and in these there were many excellent exhibits. Mr. W. Collins, Stoney Hill, Walkerburn, had a grand bunch of Black Alicante, remarkable alike for size of bunch and beauty of bloom. Mr. W. Murray's bunch of Black Hamburgh was also excellent. Of open-air fruit there was a great quantity shown, especially of Apples and Plums. There was a strong muster in the competition for the best six Lord Suffields, which was decided in favour of Mr. John Burnel, Silvertown; as also the best six Stirling Castles, the prize for which went to Mr. W. Murray, Dundee. Dessert Apples and Pears were no less well represented.

VEGETABLES.—There was a double quantity of vegetables shown to what is usually seen at Caledonian shows. Leeks, Cauliflowers, and Potatos were particularly fine, and the market gardeners' collections were most creditable to the exhibitors. A dish of smooth-skinned Tomatos exhibited by David Melville, gr. to the Hon. G. G. Dalrymple Ellison, attracted some notice on account of their size—some of them running up to 1lb. in weight.

To the nurserymen of Edinburgh the Society is always indebted for a large part of the floral display which makes its shows so attractive. On this occasion they were not behind their usual promise. Messrs. Ireland & Thomson were placed 1st, with a valuable and beautiful table of plants, remarkable for the large number in bloom at this season. It included a fine display of Orchids and Nepenthes, several new Anthuria and Dracænas; a very fine plant of Ficus elastica variegata, a Sphærogyne latifolia—the only one in the show—and a Alocasia Thibautiana, with grand large striped leaf, put into commerce only two years ago. Messrs. R. B. Laird & Sons were placed 2d; a feature of their table was a fine display of Lilium, and they also showed some nicely coloured Dracænas, fine examples of the Tree Carnation Miss Joliffe, several autumn-flowering Heaths, the Fern-like stove plant Paullinia thalictrifolia, and a new Fern, Adiantum Victoriæ, resembling farleyense, but with a hardier constitution. Messrs. Cunningham & Fraser had the 3d place; on their stand were a number of well grown Liliums and Chrysanthemums in flower, several plants of Tritonia aurea, with its panicles of golden flowers; and a good Yucca aloifolia var. Messrs. Methven had also an attractive table, conspicuous on which were several pretty Liliums and Pelargoniums, a large double white Camellia plant in flower, and two or three cut blooms of Magnolia grandiflora; they also showed a fine Erica Marnockiana, a finely variegated Curculigo, and specimens of Cyperus with pretty variegation; as also a dish of the splendid seedling Apple, Northern Dumpling, raised at Gordon Castle. Mr. Robertson Munro, who usually has so attractive a table of herbaceous plants in flower, was fain to content himself at this late season with filling up gaps with plants from under glass. He showed, however, some pretty herbaceous Sunflowers; and an interesting exhibit was a pot of the new Primula obconica, which was figured in a recent number of the *Gardeners' Chronicle*.

ROSES.—Late in the season as it was there was capital show of Roses, though local growers had felt the effects on their blooms of the last week's thick foggy weather. Hugh Dickson, the famous Irish grower, was again 1st for the best thirty-six; but in the next competition he was beat, for the first time perhaps, by a Scottish grower—Messrs. Smith & Sons, Stranraer—who succeeded in landing the 1st prize for the best eighteen. Messrs. James Cocker & Sons, Aberdeen, were 2d for the best thirtysix, and they had otherwise a most excellent selection of trusses of Roses.

DAHLIAS AND GLADIOLI.—Most attractive displays of single and double Dahlias, but especially of the former, and of Gladioli, were to be seen. Of single Dahlias Messrs. J. Lamont & Sons, Musselburgh, had by far the best show, their stand being ablaze with colour, and greatly admired. This firm showed forty-eight bunches, effectively made up in the form of flat bouquets, of different varieties of this increasingly popular flower, all save five being their own seedlings. The examples of the old Paragon variety were excellent, so were the newer Volunteer, White Queen, Devotion, and many more. Mr. A. E. Campbell, Gourock, came, as usual, to the front with Gladioli, the spikes being large, and the flowers of a lovely colour. He had no difficulty in repeating his Crystal Palace and International triumphs. Among the best spikes were those of Tamerlane, Mabel, and Crepuscule. Mr. James Gray, Newfield, and Mr. W. Kilgour, Kincardine, also deserve praise for the beauty and size of their Gladioli exhibits; the former had some magnificent spikes of the Baroness Burdett Coutts and Horace Vernet, and the latter of Hesperide, Gigantea, and Camille. For double

Dahlias, plain and fancy, Messrs. Cocker, Aberdeen, deservedly received the 1st prizes, their blooms being large and particularly shapely; one of the newest ticketed was Mrs. Gladstone, a very fine light pink. Some of the 1st prize lots in the gardeners' classes for cut flowers were also exceedingly pretty, though they wanted the size of the nurserymen's exhibits.

For the best table of plants, open to gardeners, Mr. Robert Grossart had a walk over, and the same exhibitor had 1st prizes in two of the Orchid classes. His 1st prize four included Vanda suavis, Oncidium Rogersii, Cœlogyne Massangeana, and Saccolabium Blumei.

Stove and Greenhouse Plants.—John Paterson, Millbank, was, as formerly, very successful in the competition for six stove or greenhouse plants in flower. His prize collection included four Cape Heaths, and examples of Witsenia corymbosa and Statice profusa. He was also 1st for four Cape Heaths with E. obbata, E. Irbyana, and E. Marnockiana. Mr. Scot, Carbery Tower, got the leading honours for ornamental foliage plants, his collections of Crotons and Dracænas being particularly good.

There was a large collection of Ferns shown, many familiar plants, which must now nearly know their own way to the show, being staged. Some fine Liliums were exhibited for competition; Fuchsias were large and well flowered, and Pelargoniums were of average merit. The bouquets were for the most part artistically got up, and there was a good display of Hollyhocks.

A most interesting table was that sent by Mr. Lindsay, the Curator at the Royal Botanic Gardens, Edinburgh. It included many rare and curious plants, including a larg and beautiful example of the Lattice-leaf plant of Madagascar and thirteen different sorts of Pitcher plants. Among the Nepenthes was N. Mastersiana, the pitchers of which grow to a length of 16 inches. There were also exhibited specimens of Orthosiphon stamineus, a labiate plant, having lilac flowers with peculiar long stamens, figured in your columns; a scarce Fern, Davallia fijiensis major, resembling Colensoi; a Mexican Palm, Astrocaryum, with curiously diversified foliage; Stevensonia grandifolia; and a Cycadaceous plant from the Cape, also rare; Encephalartos horrida, with a stem like a Pine-apple, surmounted by anumbel of glaucous thorny leaves.

Bees.—For the first time in the history of the Society there was a competition for bees and honey, which attracted considerable attention on the part of the ladies and children. The Society was, as usual, greatly indebted to the Secretary, Mr. Young; the Treasurer, Mr. Neil Fraser; and to Mr. Angus McLeod, the Superintendent of the City Gardens, for the excellence of the arrangements made for the show, which was largely patronised.

The Neil Prize.—In the afternoon of Wednesday an interesting event occurred. This was the presentation to the Secretary of the Council of the Society of the Neil Prize, which is voted every three years to a gentleman who has conspicuously forwarded the cause of horticulture and who in the opinion of the Council is deserving of having his services recognised. The prize had its origin in a bequest of £500 which was made to the Society by the late Dr. Neil, and interest on that sum—about £40—is awarded at the end of every triennial period, along with a piece of silver plate. Some distinguished botanists and horticulturists have held this prize, including the late Mr. James MacNab, the late Mr. Sadler, both of the Botanic Gardens; both the Thomsons, the well-known Vine growers; Mr. Fowles, of Fordel; Mr. Webster, Gordon Castle; Mr. Isaac Henry. Mr. Young, the Secretary of the Caledonian Horticultural Society, who has now been honoured, filled with great acceptance to the members and benefit to the Society the office of Secretary for the last twenty-five years. During all that time he has sought with assiduity to promote the advancement of horticulture. Mr. Young is also known as a successful rearer of several varieties of plants, notably zonal Pelargoniums, Carnations, and Auriculas; and for his skill as a culturist he has received at one time or another fifteen First-class Certificates. Among the members of the Society the award will be a popular one. *Communicated.*

East Samford Horticultural: *Sept.* 11.—This Society embraces the whole of the eastern part of the Samford Hundred, consisting of the parishes of Chelmondiston, Shotley, Erwarton, Harkstead, Copdock, Tattingstone, Hoolbrook, Wherstead, Freston, and Woolverstone, and is a cottagers' affair, pure and simple, originated and instituted by Lord John Hervey and his cousin, the Rector of Shotley, both of whom take great interest in country pursuits and the rural folk, are assiduous in promoting their welfare and making the show a success, which it is, as the exhibits each year are larger and more people flock to the *fête*, and make quite a gala day each autumn when it comes off. The plan of proceeding is to hold it in a different parish each year, which is done through the kindness of one or other of the Vice-Presidents offering the use of their grounds, and sending an invitation, which the committee are only too glad to accept, and they were indebted on this occasion to C. K. Kortright, Esq., the present occupier of Wherstead, who threw open his beautiful park and gardens, in the former of which the exhibition was held, and as the weather was all that could be wished, and the situation a picturesque one, owing to its close proximity to the lovely Orwell, there was every inducement to draw people out. That these meetings do much good among those who come together on such occasions there cannot, I think, be a doubt, as the competition promotes healthy rivalry, shows what can be done in the cultivation of flowers and vegetables, and, what is of even more importance, gives to those tillers of the soil, and all who have a garden, a keener interest in their homes, educates, and makes better men, husbands and fathers of them, and more useful and staid members of society than they would otherwise be. This I know from lengthened intercourse with and observation of them, and it would be well for the country if each humble citizen had a plot to cultivate, and shows, like the one alluded to, were multiplied a thousandfold, as they are sadly too few, and the artisan and cottier in many places have nothing to rub the rust off them, or improve their standing and self-respect, and it is not to be wondered at that they resort to the ale-house for change and companionship.

Leaving this, however, and returning to the East Samford Society, the schedule not only has a long list of various sums offered for flowers, fruit, and vegetables, but there are many prizes offered for needlework done by women of sixteen years and upwards, and the same in another class for children, which making of garments by hand, mending, &c., ought to be encouraged, or in these days of machines the useful art may die out. The collections of vegetables were so good that any professional gardener might have been proud of them, but the judges in their wisdom disqualified or placed the two best lots equal, because, as one of them contended, the exhibitors had only eleven sorts instead of twelve, as they had red round and white kidney Potatos. Think of this all ye who compete at shows, and mind you don't have black and white Grapes, or red and white Cherries or Currants, in making up a certain number of dishes, or you stand a chance of losing the prize you may win; and the same if you have French and Runner Beans, Leeks and Onions, or perhaps, for that matter, Cauliflower and Cabbage. Such are the vagaries of judges and judging, and it comes fresh to me now that last year I competed in a class where a prize was offered for a collection of eight sorts, to be chosen from twelve named; I was shut out, although all of mine were far superior to any there, because I had not Potatos, and the 2d prize went to a man who had got the whole twelve. In adjudicating, schedules should be strictly followed, and if they are faulty it is for the committee, or those who are connected with the show, and responsible for drawing them up, to alter them, and not for judges appointed for the day to have crotchets of their own to cause disappointment and dissatisfaction to exhibitors, whose business it is to follow the rules and the list, and abide by them; but I am digressing again from my notice. The Potatos shown were of many kinds and remarkably fine and clear in the skin, one dish of Vicar of Laleham being specially noteworthy, and the Early Rose, Snowflake, and Covent Garden Perfection were almost equally good.

Although the dry weather we had for so long some time back suited the "noble tuber," it was too hot for Cauliflowers, which the cottagers in this district generally grow so well, priding themselves on their Veitch's Giant, which, by dosing with liquid manure, they get to a great size, one being large enough for a numerous family. Pumpkins and Vegetable Marrows are also specialities with them, and these they let ripen, and when cut hang them up for pies in winter. Both were largely represented at the show, and it was gratifying to see so many Apples, Pears, Plums, and Damsons, and to know that cottagers have trees, which it is to be hoped all landlords will have planted for their poor tenants, as few can afford to buy and leave them behind for those who come after, should they have to change their abode. *J. S.*

THE FORESTRY EXHIBITION.

Awards at the International Forestry Exhibition.—The only Gold Medal at the disposal of the jurors at the Forestry Exhibition has been awarded to a collection of plants whose utility in English forest culture is more than doubtful. This seems to me, considering the object of the Exhibition and the backward state of forestry in this country, a decided "miscarriage" of common sense, and I am not surprised to learn that the other prize winners in this department have, under the circumstances, protested against the award, while some of them have declined to accept the medals which have been awarded to them.

It is unfortunate that Messrs. Veitch, the recipients oft he Gold Medal, were not among the jurors [How could they be?] since they would probably have pointed out, what appears to have been most strangely overlooked, that the main object of a forestry exhibition is the encouragement of forestry. Messrs. Veitch's fine Japanese plants comprise a most interesting collection, and among them are undoubtedly several shrubs which exceed in value, as articles of merchandise, any other specimens in the Exhibition. The central plant of their collection is a fine example of Sciadopitys verticillata, 12 feet high, and adjoining it is a big shrub of Quercus cuspidata. These two plants would perhaps cost more to purchase than any other half-dozen specimens in the grounds of the Forestry Exhibition, and around them are good examples of other introductions from Japan, such as that handsome evergreen Olea ilicifolia, some of the best and most graceful varieties of Retinosporas, Pinus parviflora, Ilex aquifolium pendulum, Abies polita, and A. Douglasii glauca, with several varieties of Thuiopsis. It is a first-rate collection of the kind, worthy of the exhibitors, especially as Chelsea is rather a "far cry" from Edinburgh; but other exhibitors, such as the Lawson Seed and Nursery Company, or Messrs. Stuart & Mein of the Kelso Nurseries, have decorated these grounds with much larger collections, though the individual specimens may not be so valuable. Several firms have brought ten times as many plants as the Gold Medalists. I had thought that ornament was not the test of merit here; but if it be so according to the view of the jurors, then the exhibitors I allude to have sent the means of ornamenting ten times the space of ground which could be covered by Messrs. Veitch's Japanese plants—and with specimens quite as beautiful as they are.

If ornament be made the test of merit, why should not the prize be awarded to the collection of conifers sent by Messrs. James Dickson & Sons of Chester? Their large Taxus baccata Dovastoni has attained such size and beauty as none of Messrs. Veitch's plants have yet reached. The same firm exhibit a beautiful Aralia Sieboldi, which, with their Abies nobilis, Thuiopsis dolabrata, Abies Parryana, and a score of other specimens, all in large tubs, many of them 20 feet high, reflect great credit on the exhibitors. That the jurors have committed a great mistake can hardly be disputed. It comes to this. The Gold Medal of the Forestry Exhibition has been awarded for the merit of exhibiting certain rare plants—the rest of the collection could have been obtained at almost all ordinary nurseries. The object of the Exhibition has been entirely ignored. It is true that exhibitors at shows of this kind must needs consider their commercial interests. These exhibitions are supported by the shillings and half-crowns of the public, exhibitors are bound therefore to do something for the gratification of public taste, and this has been sufficiently done by several firms who have still been careful to give due prominence to the main object of promoting a knowledge and taste for forestry. Many pretty specimens to please the public eye are conspicuous in the extensive spaces of ground planted here by Messrs. Little & Ballantyne of Carlisle. The Lawson Seed and Nursery Company have sent from their adjoining gardens a still larger number of specimens of the ornamental class. But these firms, especially the former, have entirely realised my own idea of the object and purpose of the Forestry Exhibition, by sending a large representative collection of those particular plants—the Oak, Ash, Sycamore, the conifers and the rest—which are usually planted, and should be much more widely planted, in this country for profit as woods and underwoods. I can only hope that the awards are not irrevocable. *E. H.*

FRUIT TREES IN TURKESTAN.

M. Capus, in the last number of the *Annales des Sciences Naturelles*, gives a list of the cultivated species found in Western Thiân-Shân, lat 38°—44° N, at 58°—72° east of Paris.

The Almond (Amygdalus communis) grows wild in the mountains of Turkestan, and is met with both in the sweet and bitter varieties. A third variety is mentioned, in which the stone is smooth. The wild fruits do not differ from the cultivated ones.

The Pistachia (Pistacia vera).

The Apricot (Prunus Armeniaca). The natives dry the fruits in the sun.

The Bird Cherry (Prunus avium), and the common Cherry (Prunus Cerasus), are both cultivated in the plains, but were not met with in a wild state in the mountains. P. chamæcerasus, on the contrary, is common in Kohistan, and yields edible fruits.

The Plum (Prunus domestica) is cultivated at Bokkara and Samarcand. The fruits are globose, and largely used in a dry state.

Prunus divaricata.—This tree, which attains a height of 12—15 feet, is frequent in the gorges and ravines of the mountains of Talass to a height of 4000 feet. There are three varieties, one with yellow fruit, one with red, and a third with black fruits. The tree is very productive, and the fruits, as to size, taste, and form, are exactly like those of the Mirabelle Plum. The natives collect and dry the fruits, but do not cultivate the tree.

The Peach (Amygdalus persica) is grown on the plains, but has never been found wild in the mountains of Turkestan.

The Pear (Pyrus communis) is cultivated in the

plains, but does not yield good fruit. It is found wild in the gorges of Talass and Tchotkal. The wild fruits are small, hard, and astringent. The variety tomentosa of Koch was found at an altitude of 3000 metres.

The Apple (Pyrus malus) grows abundantly in a wild state in certain parts of Turkestan. Capus mentions having found two varieties quite distinct one from the other as to the fruit. The one, which is the P. malus β tomentosa of Koch, bears globular Apples of reddish-yellow colour, striped with red, with a short fruit-stalk, not deeply set. The flesh is firm, reddish, and acid. The diameter is 4 centimetres. The leaf is long, acuminate, slightly downy. It resembles the "Pomme d'Api." The other variety produces yellow, oval fruit, 5 centimetres and upwards in diameter. Flesh white, mealy, gritty. The stalk and the eye are both deeply set. This wild Apple resembles the St. John's Apple. The flesh is excellent, very slightly astringent or acid. These two varieties were found at elevations of 3000—4000 feet, and both ripen at the end of August. The inhabitants of the plains cultivate a number of varieties, two of which are of interest with reference to the origin of the cultivated Apples. One is an elongated yellow sweet Apple, resembling the second wild variety just mentioned; and the other is a red Apple, speckled with white, and covered with a whitish down, with the stalk not deeply set, with rose-coloured flesh and a vapid taste.

The Walnut (Juglans regia) is found abundantly in the ravines of the Tschotkab and Tchirtchik Mountains up to an elevation of 5000 feet, although the temperature descends in winter below —20° C. = 4° F. The tree is cultivated in the plains for its beauty as well as for its fruits, which supply a considerable quantity of oil.

The Jujube (Zizyphus vulgaris) grows on the mountains as high up as 3000 feet.

The Vine (Vitis vinifera) grows wild in the valleys of Pskeme and Ablatoune. M. Capus mentions having seen bunches of small rounded berries ripe in September. The dried Grape or Raisin is called by the natives "Mais." In the plains the Vine is cultivated in gardens, and attains a large size. To protect it in winter from the intense frosts the stem is bent down to the ground in late autumn, and covered with a layer of dung or straw. As many as sixteen varieties are grown at Tashkent and Bokkara, but the quality is inferior owing to the thickness of the skin and the deficiency of perfume. The flesh is hard and very sweet. One variety is devoid of seed. Vitis argirophylla is also wild in the valley of Fan-darja.

The black Currant (Ribes nigrum) is wild in the valleys of Tchotkal and Ablatoune (Tchirtchik Mountains). Plants growing on a dry soil attain only a moderate height, the leaf and fruit remaining small; but those which grow by the water side attain a height of 1.50—2 metres, and bear broad leaves and large fruit. It is nowhere cultivated, although the inhabitants collect the fruits of the wild plants.

Rye (Secale cereale).—Capus has not seen this wild in Turkestan, but Regel, on the faith of specimens collected by Russian collectors, mentions it as cultivated and half wild in Western Turkestan. The variety β anatolicum is considered by Regel to be the source of the cultivated plant.

Oats (Avena sativa) have not been met with in a wild state in Turkestan.

Wheat (Triticum vulgare) is cultivated, but not known in the wild state. The varieties grown differ according as the land is artificially irrigated or not.

Barley (Hordeum vulgare) is largely grown, but not found in a wild state.

Flax (Linum usitatissimum) is largely grown, for the sake of the oil derived from the seed, but not at all for the sake of the fibre. It was not seen in a wild state.

Lucerne (Medicago sativa) is generally cultivated as a forage plant, but is only a doubtful native.

Clover (Trifolium pratense) is a common weed, nowhere cultivated in Turkestan.

M. Capus gives the native names applied to these plants, which may prove of value to students of the history of plants, but which we need not reproduce here. He also gives a long list of plants in common cultivation, and alludes in terms of commendation to the useful work done by the Russians in introducing European vegetables, &c. The botanic garden of Samarcand is mentioned with special praise for its efforts in this direction.

Lastly, M. Capus expresses the opinion that the mountain district between the sources of the Oxus and those of the Indus will probably furnish more certain indications as to the origin of certain of our cultivated plants.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 17, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
Sept.	In.	In.	°	°	°	°	°	°			In.
11	30.15	+0.26	74.0	52.5	21.5	61.6	+ 3.8	54	3	E.	0.00
12	30.11	+0.22	75.0	54.0	21.0	62.8	+ 5.2	54	0	E.; E.N.E.	0.00
13	30.01	+0.13	75.0	54.5	20.5	63.9	+ 6.5	55	0	E.	0.00
14	29.89	+0.01	69.5	56.3	13.2	62.3	+ 5.1	57	8	E.; E.N.E.	0.00
15	29.85	—0.02	76.5	56.0	20.5	65.1	+ 8.0	59	3	E.; E.S.E.	0.04
16	29.99	+0.12	78.5	61.0	17.5	68.0	+11.1	60.5		S.S.E.	0.00
17	30.10	+0.25	83.0	59.5	23.5	70.1	+13.5	60	6	E.; E.N.E.	0.00
Mean	30.01	+0.14	75.9	56.2	19.7	64.8	+ 7.6	57	6	E.	0.04

Sept. 11.—Dense fog from early morning till 8.45 A.M. Very fine day and night.
— 12.—Very fine day and night.
— 13.—Very fine day and night.
— 14.—Dull day. Fine clear night.
— 15.—Very fine day and night. Slight rainfall at 10.45 P.M.
— 16.—Very fine day and night.
— 17.—Fine day and night. Dark clouds at times during the day.

LONDON: *Atmospheric Pressure.*—During the week ending September 13, the reading of the barometer at the level of the sea increased from 29.45 inches at the beginning of the week to 30.22 inches by 9 A.M. on the 9th, decreased to 30.21 inches by 3 P.M. on the same day, increased to 30.36 inches by 9 A.M. on the 11th, decreased to 30.27 inches by 3 P.M. on the 12th, increased to 30.28 inches by midnight on the same day, and was 30.14 inches by the end of the week.

The mean reading of the barometer for the week was 30.18 inches, being 0.51 inch higher than last week, and 0.10 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 75° on the 12th and 13th, the highest on the 7th and 8th was 62°.5. The mean of the seven high day temperatures was 69°.7.

The lowest temperature was 51°, on the 8th; on the 9th the lowest temperature was 57°. The mean of the seven low night temperatures was 53°.9.

The greatest range of temperature in one day was 21°.5, on the 11th; the smallest was 8°.5, on the 7th. The mean of the seven daily ranges was 15°.8.

The mean temperatures were—on the 7th, 56°.9; on the 8th, 57°; on the 9th, 62°.6; on the 10th, 60°.7; on the 11th, 61°.6; on the 12th, 62°.8, and on the 13th, 63°.9; of these the first two were below their averages by 1°.5 and 1°.3 respectively, and the rest were above by 4°.5, 2°.7, 3°.8, 5°.2, and 6°.5 respectively.

The mean temperature for the week was 60°.8, being 3° higher than last week, and 3° above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 139°, on the 13th. The mean of the seven daily readings was 114°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 41°, on the 8th. The mean of the seven readings was 43°.5.

Rain.—Rain fell on the 7th and 8th to the amount of 0.11 inch.

ENGLAND: *Temperature.*—During the week ending September 13, the highest temperatures were 77°, at Truro, 75° at Blackheath, 73° at Bristol; the highest at Sunderland 62°, at Bradford 67°.4, at Preston 68°. The general mean was 70°.8.

The lowest temperatures were 40° at Sunderland, 42.°2 at Bradford, 46°.7 at Wolverhampton; the lowest at Plymouth 52°.4, at Preston 52°, at Liverpool 51°.7. The general mean was 48°.7.

The greatest ranges were 31° at Truro, 25°.2 at Bradford, 24° at Blackheath and Nottingham; the smallest ranges were 16° at Preston, 18°.6 at Plymouth, 19° at Leeds. The general mean was 22°.1.

The mean of the seven high day temperatures was highest at Truro, 72°.4, at Blackheath 69°.7, at Brighton 68°.4; and was lowest at Sunderland, 58°.4, at Bradford 63°.3, at Wolverhampton 64°.1. The general mean was 66°.1.

The mean of the seven low night temperatures was highest at Liverpool, 55°, at Brighton and Bristol 54°.4; and was lowest at Wolverhampton and Sunderland, 50°.6, at Hull 51°.4. The general mean was 52°.9.

The mean daily range was greatest at Truro 20°.3, at Blackheath 15°.8, at Hull 15°.2,; and was least at Sunderland, 7°.8, at Preston 10°.3, at Bradford 11°.3. The general mean was 13°.2.

The mean temperature was highest at Truro, 60°.9, at Blackheath 60°.8, at Brighton 60°; and was lowest at Sunderland, 53°.1, at Wolverhampton, 55°9, at Bradford 56°.3. The general mean was 58°.2.

Rain.—The largest falls were 0.93 inch at Preston, 0.76 inch at Bradford, 0.66 inch at Bolton; the smallest falls were 0.01 inch at Wolverhampton, 0°03 inch at Brighton. The general mean fall was 0.37 inch. No rain fell at Truro during the week.

SCOTLAND: *Temperature.*—During the week ending September 13 the highest temperature was 70°.6, at Paisley, at Edinburgh and Leith 66°. The general mean was 68°.

The lowest temperature in the week was 41°.9 at Aberdeen; at Leith and Paisley the lowest temperature was 48°.3. The general mean was 46°.2.

The mean temperature was highest at Paisley, 60°.5, and lowest at Dundee and Leith, 56°.2. The general mean was 57°.7.

Rain.—The largest fall was 1 inch, at Leith, and the smallest fall was 0.04 inch, at Edinburgh. The general mean fall was 0.41 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

ALTHÆA FRUTEX (HIBISCUS SYRIACUS).—Why do the flowers of these plants fall off without opening? *G.*

[This is to be attributed to too much or too little moisture at a particular stage of growth. The structural reason is dependent on the way in which the flowers are formed. The flowers, although apparently single, are really produced in clusters, the topmost or most central one first. This is the one that comes to perfection; the others, formed subsequently, usually wither and fall off. If the first flower were pinched off at any early stage the stores of nourishment made use of by it would be diverted into the other flowers, which would then probably remain on the shrub and expand, but would not be so large as the solitary bloom. ED.]

Answers to Correspondents.

BOOKS: *G. B. R. The Propagation of Cultivated Plants*, by F. W. Burbidge.

COIN OF THE EMPEROR CONSTANTINE: *M. C.* We are not able to answer your question, which is not one for a horticultural journal.

CULINARY APPLES AND OTHER FRUIT FOR AN EAST WALL: *H. M. E. Apples*—Annie Elizabeth, Balchin's Pearmain, Baxter's Pearmain, Beauty of Kent, Bedfordshire Foundling, Bess Pool, Blenheim Pippin, Reinette du Canada, Borsdörfer, Calville Malingre. *Pears*—Catillac and Verulam. *Cherries*—Werder's Early Black, Tartarian, Governor Wood, Bigarreau de Metzel, May Duke, Duchesse de Palluau, Black Eagle, Florence, Büttner's Yellow, and Belle Agathe.

FERNS: *T. Smith.* The four distinct forms of Pteris aquilina appear to be worthy of cultivation, being rather pretty additions (especially the tasselled sport) to hardy varieties.

FUNGUS: *John Tarbay.* It is a magnificent specimen of Lycoperdon giganteum, measuring 5½ feet in circumference. Had you cut it earlier, when the flesh would have been snow-white throughout, and had it fried in thin slices, you would have found the flavour delicious; as it was, it had partly decomposed, and was no longer safe eating. When in good condition it is as safe as it is deliciate in taste.

HOT-WATER HEATING, &C.: *Stucco.* For heating get Hood's *Practical Treatise on Warming Buildings*, of Simpkin, Marshall & Co., London. We do not know of any small work on painting, or of any general list of publishing firms of England, although these could be obtained from the large town Directories. The letter *o* is short in Gladiolus, the emphasis being on *i*, at least in English; in Latin both *i* and *o* are short.

MALFORMED ABUTILON: *Miss Freeman.* This is a common occurrence; the corolla was doubled, as were also parts of the flower.

MUSHROOMS DISEASED: *R. F. H.* The Mushrooms sent are invaded by microscopic fungi, both internally and externally. The small fungi do not belong to the species recently described in the *Gardeners' Chronicle*—they may be adverted to in this paper at greater length shortly. One plant is a Fusisporium, with unusually small colourless spores. It would appear to be a fact—corroborated by your letter—that these minute fungi often cause Mushrooms to be very unwholesome, or, indeed, poisonous. The subject has never been worked up; it is, however, one of many well worthy of careful investigation. If there are many diseased examples, the better plan would be to break up the bed. *W. G. S.*

NAMES OF PLANTS: *Patrick Davidson.* Adiantum cuneatum, A. Lawsonianum. — *A. D. Webster.* Ne-

phrodium Molle corymbiferum. *W. Allan.* Dictyogramma japonica. — *Geo. Trinder, Winkfield.* 1, Lastrea tenericaulis; 2, Polystichum capense; 3, Stenochlæna tenuifolia; 4, Adiantum cardiochlæna; 5, Thamnopteris australasica; 6, Nephrolepis pectinata; 7, Adiantum concinnum, large variety. — *T. Borer.* Clerodendron fœtidum. — *A. E. B., Notts.* Evergreen Oak; send better samples.—*Jas. Backhouse & Son.* It is a seedling variety of Ilex, the seedlings of which species differ a great deal. — *P. I.* 1, Matricaria inodora; 2, Silene Armeria; 3, an Epilobium we do not recognise; 4, Veronica Buxbaumii; 5, Hypericum humifusum; 6, Chenopodium polyspermum. — *A. D. W.* 1, Pinus halepensis; 2, the climber is a Smilax, it is impossible to say which one; 3, Cratægus coccinea. — *J. W.* Quercus Phellos. — *L. P. & C.* Boussingaultia baselloides (Chenopodiaceæ. Tropical America).—*H. M.* Sedum spurium. —*C. W.* Spiranthes autumnalis. — *W. J. C.* Your grass appears to be a poor specimen of Erianthus saccharoides.—*F. H. Damman.* Alocasia Jenningsii. —*Capt. King.* Pyrus crenata (see fig. in *Gardeners' Chronicle*, Jan. 3, 1874, p. 17).

NEW PEA: *W. G. Holmes.* Apparently Abundance is a good cropping kind: the sample was too old for us to judge as to flavour or colour when fit for the table.

PANSIES: *W. Kerr.* The flowers have substance, regularity, and some are of great beauty, such as Jessie Bogie; a sulphur-yellow without name; a claret and purple; and a nice flat circular bloom, gold and claret, with a regular zone of gold round the under petal.

ROSES: *J. H. B.* Flowers fallen all to pieces; in any case we do not undertake to name Roses.

SEEDLING APPLE: *C. F. Cattell.* A handsome autumn fruit, with a small core, tender flesh, and an agreeable flavour; worthy of being perpetuated.

SINGLE DAHLIAS: *V. W.* Closely resembles, if not identical with, Lucy Ireland.

TOMATO AND CUCUMBER: *G. B.* There are various things you might grow during the winter months that would be of value, viz., French Beans, Asparagus, Seakale, Rhubarb—even Rape, Mustard, Cress, and Mint; Tea and other Roses, Stephanotis floribundus, Lily of the Valley from crowns, Dutch bulbs, Spiræa japonica, and Maidenhair Fern for cutting. For a book that is not very scientific in its language, but is at the same time accurate, get Alfred Simpson's *Artificial Manures*, published by W. Ridgway, 169, Piccadilly.

TREATISE ON THE CARNATION: *Dianthus caryophyllus.* Get Douglas on *Florists' Flowers.*

CATALOGUES RECEIVED.

W. BULL, Chelsea—Tuberous-rooted Plants.
E. G. HENDERSON, Maida Vale, London—Bulbs.
DANIELS BROTHERS, Norwich—Bulbs.
R. CLEAVER, Lichfield—Bulbs.
MESSRS. W. P. LAIRD & SINCLAIR, Dundee—Bulbs.
T. HORSMAN, Bradford—Bulbs, Roses, Florists' Flowers.
J. LAMONT & SON, Edinburgh—Bulbs.
J. HEY & CO., Huddersfield—Bulbs.
W. FISHER, Burton-on-Trent—Bulbs, Fruit Trees, &c.

COMMUNICATIONS RECEIVED.—W. H. Counsell.—T. W., Harrow.—A. D. Webster.—B. S. Williams.—J. S.—A. D.—John R. J.—T. B.—W. G. S.—Pteris.—W. J. Murphy.—W. H.—J. W.—W. C. L.—J. Stephenson.—Jas. Douglas.—J. O'B.—J. S.—A. D.—W. C.—C. W. D.—A Wanderer.—W. H.—J. Riches.—W. Gibson.—W. L., Glasgow—De Mar.—Boston.—W. (next week).—J. D. H.—Prof. Boulger.—G. R. R., we cannot tell you, probably as long as you like.—G. L.—W. D.—W. M. G.—J. W.—W. R.—T. M.—C. B. P.—G. W.—H. E.—J. F. J.—G. M.—H. E., Ryde.—T. S. W.—Capt. King.

Markets.

COVENT GARDEN, September 18.

SUPPLY and prices much the same as last week. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	1 6–	4 0
Figs, per dozen	0 6–	0 9
Cobs, per 100 lb.	50 0–	63 0
Grapes, per lb.	0 6–	2 6
Lemons, per case	21 0–	..
Melons, each	1 0–	1 6
Pine-apples, Eng., lb.	4 0–	5 0
Peaches, per doz.	1 0–	8 0
Plums, ½-sieve	4 0–	9 0
Pears, French, doz.	1 0–	1 9

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	2 0–	4 0
Aubergines, each	0 4–	..
Beans, French, lb.	0 4–	..
Beet, per doz.	1 0–	..
Cabbages, per doz.	1 6–	2 0
Carrots, per bun.	0 6–	..
Cauliflowers, English, dozen	3 0–	4 0
Celery, per bundle	1 6–	2 6
Cucumbers, each	0 6–	1 0
Endive, English, per dozen	1 0–	..
Garlic, per lb.	0 6–	..
Herbs, per bunch	0 2–	0 4
Horse Radish, bund.	3 0–	4 0
Lettuces, Cabbage, per dozen	1 6–	..
— Cos, each	0 2–	..
Marrows, each	0 2–	..
Mint, green, bunch	0 4–	..
Mushrooms, p. baskt.	1 0–	2 0
Onions, per bunch	0 6–	..
— Spring, per bun.	0 6–	..
Parsley, per bunch	0 9–	..
Peas, English, quart	1 6–	..
Radishes, per doz.	1 6–	..
Small salading, per punnet	0 4–	..
Spinach, per bushel	3 0–	..
Tomatos, per lb.	1 0–	..
Turnips, new, bun.	0 8–	..

POTATOS.—Kent Regents, 80s. to 100s.; Magnums, 70s. to 80s. per ton. Trade very dull.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0–	4 0
Arum Lilies, 12 blms.	3 0–	6 0
Asters, 12 bunches	3 0–	6 0
Bouvardias, per bun.	0 9–	1 0
Calceolaria, 12 sprays	0 4–	1 0
Carnations, 12 bun.	2 0–	6 0
Chrysanth., 12 bun.	3 0–	9 0
— large, 12 blooms	3 0–	6 0
Cornflower, 12 bun.	2 0–	4 0
Dahlias, 12 bunches	3 0–	6 0
Eucharis, per doz.	4 0–	8 0
Forget-me-not, 12 bunches	2 0–	6 0
Gardenias, 12 blms.	3 0–	6 0
Gladiolus, various, 12 bunches	6 0–	12 0
Heliotropes, 12 sp.	0 6–	1 0
Lapageria, white, 12 blooms	2 0–	3 0
Lapageria, red, 12 blooms	1 0–	2 0
Lavender, 12 bun.	6 0–	8 0
Marguerites, 12 bun.	3 0–	6 0
Mignonette, 12 bun.	1 0–	4 0
Pelargoniums, per 12 sprays	0 6–	1 0
Primula, double, bun.	1 0–	1 6
Pyrethrum, 12 bun.	2 0–	6 0
Rhodanthes, 12 bun.	4 0–	6 0
Roses (indoor), doz.	1 0–	4 0
— (outdoor), 12 bun.	2 0–	6 0
— coloured, doz.	4 0–	9 0
Stephanotis, 12 spr.	4 0–	8 0
Stocks, 12 bunches	3 0–	6 0
Sweet Peas, 12 bun.	1 6–	4 0
Sweet Sultan, 12 bun.	2 0–	4 0
Tuberoses, per doz.	0 6–	1 0
White Jasmine, bun.	0 6–	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	24 0
Arbor-vitæ (golden), per dozen	6 0–	18 0
— (common), dozen	6 0–	12 0
Asters, per dozen	3 0–	6 0
Begonias, per doz.	4 0–	12 0
Bouvardia, dozen	9 0–	18 0
Chrysanth., dozen	4 0–	9 0
Cockscombs, doz.	2 6–	4 0
Coleus, various, doz.	2 0–	4 0
Cyperus, per dozen	4 0–	12 0
Dracæna term. doz.	30 0–	60 0
— viridis, per doz.	12 0–	24 0
Erica, various, per dozen	9 0–	18 0
Euonymus, various, per dozen	6 0–	18 0
Evergreens, in var., per dozen	6 0–	24 0
Ferns, in var., dozen	4 0–	18 0
Ficus elastica, each	1 6–	7 0
Foliage Plants, various, each	2 0–	10 0
Fuchsias, per doz.	3 0–	6 0
Heliotrope, doz.	3 0–	6 0
Hydrangea, per doz.	9 0–	18 0
Lilium longiflorum, per dozen	6 0–	18 0
— lancifolium, doz.	6 0–	18 0
— auratum, doz.	12 0–	24 0
Marguerite Daisy, per dozen	8 0–	12 0
Mignonette, per doz.	3 0–	6 0
Myrtles, per doz.	6 0–	12 0
Palms in variety, each	2 6–	21 0
Pelargoniums (show), per dozen	4 0–	9 0
— scarlet, per doz.	2 0–	6 0
Petunias, per dozen	3 0–	6 0
Rhodanthes, p. dozen	0–	6 0
Solanums, dozen	0–	15 0

SEEDS.

LONDON: *Sept.* 17.—The market for farm seeds today ruled quiet. Trifolium meets a sowing demand at former rates. Of winter Tares the offerings are falling off; prices keep steady. Seed Rye continues scarce and firm. No transactions of importance are yet reported in new Clover seeds, but quotations promise to rule low. Considerable quantities of new Mustard have been placed for manufacturing purposes, but, for sowing requirements, the enquiry is small. There is no variation in Rape seed. Canary seed is also without alteration, but Hemp seed is now obtainable at a considerable reduction. Blue Peas find buyers at last week's values. *John Shaw & Sons, Seed Merchants*, 37, *Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday depression was very decided. The supply of English Wheat was light yet prices ruled 6*d.* to 1*s.* lower on the limited sales effected. Foreign Wheats showed fully 1*s.* reduction on the week, and to have made much progress a larger concession would have been required. Flour receded 6*d.* to 1*s.* per sack as compared with Monday se'nnight, with no disposition to buy at all beyond immediate requirement. Grinding and common grades of malting Barley showed 6*d.* decline, and met a very restricted demand; Maize also was dull, round corn being fully 6*d.* lower; Beans and Peas were not quotably altered in value, but the market was flat; in Oats prices were 3*d.* and 6*d.* cheaper.—On Wednesday the Wheat and flour trade was exceedingly dull, and sales were barely sufficient to stamp quotations, but prices of both were lower to sell; Barley ruled quiet at barely late value; Beans and Peas were quiet and unchanged in value; Maize was very dull, and Oats rather steadier with a little more demand.—Average prices of corn for the week ending September 13:—Wheat, 34*s.*; Barley, 32*s.* 7*d.*; Oats, 19*s.* 9*d.* For the corresponding period last year:—Wheat, 41*s.* 8*d.*; Barley, 33*s.*; Oats, 20*s.* 8*d.*

HAY.

Tuesday's Whitechapel Market report states that supplies were large, especially of meadow hay, which was a very dull trade, and rather lower in price. Quotations:—Prime old Clover, 95*s.* to 118*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 115*s.*; best meadow hay, 80*s.* to 96*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 37*s.* per load.—The Cumberland Market report states that there was a good supply, but a rather slow demand. Quotations:—Clover, good, 100*s.* to 110*s.*; inferior, 70*s.* to 90*s.*; hay, good, 80*s.* to 92*s.*; inferior, 50*s.* to 70*s.*; and straw, 30*s.* to 36*s.* per load.

POTATOS.

The average prices for the week were about as follows:—Kent and Surrey Regents, 60*s.* to 65*s.*; Magnum Bonums, 60*s.* to 70*s.*; Champions, 50*s.* to 60*s.*; York and Lincoln Magnums, 50*s.* to 60*s.*; Regents, 55*s.* to 65*s.*; Victorias, 55*s.* to 60*s.*; Champions, 45*s.* to 50*s.*; Cambridgeshire Regents, 50*s.* to 60*s.*; do. Magnum Bonums, 40*s.* to 50*s.* per ton; and Champions, 45*s.* to 65*s.* per ton.—The imports into London last week consisted of 3704 bags from Hamburg, 1 Bremen, and 161 bags 17 baskets from Rotterdam.

Government Stock.—Consols closed on Monday at 101$\frac{5}{16}$ to 101$\frac{1}{16}$ for delivery, and 101$\frac{3}{8}$ to 101$\frac{7}{16}$ for the account. Tuesday's figures were 101$\frac{1}{2}$ to 101$\frac{3}{8}$ for both delivery and account. Wednesday's final quotations were 101$\frac{3}{8}$ to 101$\frac{1}{2}$ for both delivery and account. The closing prices of Thursday were 101$\frac{1}{8}$ to 101$\frac{1}{4}$ for delivery, and 101$\frac{1}{2}$ to 101$\frac{3}{8}$ for the account.

BULB SEASON.

HYACINTH, CROCUS, and SPECIMEN GLASSES of the newest and most improved designs, in great variety.

The Trade supplied on the most moderate terms.

CORRY, SOPER, FOWLER & CO., London.

DRIED FLOWERS & GRASSES.

A very large Stock of this Season's Continental and our own growth, never surpassed for quality.

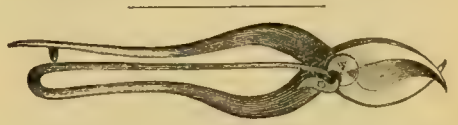
CORRY, SOPER, FOWLER & CO., London.

WREATHS and CROSSES.

Every Description and Design in DRIED FLOWERS, METAL, PORCELAIN, and IMMORTELLES. Cases for same in great variety.

An inspection particularly solicited.

CORRY, SOPER, FOWLER & CO., London.



FRENCH SECATEURS, Improved Springs, made by the successors of Aubert. Also FRENCH PRUNING and LOPPING SHEARS, AVERRUNCATORS.

Special Prices quoted to the Trade by the Importers,

CORRY, SOPER, FOWLER & CO., London.



ELCOME'S PATENT FUMIGATOR.—A great improvement on any yet introduced; rapidly emits the smoke without requiring live coals, and will consume dry paper without fear of flaming. Prices:—

	No. 1.	No. 2.	No. 3.
Japanned Iron	5s.	10s.	10s. 6d. each.
Galvanised	6s.	11s.	17s. 6d. ,,

Also adaptable for Burning Charcoal for Heating Purposes.

CORRY, SOPER, FOWLER & CO., London.

MUSHROOM SPAWN.

The most reliable in the Market—the most satisfactory reports continually arriving.

CORRY, SOPER, FOWLER

AND COMPANY (LIMITED),

Office and Show Rooms, 18, FINSBURY STREET, E.C., and Manufactory,

SHAD THAMES, LONDON, S.E.,

Horticultural Sundries Merchants and Manufacturers,

The Trade only supplied, on the most liberal terms. CATALOGUES sent on the application being accompanied by a Trade Card. An inspection of our Autumn and Winter Stock respectfully solicited.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

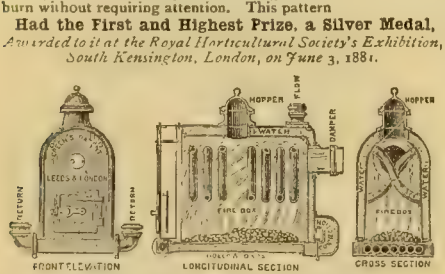
SILVER SAND, coarse, Sussex and Bedfordshire; Sussex and Kent PEAT and LOAM of the best quality by truck load ton, and in sacks, at moderate prices.—W. SHORT, Horticultural Co., Midhurst, Sussex.—Estab 1862.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

TANNED NETTING,
Specially selected for Garden Use.
2 yards wide, 1½d., and 4 yards wide, 3d. per yard run.
Scrim, Hessian, and Tiffany, for protecting Fruit Trees and shading Greenhouses, from 2½d. per yard and upwards.
Russia Mats, Raffia Fibre, Tobacco Paper and Cloth, Cocoa-nut Fibre Refuse, and other Sundries at the lowest possible prices.
CATALOGUE post-free on application.
JAMES T. ANDERSON,
149, COMMERCIAL ST., LONDON, E.

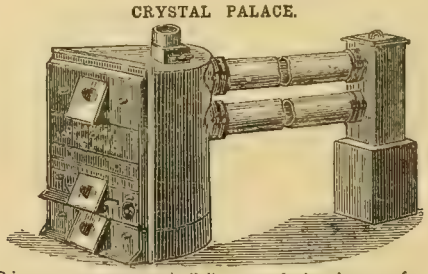
THOMAS GREEN & SON
(LIMITED),
Smithfield Ironworks, Leeds,
And Surrey Works, Blackfriars Road, London, S.E.,
Horticultural Engineers to Her Majesty the Queen,
CALL SPECIAL ATTENTION TO THEIR
PATENT
WROUGHT-IRON TUBULAR
HOT-WATER BOILERS,
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;
SADDLE BOILERS,
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.
They are the neatest, cheapest, most effective, and durable of any extant.
The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern
Had the First and Highest Prize, a Silver Medal,
Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3, 1881.



The *Journal of Horticulture* of June 9 says:—
"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."
The *Garden* of June 11 says:—
"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."
Descriptive Illustrated Price List may be had free on application.
Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice. Galvanized Iron Cisterns, from 4d. to 1s. 6d. per gallon.

WRIGHT'S "CHAMPION" ENDLESS-FLAME-IMPACT BOILERS,
admitted by the entire Trade, after Public and formal challenges, to be *the most economical of fuel, the most powerful, the simplest,* and *the cheapest* in the Trade. Price Lists and particulars from WRIGHT'S BOILER CO., AIRDRIE, N.B.

THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS
Can be seen in action Tuesdays, Thursdays, and Saturdays, in
DEANE & CO'S "GEM" CONSERVATORY,
Close to the Panorama in the grounds of the
CRYSTAL PALACE.



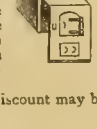
Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4-inch hot-water pipe, and patent joints complete, £4 4s.
Delivered free to any Station. Discount for cash.
This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.
It burns over 12 hours without attention at a nominal cost.
"Loughborough" Boilers to heat up to 650 ft. of 4-in. pipe, with hot-water pipe, joints, &c., always in stock.
COST OF APPARATUS FOR HOUSES OF ANY SIZE ON APPLICATION.
The measurement of Greenhouse being given, every apparatus is delivered with pipes cut and fitted ready for fixing.
Illustrated LIST with full particulars, post-free.
DEANE & CO.,
Horticultural Builders and Hot-water Engineers,
46, King William Street, E.C. LONDON BRIDGE.

THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler, Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.



Long.	Heat of 4-in. Pipe.	Price of Boiler and *set of Fittings.
A, 19 in.	150 feet	£5 10 0
B, 22 in.	300 ,,	6 15 0
C, 24 in.	400 ,,	8 5 0
D, 26 in.	500 ,,	9 10 0
E, 28 in.	600 ,,	10 15 0
F, 32 in.	700 ,,	12 5 0
G, 36 in.	850 ,,	13 15 0
H, 42 in.	1000 ,,	15 10 0
I, 48 in.	1250 ,,	17 5 0
J. 54 in.	1600 ,,	19 10 0
K, 60 in.	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c.
Says a Gardener of great experience:—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite."
Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.
FOR SMALL CONSERVATORIES
for Heating from 50 to 100 feet of pipe.
An Independent Boiler, with furnace front, doors, fire bars and dead plate complete, and 6 feet of funnel. This is called the "LITTLE WONDER." It is fixed in the end or side wall of conservatory by any bricklayer; the funnel running up just outside the glass. It can be applied almost everywhere. It will keep in all night. It is worthy of its name. Price complete, 50 feet size, £4 15; 100 feet size, £5 15s.



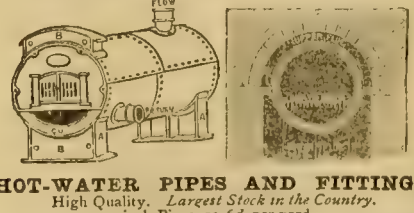
If cheque is enclosed with order 5 per Cent. discount may be deducted, if not, reference to Banker required.
LANKESTER & SONS,
Horticultural Heating Engineers, Southampton.
We send capable men to fix work in all parts of the Kingdom. Estimates given. Drawings of Patent and Special Appliances for Heating Dwelling Houses and Churches sent on application.

THOS. W. ROBINSON,
DENNIS PARK IRONWORKS, STOURBRIDGE.
The "Expansion Joint."



The Best and Quickest Made.
4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4s. 3d. each;
4-in. Socket Hot-water Pipes, 9 feet long, 4s. 6d. each.
Price List on application.

The Original and only Genuine Stevens' Trentham Rivetted Boiler,
Recently Improved and Reduced in Price.



HOT-WATER PIPES AND FITTINGS.
High Quality. *Largest Stock in the Country.*
4-inch Pipes, 1s. 6d. per yard.
FRED. SILVESTER, Castle Hill Foundry, Newcastle, Staffordshire. This Advertisement appears alternate weeks.

HORTICULTURAL GLASS SHEET GLASS
14×12, 16×12, 18×12, 20×12, 16×14, 18×14, 20×14
20×15, 20×16, 22×16, 24×16, 20×18, 22×18, 24×18
21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.
A large stock of similar current sizes of 15-oz. glass in 200 feet boxes.
Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from
GEORGE FARMILOE & SONS,
GLASS, LEAD, OIL and COLOUR MERCHANTS,
34, St. John's Street, West Smithfield, London, E.C.
Stock List and Prices on application Quote *Chronicle.*

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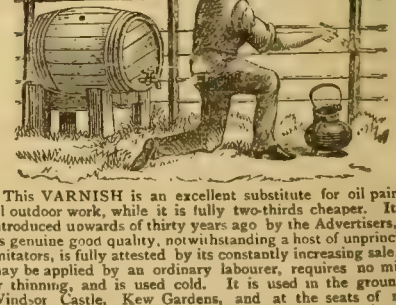


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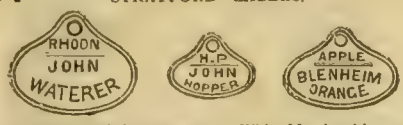
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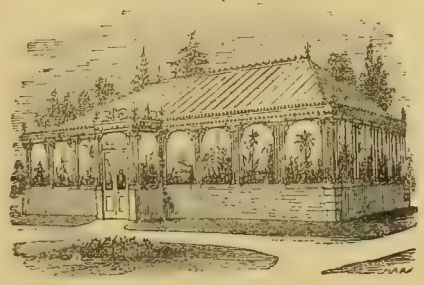
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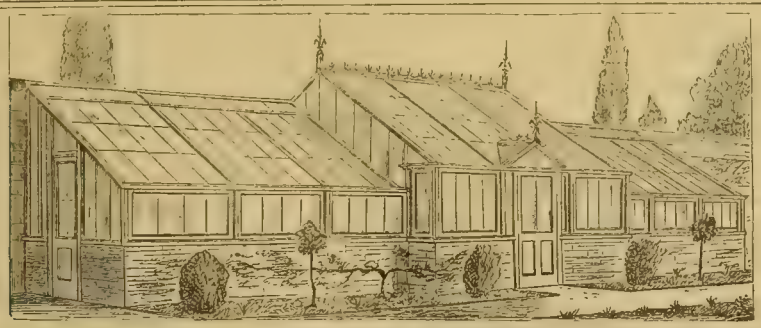
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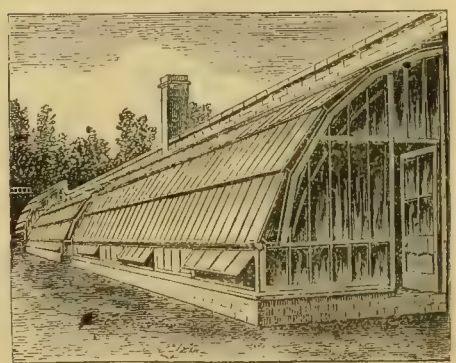
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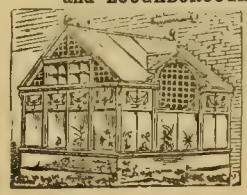
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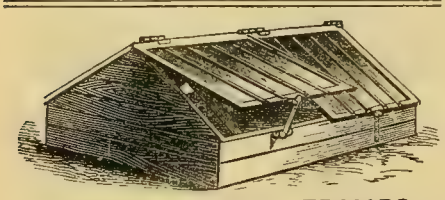
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Of the Committee of the National Apple Congress held at Chiswick in October, 1883.

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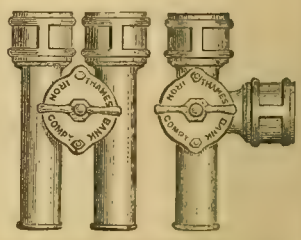
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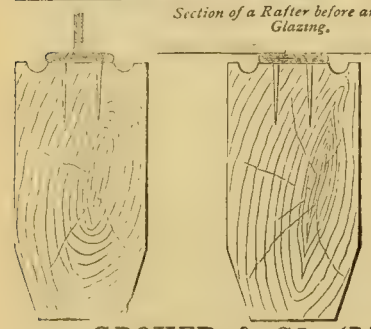


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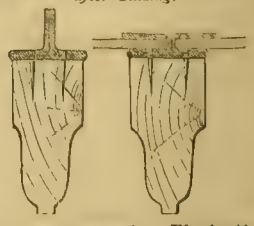
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 20, 1884.
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 561.—Vol. XXII. { New Series. } SATURDAY, SEPTEMBER 27, 1884. { Registered at the General Post-office as a Newspaper. } Price 6d. Post-free, 6½d.

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HEAD GARDENER, Floore, Weedon.

Winter Flowering Tree Carnations.
W. HOWARD, Southgate, N., can supply good strong well furnished Plants, from the open ground, of all the varieties worth growing, including the new ones of this year also:—ADIANTUM cuneatum, in 48's and 32's, very good; do. farleyense, in 48's. CYPERUS alternifolius variegatus. DRACÆNA striata, Green, a fine variety for Conservatory. GARDENIAS in all sizes. STEPHANOTIS in all sizes. ASPIDISTRA lurida variegata.

CENTAUREA CANDIDISSIMA.—The most beautiful of white foliaged bedding plants—easily raised from seed, which is the cheapest way to obtain a stock. 1s. per packet (about 100 seeds), 2s 6d. per packet (about 300 seeds).
HOOPER and CO., Covent Garden, London, W.C.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., Bulb Growers, Hillegom, near Haarlem, Holland.
Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

TREE CARNATIONS, fine bushy plants, to flower this winter, of Miss Joliffe, A. Alegatiere, Purity, La Belle, and others, 40s. per 100. BOUVARDIAS, fine bushy plants, in 48 pots, 20 to 30 shoots, all the best kinds, 40s. per 100.—W. JACKSON, Blakedown, Kidderminster.

Established 20 years.
HERBACEOUS PÆONIES.
Now is the time to plant.
A very select Collection of about 60 choicest varieties, in various shades of Primrose, Lemon, Pink, Rose, White, Crimson, &c., many of them sweetly scented. Extra strong blooming plants 9s., 12s., and 18s. per dozen.
J. J. MARRIOTT, Highfield Nurseries, Matlock.

Established 1860.
J. V. REES (late Robert Parker) Hardy Herbaceous and Alpine Plants, DELPHINIUMS, IRIS GERMANICA, PHLOXES, POTENTILLAS, PÆONIES, &c. Selections of 100 showy varieties from 50s. The finest collection of Aquatics in the country
Exotic Nursery, Tooting, Surrey, S W.

DWARF-TRAINED FRUIT TREES are extra fine with us this year. All leading varieties of PEACHES, NECTARINES, APRICOTS, PEARS, APPLES, PLUMS, &c. LIST post-free.
GEO. COOLING and SON, The Nurseries, Bath.

LOVEL'S STRAWBERRY RUNNERS, 3s. per 100, 12s. 6d. per 500, 20s. per 1000.
LIST of varieties on application.
"A BOOK ABOUT STRAWBERRIES," 3d.
W. LOVEL and SON, Strawberry Growers, Driffield.

STRAWBERRIES.—Strong Roots, 4s. per 100. Plants, in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

STRAWBERRIES, very strong, in large 60's, either for potting on or planting out, price 15s. per 100, free to London. LIST, Trade Terms, &c., on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

LOVEL'S STRAWBERRY RUNNERS are strong, healthy, and well-rooted.
LIST of varieties with Prices on application.
"A Book about Strawberries," 3d.
W. LOVEL and SON, Strawberry Growers, Driffield.

Strawberries (true to name).
CRANSTON'S NURSERY and SEED COMPANY (Limited) have a large quantity of Runners and Pot Plants to offer, and will be pleased to send a Priced LIST on application.
King's Acre, Hereford.

STRAWBERRIES—STRAWBERRIES.—Purchaser's selection, strong runners from ground, 3s. 6d. per 100; our ditto, 2s. 6d. per 100; 500 for 10s. 6d. Plants in 2½-inch pots, 12s. 6d. per 100; in 5-inch pots, 25s. per 100. All the principal sorts grown, including British Queen, Dr. Hogg, Jas. Veitch, Keens' Seedling, President, Sir C. Napier, Sir J. Paxton, Stirling Castle, Vicomtesse H. de Thury, and thirty other varieties. Catalogues on application.
WM. CLIBRAN and SON, Oldfield Nursery, Altrincham.

STRAWBERRY RUNNERS.—All the leading varieties, well-rooted, 3s. per 100, free. SCOTT'S WASP DESTROYER, the most effectual mixture for destroying wasps.—JOHN SCOTT and CO., Royal Nurseries, Merriott.

SALES BY AUCTION.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6734)

CATTLEYAS and LÆLIAS, received direct from Brazil.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 1, at half-past 12 o'Clock precisely, 200 Dwarf CATTLEYAS, pretty little selected plants; also 150 Dwarf LÆLIAS, also selected; and other importations of LÆLIA PURPURATA and CATTLEYAS of sorts, received direct.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6735.)

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 2, about 200 lots of good ESTABLISHED ORCHIDS, many in flower and bud, comprising fine plants of Cypripedium Spicerianum, C. lævigatum, Cattleya Mendeli, C. Trianæ, C. Eldorado Wallisi, Odontoglossum pulchellum majus, O. Roezlii (album var.), Oncidium macranthum, Paphinia grandis, Phalænopsis Lowii, P. Sanderiana and P. Stuartiana, Zygopetalum rostratum, Aërides Houlettianum, Anguloa Ruckeri, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6735.)

AERIDES LAWRENCIÆ (True).

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, October 2, at half-past 12 o'Clock precisely, a grand importation of AERIDES LAWRENCIÆ, one of the most magnificent novelties introduced. Professor Dr. Reichenbach, in *Gardeners' Chronicle*, October 13, 1883, says:—"A grand and unique Aerides, we may easily describe the inflorescence. A glorious Aerides raceme, surpassing a foot's length, having flowers nearly as large as those of Aerides crispum, but near those of Aerides odoratum, first with greenish, then white, finally yellowish ground-coloured sepals, the petals flushed at the ends with fine purple, mid-lacinia, excluding basilar side lobules, of same purple, sending two purple lines to the mouth of the spur." See also *Gardeners' Chronicle*, September 22, p. 370, in which the Editor says:—"Briefly the plant may be described as the best and most beautiful Aerides ever introduced." A First-class Certificate was awarded to it on September 9 last. Aerides Lawrenciæ is of free growth, and the plant combines grandeur of flower with fine habit. The spike obtains some 1½ to 2 feet long, and the flowers measure up to 2 inches in diameter. It stands quite unique among the Aërides and is altogether a gorgeous and beautiful plant. The importation is in very extra condition, including wonderful masses, and some of them are throwing up flower-spikes.

The Sale will also contain a grand lot of CATTLEYAS, ODONTOGLOSSUMS, MEXICAN ORCHIDS, VANDA SANDERIANA, the lovely TRICHOCENTRUM ALBO-PURPUREUM, CATTLEYA LUTEOLA, &c,

On view morning of Sale, and Catalogues had.

Sales Every Monday, Thursday, and Saturday.

DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.—Valuable Established Orchids.

Including many well-grown Plants with Flower-spikes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 30, at half-past 12 o'Clock precisely, about 300 lots of ESTABLISHED ORCHIDS, among which will be found the following valuable Plants:—

Odontoglossum bictoniense album
,, Hiilt leucoglossum
Cattleya Wallisi
Lælia autumnalis (large specimen
Oncidium Krameri
,, nubigenum
Oncidium rotundifolium

ESTABLISHED BURMESE ORCHIDS from a well-known provincial collection, amongst which will be found fine specimens of Dendrobium formosum giganteum, D Veitchianum, D. crumenatum, D. Dalhousieanum, D. tortile, D. eburneum, D. Jamesianum, and others; and a small lot of CATTLEYA BICOLOR.

On view morning of Sale, and Catalogues had.

Tuesday Next.—Flowering Orchids.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, September 30, about 100 lots of ORCHIDS in flower, from various collections, including several splendid varieties of Odontoglossum Alexandræ and O. Pescatorei, a fine plant of O. bictoniense album, Oncidium prestans, and superb varieties of O. Jonesianum.

On view morning of Sale, and Catalogues had.

Friday Next.

ESTABLISHED and IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 3, at half-past 12 o'Clock precisely, valuable IMPORTED ORCHIDS, in the best possible condition, from Messrs. Shuttleworth, Carder & Co., together with about 200 lots of choice ESTABLISHED ORCHIDS, including several rare varieties.

On view morning of Sale, and Catalogues had.

Tuesday, October 7.—(Sale No. 217).

HIGHLY IMPORTANT UNRESERVED SALE of the far-famed COLLECTION of ORCHIDS, formed by Oscar Lamarche, Esq., of Liège, who is giving up their cultivation.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Oscar Lamarche, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 7, at half-past 12 o'Clock precisely, without the slightest reserve, his entire Collection of ESTABLISHED ORCHIDS, enjoying a reputation probably unequalled on the Continent. Amongst many other fine things, several of which are handsome specimen plants, may be mentioned:—

Vanda Lowii, a most unique specimen 4 ft. 6 in. high, with thirty-two leaves
Dendrobium Shroederi, true
,, Guiberti
Vanda suavis Veitchi
,, flavescens tricolor
,, tricolor aurea
,, ,, Wioti
,, Cathcarti
Cypripedium caudatum, several fine plants
,, Sedeni, 4ft. through
,, Haynaldianum
,, Stonei
,, Pearcei
,, Dominianum
,, Dayanum
Miltonia Clowesii Lamarcheana
Masdevallia troglodytes
Masdevallia chimæra erecta
Cattleya Gaskelliana, white variety
,, Trianæ alba
,, ,, rubra
,, Warneri
Lælia superbiens
,, Perrini
Cœlogyne Massangeana vera
Anguloa Ruckeriana
Epidendrum prismatocarpum
Oncidium tetracopis
,, macranthum
Odontoglossum Alexandræ, many special varieties
,, Pescatorei, do.
,, mulus
,, constrictum
,, sceptrum
,, nævium majus
Aërides suavissimum

On view morning of Sale. Catalogues are now ready and may be had of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Brighton.

By order of the Executors of the late Mr. Thomas Killick.

IMPORTANT CLEARANCE SALE of NURSERY STOCK, PLANTS, HORSES, FURNITURE, and Effects.

To Gentlemen and others intending Planting this season.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Mr. G. Attree) are instructed to SELL by AUCTION, on the Premises, The Nursery, Dyke Road, Brighton, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely each day, the whole of the beautifully grown NURSERY STOCK, which is in capital condition for removal, comprising thousands of Border Shrubs in fine assortment, 4500 Aucubas, about 400 of which are unusually fine plants, from 3 to 4 feet high; 15,000 Dwarf Roses, Standard Roses, Fruit Trees in variety, large quantities of Limes, Poplars, and other Ornamental Trees, the whole of the Greenhouse Plants, sixty unglazed SASHES, AGRICULTURAL IMPLEMENTS, HORTICULTURAL REQUISITES, capital WAGGON, TUMBRIL and Spring CARTS, Bay GELDING, Chestnut PONY, Bay PONY, HARNESS, and the remaining HOUSEHOLD FURNITURE, WARDROBE, CHIMNEY-GLASSES, and other items of the usual description.

May be viewed any day prior to the Sale. Catalogues are now ready, and may be had on the Premises; of Messrs. CLARKE AND HOWLETT, Solicitors, 8, Ship Street, Brighton; at Mr. ATTREE'S Offices, 136, North Street, Brighton; and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. To be SOLD, the valuable FREEHOLD BUILDING ESTATE, being that portion of the Nursery situate on the eastern side of Dyke Road, with the Dwelling-house standing thereon, and having an area of about 4 Acres, with a frontage of 300 feet to Dyke Road, particularly eligible for the erection of superior residences. For particulars and terms apply to Mr. ATTREE, or Messrs. PROTHEROE AND MORRIS, as above.

Wimbledon, S.W.

A few minutes' walk from the railway station, whence goods may be transmitted to all parts.

HIGHLY IMPORTANT FOUR DAYS' SALE of beautifully-grown NURSERY STOCK, by order of Messrs. D. S. Thompson & Son, in consequence of the expiration of the Lease of a portion of the Home Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Wimbledon, S.W., on MONDAY, October 20, and three following days, at 12 o'Clock precisely each day, several Acres of remarkably well-grown NURSERY STOCK, including 7000 Laurels, 1½ to 3½ feet; 10,000 oval-leaved Privet, fine bushy plants, 2 to 4 feet; 8000 Berberis Aquifolia, 1 to 2 feet; 1800 green Euonymus, 3000 Aucuba japonica, 1 to 2½ feet; 3000 Deciduous Shrubs, in variety; Portugal Laurels, green Hollies, English Yews, Planes, Limes, Poplars, Standard Thorns, and other Ornamental Trees, 4000 Standard and Half-standard Roses, 10,000 Fruit Trees, consisting of Standard and Pyramid Pears and Plums, Standard Victoria Plums, Horizontal and Dwarf-trained Apples and Pears, Dwarf-trained Peaches, Nectarines, and Apricots, fine Gooseberries and Currants, Orchard-house Trees in pots, and other stock.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, E.C.

Great Clearance Sale of First-class Nursery Stock.

MESSRS. MORRISON BROTHERS, Forbesfield Nursery, Aberdeen, being obliged to clear about 20 Acres of their Land, have decided to SELL the greater part of their valuable Stock by AUCTION, on THURSDAY, FRIDAY, and SATURDAY, October 2, 3, and 4. They will offer, in Lots to suit purchasers, upwards of 30,000 Dwarf ROSES, all of the finest varieties; 10,000 fine named RHODODENDRONS, 20,000 GOOSEBERRIES and CURRANTS, many hundred thousand fine CONIFERS, TREES and SHRUBS of all sizes, all of which, having been kept frequently removed, cannot fail to give satisfaction.

A List is now being prepared, and will be sent, when ready, free to any address on application. Intending planters will do well to examine the Stock previous to Sale.

Sept. 2, 1884.

Clearance Sale of Greenhouses, Piping, Boilers, &c.

MESSRS. J. McLACHLAN AND SONS will SELL by AUCTION, upon the Premises, Elm Lodge, The Chase, Clapham Common, S.W., on FRIDAY, October 3, at 2 o'Clock precisely, about 3000 feet of Glazed LIGHTING, 2000 feet of Hot-water PIPING, BOILERS, and effects.

On view day prior and morning of Sale.

Auctioneers' Offices, The Pavement, Clapham Common, S.W.

Haversham Grange, Cambridge Park, Twickenham.

A few minutes' walk from the St. Margaret's and Richmond Stations, and near to Richmond Bridge.

SALE of the COSTLY CONTENTS of the RESIDENCE, 7-octave grand concert Pianoforte, Billiard Table and Fittings by Thurston & Co., quantity of Stove and Greenhouse Plants, Azaleas, Pot Roses, Camellias, Maidenhair Ferns, &c, and outdoor Effects.

MR. CHANCELLOR has been favoured with instructions to SELL by AUCTION, on the premises, Haversham Grange, Cambridge Park, Twickenham, in consequence of expiration of lease, on TUESDAY and WEDNESDAY, October 7 and 8, at 1 o'Clock precisely each day, the elegant and well manufactured FURNITURE and EFFECTS of the residence, a valuable Collection of AZALEAS, CAMELLIAS, Pot ROSES, FERNS, CHRYSANTHEMUMS, &c., and out-door effects, &c.

On view Monday, October 6, from 10 to 5 o'Clock; Catalogues on the premises and at Mr. CHANCELLOR'S Auction and Estate Offices, Richmond; and at his branch offices at Sunningdale and Ascot.

Thirlestaine Hall, Thirlestaine Road, Cheltenham.

HIGHLY IMPORTANT and ATTRACTIVE SALE of VALUABLE and RARE ORCHIDACEOUS, STOVE, and GREENHOUSE PLANTS.

MESSRS. ENGALL, SANDERS AND CO. beg to announce that they are favoured with instructions to SELL by AUCTION, upon the Premises as above (in consequence of the Residence having been Sold), on TUESDAY and WEDNESDAY, October 7 and 8, commencing at 12 o'Clock each day precisely, the whole of the remarkably WELL-GROWN PLANTS, comprising about 300 Orchids, amongst which are some choice Dendrobiums, Cattleyas, Lælias, Calanthes, and several other fine specimens of these rare and lovely exotics; about 400 Stove Plants, embracing some especially good specimens of Eucharis amazonica, Allamanda nobilis and Hendersoni, Clerodendrons, Stephanotis, Anthuriums, Crotons, Dracænas, and others; about 2000 Greenhouse Plants, comprising Azaleas, Camellias, Ericas, Epacris, Bouvardias, Amaryllis, Arbutilons, Fuchsias, Gloxinias, Chrysanthemums, &c. A number of Carpet Bedding Plants. 700 Strawberry Plants in pots, GARDEN TOOLS and IMPLEMENTS, a large number of FLOWER POTS, PANS, and BOXES, a few tons of Potting LOAM, and a small quantity of PEAT.

On view on Monday, October 6, from 11 to 4 o'Clock. Catalogues on application to Messrs. HUMPHRIS AND CO., Estate Agents, 26, Promenade Villas; or to ENGALL, SANDERS, COX, AND PEARSON, The Cheltenham Auction Mart, No. 1, Promenade.

N.B. — The Auctioneers beg to call the attention of Connoisseurs and the Trade to the above Sale, many of the plants having obtained prizes at the local horticultural shows.

Royal Oak Nursery, Goldsworth, Woking.

Close to Goldsworth Old Nursery. 1 mile from Station of London and South-Western Railway.

EXPIRATION OF LEASE.—CLEARANCE SALE.

MR. H. W. COPUS is favoured with instructions from Mr. Newey, who is giving up Business in consequence of Expiration of Lease, to SELL by AUCTION, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely, the whole of the fine grown NURSERY STOCK, comprising 20,000 (6 in. to 2½ ft.) Rhododendrons and Stocks, 2000 Aucuba japonica, 5000 Green and Variegated Holly, 1 to 7 ft.; Perry's Weeping and Golden Holly, 1000 Roses, standard and half-standard, true to name; 5000 Ligustrum ovalifolium, 2 to 4 ft.; Cotoneaster Simonsii, 4000 Spruce Firs, 10,000 Common Laurels, 6-in. to 3 ft.; Laurustinus, 10,000 Chestnut, 2 to 5 ft.; 4000 Yews, 2 to 6 ft.; fine well furnished Green and Variegated Box, Lawsoniana viridis, 2 to 4 ft., Deutzia gracilis, large quantity of well-grown Specimen and Border Plants, Flowering Shrubs, Virginian Creepers, Ivies, Gooseberries, Currants, &c.

Catalogues can be had post-free of the Auctioneer, 16, Friary Street, Guildford, Surrey, or at the Nursery, Woking, Surrey.

Lynton House, near Elms Rd., Clapham Common, S.W.

STOVE and GREENHOUSE PLANTS.—Early Sale of Surplus Stock, without reserve.—Fine specimen Camellias, splendid large Eucharis, just coming into flower; large Azaleas; a handsome Fern, Davallia Mooreana, 8 feet through; Orchids, &c. By order of Mrs. Perrett, on the Premises.

MESSRS. PEED AND GREAVES, HORTICULTURAL AUCTIONEERS, Loughborough Road, Brixton, S.W., have been favoured with instructions to SELL by AUCTION, the above valuable lots, on WEDNESDAY, October 15, at 3 o'Clock prompt.

On view one week before the Sale by application to the GARDENER, down the Lane side of Premises. Catalogue of the Auctioneers post-free.

Preliminary Announcement.

WHITTINGTON NURSERIES, near LICHFIELD.

MR. GEO. MARSDEN is instructed by Mr. Holmes to SELL by AUCTION, at the above Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, commencing at 10 o'Clock each day, a magnificent selection from this well-known Nursery, comprising several thousands of Standard APPLES and PEARS, Pyramid PEARS on Quince, LARCH, OAK, SPRUCE FIRS, &c: EVERGREEN and DECIDUOUS SHRUBS, including Purple Beech, Scarlet Oak, Aucuba, Box, Holly, Portugal Laurels, Common Laurels of sorts, Yews, &c.; a choice assortment of CONIFERÆ PLANTS of all sizes; ROSES, Maréchal Niel, Gloire de Dijon, &c., very fine; Seedling and Bedded Plants of TREES and SHRUBS in great variety.

Catalogues will be ready fourteen days prior to the Sale, and may be had on application at the Nurseries; or of the Auctioneer, Wirksworth.

Extensive Sale of Trees and Shrubs at

MESSRS. JOHN STEWART AND SONS' Nurseries, Broughty Ferry, on WEDNESDAY and THURSDAY, October 22 and 23.

Particulars to follow, with announcement of Catalogues.

JAS. S. MARSHALL AND SON, Auctioneers.

FOR DISPOSAL, a GENUINE SEEDSMAN, FLORIST, and JOBBING BUSINESS, about 7 miles from London, in a first-class neighbourhood, main road, at a low Rent and long Lease.

Address FLORIST, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners, Florists, &c.

FOR SALE, several acres of FREEHOLD LAND, well adapted for the above Trades, also a 6-Roomed COTTAGE, with Land suitable for the Erection of Glass Houses, within 10 minutes' of Hampton Station.

J. EMBLETON, Suffolk House, New Hampton.

Somerset.

To Nurserymen, Florists, Seedsmen, and Capitalists.

TO BE SOLD by PRIVATE CONTRACT with early possession, the old-established BUSINESS, (of over 150 years, and only changed hands three times) of a Nurseryman, Seedsman, and Florist, carried on for many years past by Mr. John Scott, the present proprietor, at the Royal Nurseries, Merriott, near Crewkerne, and at Hendford Hill, and Royal Seed Warehouse, Prince's Street, Yeovil. The Merriott Nurseries comprise 27 acres of excellent land, completely stocked with splendid young, valuable and saleable Fruit, Coniferous, Forest and Ornamental Trees and Shrubs, and well-stocked Greenhouses, &c. The Residence, Offices, Stabling, Manager's Villa and Cottages, and a portion of the Nursery Grounds are the proprietor's Freehold, and may be purchased or taken on lease. The small Hendford Nursery is well stocked, and is provided with newly erected and convenieniently fitted Greenhouses and other erections adapted for the business. These premises may also be purchased or taken on lease. The age and state of health of the proprietor alone induce him to retire, and he will be prepared to sell on advantageous terms. The Yeovil branch business could be taken separately, if so desired, or the whole affair in its entirety, which would, in the latter case, afford an excellent opportunity for Partnership.

For further particulars and cards to view apply to Mr. JOHN SCOTT, Royal Nurseries, Merriott; or to Messrs. SPARKS AND BLAKE, Solicitors, Crewkerne.

To Market Gardeners and Others.

TO BE LET, with possession at Michaelmas next, a large MARKET GARDEN, with Watercress Bed, also a Residence and Outbuildings attached thereto, containing about 3 acres. The above is situated in the middle of the flourishing market town of Andover, within a minute's walk of a railway station, has a frontage (with a right of fishing in) to a trout stream of several hundred feet, and the business of a Market Gardener has been carried on therein for more than fifty years. For further particulars, and to treat, apply to Mr. R. FOOTNER, Solicitor, Andover, Hants.

TO BE LET, on LEASE, FORCING, PLANT, and MUSHROOM HOUSES, well Heated with Hot Water. Dwelling-house on the Premises. A good opportunity for a practical working Gardener with small capital. For full particulars apply, by letter only, to Mr. HENRY FRY, Romsey Road, Winchester.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

J. TYDEMAN, AUCTIONEER, VALUER, and ESTATE AGENT, Waltham Cross, N., is open to receive instructions for HORTICULTURAL SALES and VALUATIONS. Every attention given and moderate charges.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Autumn and Winter-flowering Plants.



B. S. WILLIAMS begs to announce that in consequence of the hot summer his stock of the above is remarkably fine this year, and well set for flower. Early orders are solicited for the following, which are now ready for delivery :—

AZALEA INDICA, in variety.
" MOLLIS, seedlings and named sorts.
BOUVARDIAS, leading kinds.
CAMELLIAS, leading kinds.
CYCLAMEN PERSICUM and C. PERSICUM GIGANTEUM.
EPACRIS, leading kinds.
ERICAS, leading kinds.
KALMIAS.
LILACS, Chas. X., and other leading sorts.
PRIMULA SINENSIS ALBA-PLENA.
" double, leading kinds.
SOLANUMS, Williams' hybrid.
STAPHYLEA COLCHICA.

For complete List and Prices, see BULB CATALOGUE, which can be had Gratis and Post-free on application.

Victoria and Paradise Nurseries, Upper Holloway, London, N.

ED. PARRÉ, NURSERYMAN, Ghent, Belgium, offers the following :—

SPIRÆA JAPONICA, very strong clumps, 8*s.* and 10*s.* per 100
SPIRÆA PALMATA, a stock of 3000 plants, at 10*s.* per 100, very strong clumps.
AZALEA INDICA, RHODODENDRONS, LILY OF THE VALLEY, AZALEA MOLLIS, FICUS ELASTICA. PALMS, &c.
CATALOGUE sent post-free to any part of the world.

GREENHOUSE RHODODENDRONS.—This section produces fine trusses of white, orange-red, and various coloured flowers, while many of the varieties give forth a delicious perfume. Our collection is one of the finest, including many rare varieties. 12 healthy young plants, 9*s.*; 12*s.*, and 18*s.*; 12 healthy strong plants, 21*s.*, 30*s.*, and 42*s.*

Rhododendron jasminiflorum, Princess Royal, Princess Alexandra, Fragrantissima, and Duchess of Sutherland, are well known varieties of this group.

E. G. HENDERSON AND SON, Pine-apple Nursery, Maida Vale, London, N.W.

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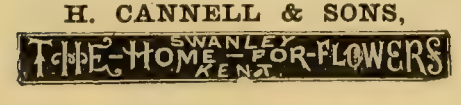
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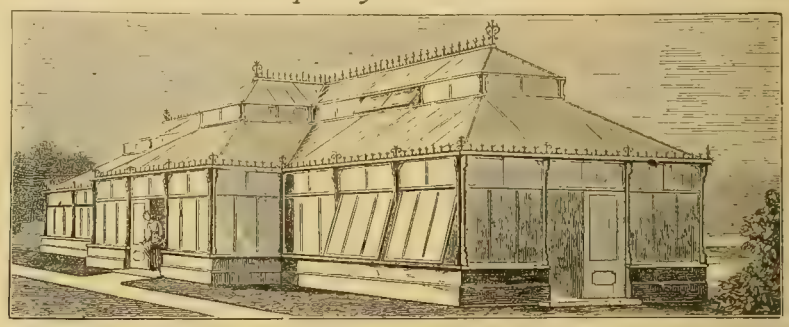
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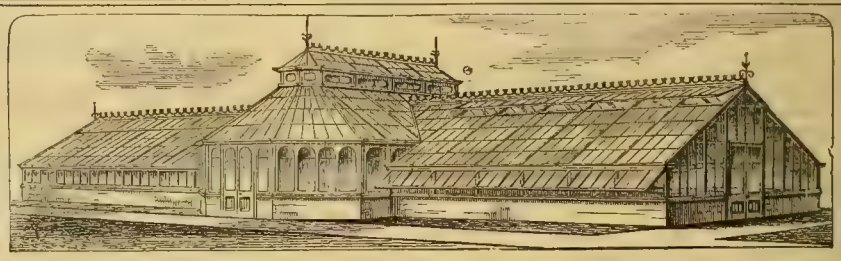
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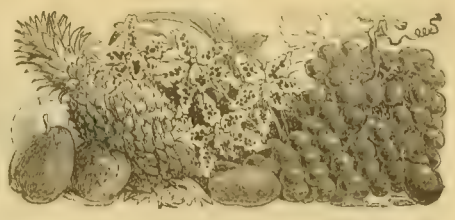
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THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 27, 1884.

BROADLANDS.

THIS famous residence of the evergreen and ever popular Lord Palmerston had been in his family several generations after they had acquired it of the old St. Barbes. The excellent house, not too large, but large enough for one who was, unfortunately, childless and the last of his race, was built in the last century by his grandfather. It stands by the Test, which is a river here with a good volume of water that rolls through the grounds. I looked for the trout, having known the Test on the estate of a friend a little below Stockbridge, 12 miles from here, where big fish are seen by the dozen in the deep pools when the water is clear. I was told that in this part of this famous trout stream the salmon have increased and have driven off the trout. Can this be true? since salmon and trout are constantly found together in Scotland, and the trout is more ravenous than his congener, and has a bigger mouth and appetite, especially such trout as those of the Test. They are there all the year too, while the salmon are migratory.

From the room on the west side which Lord Palmerston made his study he must have often enjoyed the immediate prospect around his home, the lawn sloping down from the terrace to the banks of the rapid, sparkling stream, and wisely kept quite clear of flower-beds; and then beyond a bold sweep of park enclosed by his own hills, planted by his own timber, with here and there a distant gable or chimney, the happy sign of neighbouring life, peeping out from among the trees—Lombardy Poplars, perhaps, of which some pretty groups are seen, but all his own, at command—cottage of gamekeeper, or home of farming tenant, not, you may be sure, of rival lord or country gentleman, still less of rival Premier present or to come, for these are nuisances which the heads of great houses can ill endure. Ownership is a natural desire, and when St. Clair reminded Uncle Tom, who sighed for freedom and his own fireside, that he enjoyed every comfort, ease, and liberty, and a house he might call his own, he replied, "But it isn't mine, massa." Land proprietors sometimes carry the natural instinct to excess, and require miles more of elbow-room than is necessary. Looking up the stream on the right you see, without knowing that your sight has passed the boundary of the park, a bridge of one arch spanning the stream amid the foliage of great trees, and this bridge stands in the town of Romsey, which is just outside the gates of the park, and yet is unseen, with the sole exception of this ornamental bridge of one arch. Southampton lies down the stream on the left, 7 miles distant, and looking from the south front across a mixed Italian and Dutch garden, enclosed with a low Yew fence, clipped and kept down to 2 feet high, and fashioned here and there with the shears into pyramids and other formal figures, enclosing Portugal Laurels, Hollies, and Yews and the Laurustinus, all clipped into formal shape. Looking across this delightful garden, with its flower-beds and "ribbons" and ever-

green hedges (you may drop the h, for the garden is edged rather than hedged the fence being trimmed down on purpose to be looked over, offering neither defiance nor defence—looking across the park in that direction and across the distant country, your eye will rest, far off on the south and south-west, on one of the chosen corners of England, the New Forest, where lovers of trees and solitude may indulge their tastes to their heart's content.

It is quite time to say, before noticing the timber and remarkable trees, that Broadlands is now the property of Lord Mount Temple, the step-son of Lord Palmerston, who married the daughter of Lord Melbourne, the widow of Lord Cowper, and whose son, lately known as Mr. Cowper Temple, took the family name of Lord Palmerston in addition to his own, according to a request earnestly expressed in Lord Palmerston's will. He has since been raised to the peerage—an honour which cannot increase the world's esteem which he enjoyed before in full measure, especially amongst his neighbours. A premier, or great political magnate, is debarred to a great extent from the field of local usefulness. His appearances at the village flower show or county agricultural society are field days which the country watches and waits for with eager interest, as when Disraeli assumed the shepherd's crook in Bucks, or Bulwer piped to the swains of Herts, or Lord Palmerston in Hants, in the little old-world town of Romsey, discoursed on "matter in the wrong place," or of "original sin," which he declared was not so much inbred as taught and picked up from bad example. All the world enjoyed the fun and shrewd sense displayed at these local festivals; but their occurrence was rare, after all, and Lord Palmerstone's successor presides over twenty local gatherings to that great man's one.

We may mention here Lord Mount Temple's enthusiasm for the public good, because it induces him to open his park, and occasions some very interesting and sometimes curious gatherings. The day before my visit, on August 1, there had been a meeting on the lawn next the Italian garden of the Band of Hope of Romsey—a society whose hope is fixed on the prevalence of total abstinence. May their converts be many! Good, wholesome water to any extent, short of being drowned in it, is very desirable; but the great desideratum for abstainers is a better drink than the impure water one meets with in travelling about in hot weather or than those acidulated, gaseous beverages which in about three days pinch and poison a man, and would kill any plant outright. The Romsey Orchestral Society came with the Band of Hope, and a promenade concert was held beneath the trees, while the bright river ran by discoursing sweet music too. A most ingenious tent, without a pole, stood in the ground after the festival, waiting to be struck—empty ginger beer bottles strewed around. This is, as Mr. Thirlby, the very able head gardener explained, one of the collapsible tents invented by Mr. Berthon, the Vicar of Romsey, a gold medalist of the Fisheries' Exhibition, famed for boats and clever contrivances which his brain produces and his factory in the town puts into material form.

A Band of Mercy of this neighbourhood, a society organised by Lady Mount Temple to encourage kindness to animals, and affiliated to the Society for the Prevention of Cruelty to Animals, is always welcome in the park. The railway sometimes brings from a distance, at low fares, associations and societies of various kinds, and here a delightful and convenient site, ten minutes from the station, may always be found, when the members have arranged for an outing. Perhaps the largest gathering is that in connection with the Widows' and Orphans' Fund, when 10,000 persons have assembled in the park—an army of busy, bustling people, naturally somewhat excited, and yet, says Mr. Thirlby, "very little damage was done." I once heard a discussion on beer. A man in liquor had knocked another man down. "It was'nt him that did it," said an apologist, "it was the beer that was in him." This plausible argument a lover of beer endeavoured to meet. "No such thing," he said, "blame the man and not the beer, for why did he knock him down? Why? Because there was something in his self beforehand working towards that conclusion."

This is a doctrine of original sin which Lord Palmerston, on this very spot, repudiated, and we are bound to admit that among 10,000 people in the park, no "conclusion" of injuring trees was arrived at in the absence of beer, for the sole restriction on these occasions is, that intoxicants should not be supplied, and we are led to infer that boughs are broken by the influence of beer, and not owing to any natural depravity in widow or orphans or their friends.

A peculiar bigotry leads people sometimes to impugn the motives of those gentlemen who open their parks; but the position of a peer is more independent than that of an M.P. Mr. Cowper Temple, as a member of Parliament, moving unknown among the amalgamated saddle-backs, or stiff necks, from distant factories, used to hear them say, "Ah! this is all very well, but we know what he does it for." Now Lord Mount Temple hears them say, "He must be a kind man." Another observation which the noble owner of Broadlands has the opportunity of sometimes hearing is this:—"I say, though, ain't it a shame one man should have all this? Eh, governor?" His lordship's answer usually is, "If it were not so, recollect you would not have the opportunity of seeing the place in the state in which it is now kept."

The orangery, when empty in summer, is converted into a place of shelter when Hearts of Oak, or others, are daunted by the weather, and in this appropriate assembly-room a conference of clergy of all denominations has been held. They met first under the wide-spread shade of a group of Cedars of Lebanon, among trees of the kind Solomon felled for the Temple, and amidst foliage native to the hills of Palestine. And here the lions and the lambs of this very mixed gathering were invited to love one another, and at the tea party in the orangery such dignitaries as Canon Wilberforce were seated side by side with ticket-of-leave converts and preachers like Ned Wright.

Some of the finest trees on the banks of the Test and the little Tatburn, which runs through the grounds, are Elms and Planes. A remarkable Elm on the margin of a walk, having the rivulet on one side and the kitchen garden wall on the other, and close to the house, measures 27 feet in girth. It is cleft into two large stems at 12 feet above the ground, and these are loaded with a mass of branches and foliage 140 feet high, according to Mr. Thirlby's measurement.

The whole of the park is beautifully planted. We walked down to the river side and followed the stream southwards, and then made a detour to reach the house again; and this walk through the shrubbery, or portion of the park which is fenced from cattle, introduced us to the trees and shrubs which are most worthy of close notice and most conspicuous from the windows. Even the tallest trees are feathered to the ground—a form of growth which adds much to their beauty. There is a Beech with foliage 32 yards in diameter. It is a grand tree, not on the river level or on the richest land, which bears Oaks and Elms—the English sorts generally—and most other trees in perfection except Conifers; but on the higher ground, or anywhere except on that rich diluvial soil, 2 feet deep, and full of sea shells, in which the Conifers do not flourish. Here we have evergreens of other sorts, Yews feathering to the ground, and large Box trees. The Wych Elm is not often overturned by wind here, but the English Elm has been laid flat on the ground to the number of thirty great trees, side by side, during a single storm. A great Cedar of Lebanon standing outside the vein of shells, with a big trunk and vast head of branches, is one of the most remarkable trees at Broadlands. I looked upon a tree of another sort, close to the river, with peculiar interest, because Canon Kingsley, who came here often as a guest, and loved the trees and the river, and its sport "botanised" it, and left a note of its name. It is the grey Poplar, P. canescens, one of our indigenous timber trees according to Mr. Loudon. The specimen here is one of the largest Poplars of any sort that I have seen, with a large tall trunk, containing a great deal of timber. It has bark almost as rugged and deeply ridged as that of the Cork tree. At its foot is a patch of the little indigenous shrub, the Butcher's Broom.

Lady Palmerston, having good taste, greatly improved the outlook from the house and surrounding gardens by opening vistas through the park, especially where timber stands thickest, and thus she extended the view to various salient spots—to Toot Hill, which is covered with masses of Scotch Firs, and to Yew Tree Wood, named from its great Yews. One of her strokes of genius is amusing. An upright Cupressus contrasting with some spreading Cedars near it, formed a conspicuous object from the house. Every one admired the tree. But what if anything should happen to it? So a similar tree was cleverly planted exactly in a line with it, so that the two trees look like one tree from the windows, and the loss of either would not be observed. The woods of the estate, which are generally on high ground and seen from the park, are well worth exploring, especially Nightingale Wood, with its 300 acres of Oak trees. The Beeches here are brown with the heavy crop of mast. I should like to have remained a week or two in a corner of the kitchen garden, which many persons would consider cheap at a few thousands, if they could remove it, for the sake of its Mulberry trees and tall standard blossoming Magnolias, conspicua, grandiflora and other sorts. But if they would have the fruit of the Mulberries as black and ripe as it usually is here in September they would have to remove the climate also, and look to their subsoil, which is deep and dry here, and absorbent of warmth as well as rich. A Jargonelle Pear growing on the wall of Mr. Thirlby's house, in a warm corner, was loaded with fine large fruit, which would have been quite ripe on August 1 if it had been gathered a week previously. I could not too highly praise the state of the gardens, the order, neatness, and proofs of skill and care. It would not be easy to excel the Grapes and fruits of the several houses. There are thirteen gardeners. I am glad to say besides, in reference to the estate and the encouragement of cottage gardening, that there are gardens for all. "How large?" I asked. "Oh!" was the reply; "as much as the people care to look after." I could not desire an answer more full of meaning, more suggestive of good. *H. E.*

ODONTOSPERMUM MARITIMUM.

FROM Mr. Wolley Dod we have received specimens of this autumn-flowering Composite, of which we give an illustration (fig. 70). It is a shrubby perennial, with branches ascending from a prostrate woody stock to a height of 12–18 inches, and with thick oblong leaves covered with stiff hairs, producing yellow flower-heads very freely from the ends of thick interlacing branches, and which are surrounded by a leafy involucre, the bases of the leaves of which become hardened. The regularity of arrangement of the ray-florets is very characteristic. Mr. Dod speaks very highly of it as a decorative plant. It is a native of Greece and the Mediterranean region.

A NEW USE FOR THE CRITTENDEN DAMSON.—The handsome and prolific Damson figured in our last issue (fig. 68, p. 373) is very spiney, and these spines, it appears, offer a temptation to felony as well as the fruits. In a Kentish plantation of which we heard recently the gipsies broke in and removed a quantity of the spiney branches. On inquiry it turned out that bundles of these spines were sold to the butchers for skewers—a fact to be recorded in the next book on Economic Botany!



Fig. 70.—Odontospermum maritimum. (see p. 392.)

MONRO'S GLASS SCREENS.

Mr. John Monro, the well-known horticulturist, whose inventive faculties have ere this been successfully brought to bear on several appliances connected with gardening, has now devised a cheap glass contrivance by which Tomatos, and possibly some other things, which our summers cannot be depended on to produce satisfactorily in the open ground without something to help the sun's rays, can be assisted. In the last week in August, at the place where Mr. Monro resides—Bulwer Road, New Barnet—we saw about half an acre of Tomatos carrying an excellent crop; some had been gathered; more were then ripe, with quantities to follow; they were grown against what may be described as light glass screens about 4 feet high. The plants were planted so as to cover both sides of the glass thinly, and trained closely against it just as they would to a wall if nailed against it. The screens, each 100 feet long, occupy an open position, and stand some 7 or 8 feet apart, with their ends due north and south. So placed, as will be easily understood, the sun, from the time it is a little above the horizon until its setting, shines on the glass, giving warmth to the plants on both sides, which, in addition, receive shelter from the screens, and also get light on all sides very differently to what they would if grown up to an ordinary wall. The screens are constructed as follows:—Upright posts 3 by 4½ inches, ordinary 9-inch deals sawn in two, have their ends sunk 2½ feet in the ground, leaving 4 feet out: these stand about 9 feet apart. The posts have several pairs of stout galvanised wires running through them from end to end, stretched so as to make them quite tight. Between these the glass in long wide loose sheets is slipped in from the

top resting on a horizontal strip of wood which is let into the posts about 6 inches above the ground, and from which thin upright wires lying close to the face of the glass on each side are secured, to which the plants are trained. In this way the crop has been grown. But during the summer Mr. Monro has much improved his screens by the use of light grooved wood bars running upright from the horizontal strips, attached to the posts a little above the ground line and attached to similar strips fixed horizontally to the top of the post; these lattter are cleft so as to admit the sheets of glass, which can be instantly slid into their places, and as easily taken out. In this way the squares butt one against the another. By a simple contrivance of additional light strips of wood, a groove is provided which admits squares of glass that act as a coping to both sides of the screen. By a strong wire running through the top of the posts their entire length and tightened with a screw in the way of ordinary fencing, the whole is braced up and strengthened. These last described screens are 5 feet high. As these screens are principally intended for summer use, Mr. Monro has contrived a series of pits for growing winter salad, &c., the lights for which are grooved so that the glass from the screens can be used for them, which is obviously so far an advantage. Evidence of the influence these glass screens have had on the Tomatos grown against them was fully proved by the state of the plants and the fruit they were bearing, compared with others growing in the same ground but without the assistance of the screens; in the case of the latter the yield was not more than one-fifth that of the former.

New Garden Plants.

ONCIDIUM AURARIUM, *n. sp.**

A MOST unexpected novelty. It stands close by Oncidium linguiforme, Lindl., but it is distinguished by good characters as well as by colours. The bulbs are nearly a span high, compressed pear-shaped, ribbed, the sides nearly ancipitous, shining. Leaves two, to judge from the scars, ligulate, acute (I only know them from a sketch kindly forwarded by Mr. T. Christy). Panicle "4—5 feet high," with numerous zig-zag twigs. Flowers stellate, equalling those of Oncidium hastatum. Sepals and petals fine yellow with brown spots. Lip trifid, side laciniæ rectangular, shorter, mid lacinia triangular, produced, light yellow, with a reddish-brown disc at the base, over which are five light sulphur keels terminating in short ascending bristles. Column longer and more slender than in Oncidium linguiforme, with small upright falcate wings. This neat thing was introduced by Mr. T. Christy, F.L.S., from Mr. J. M. Bang, Bolivia, and is now in flower under Mr. E. Loaney's management at Malvern House, Sydenham, S.E. *H. G. Rchb. f.*

CALANTHE DIPTERYX, *n. sp.*†

This stands near Calanthe pleiochroma, but it is very easily distinguished by the very wide and very low anterior lacinia of the lip, curved on the outside towards the column, so that it is half heart-shaped there, furnished outside with very few small lobes. The basilar auricules are blunt triangular, and by not nearly so wide, scarcely reaching half the breadth of the anterior lacinia. The callus consists of numerous narrow, small, now impressed bodies, of deep purple colour, and stand in three rows, from the base to the very short isthmus. The rather thickish spine is only half as long as the stalked ovary, blunt. Bracts acuminate from a broad base, not equalling half the length of the pedicels excluding the ovary. Sepals, spur, ovaries, stalks, bracts, rhachis slightly downy. The flower would appear to be suffused by rich purple. I did not see it fresh. Messrs. J. Veitch & Sons imported it from Sunda Islands, where it was gathered by Mr. Curtis. *H. G. Rchb. f.*

ONCIDIUM LIMMINGHEI, *Ed. Morr.*

Specimens quite lately imported from Amazones by Mr. T. Christy, F.L.S., show the basilar wings of column remarkably well developed, concave, crenulate, forming acinaciform bodies. An indigitation to this may be seen in Professor Morren's fig. 5, but fig. 4 is totally free of them. No doubt they may serve to the comfort of insects, probably as an antechamber, before they ascend to study the contents of the anther. *H. G. Rchb. f.*

CATTLEYA MAXIMA APHLEBIA, *n. var.*

This flower has the shape of that of Cattleya maxima, but there are no dark purple reticulate veins on the lip, whose yellow disc is surrounded by light purple. The plump top of the column is quite that of Cattleya maxima. It was imported from Ecuador by Mr. W. Bull, and may begin its career as a variety of C. maxima. No doubt it would be very comparable to C. Lemoniana, had it not such narrow and nearly even petals. *H. G. Rchb. f.*

FERTILITY OF HYBRIDS.

(*Concluded from p.* 363.)

BUT let us give the illustrations of fertility in hybrids:—

For a long while it has been believed by florists that Ferns would hybridise. Recently biologists have discovered that they are right. Ferns of different species are sown together, and the cross-fertilisation takes place after the spire has vegetated. In the *Wochenschrift* (Berlin, 1859), Stelzner describes the mixing in this way of two species—Gymnogramma chrysophylla and Gymnogramma lanata. One plant so raised was so different Koch had to give it a specific name—Gymnogramma Stelzneriana. But this proved entirely sterile. This might have been an argument for the sterility of hybrids. But in 1864 (see *Bull. Bot. Cong.*, Amsterdam, 1866) he repeated the experiment, and had a number of plants of the hybrid, all of which were wholly fertile. Another Fern, of American origin, Asplenium ebenoides, is regarded by Berkeley and other competent pteridologists as a hybrid between two genera—Camptosorus rhizophyllus and Asplenium ebenoides. But in this case we have to say that there is no positive knowledge of this. It is abundantly fertile. Another fertile Fern, Gymnogramma Mertensii, is a hybrid between Gymnogramma chrysophylla and Gymnogramma calomelanos, and was raised in 1837. Flowering plants furnish the best evidence, because we know the whole history. The writer of this raised the first hybrid Fuchsia. F. fulgens was the male parent, and F. longiflora the female, the latter being itself a garden form. These two belong to different sections of the genus, are not only good species, but have been regarded as of distinct genera. The progeny of these hybrids were fertile. Other hybridists used equally distinct species for the male parents, such as F. corymbiflora and F. serratifolia. All the numberless garden varieties now in existence have been raised from these original hybrids. Many successive generations have been raised. There are some sterile individuals occasionally, but not more than is found with individuals of normal species. The writer also obtained hybrids between Gesneraceous plants of two genera, Gloxinia rubra and Sinningia guttata. These were fertile. Indeed, European florists have united many supposed genera in this order. Conservatories teem with them. The writer never saw a sterile one. This is also true of Begonia. Large numbers of those in our conservatories are hybrids, all fertile. In 1854 an English cultivator named Dominy raised a hybrid Orchid which was called Calanthe Dominiana. Since that time he has raised numberless hybrids, not only between distinct species, but between what are regarded as distinct genera. Phaius and Calanthe have thus been united, and so have Lælia and Cattleya. The writer never heard that any of these were sterile, though he actually remembers but one case of reproductiveness. This is Cypripedium albo-purpureum, of which a hybrid, Cypripedium Dominii, was one of the parents. A large number of hybrid Pentstemons are common in gardens, all productive. These were originally between P. Hartwegii and P. gentianoides. All our garden Gladioli are fertile. The original of these forms is a hybrid between G. cardinalis and G. floribundus. Our garden Geraniums or Pelargoniums are from many very distinct species, so distinct in appearance and general character that they might almost be regarded as distinct genera. Their offspring are occasionally sterile, but with these very few exceptions are as fertile through many score of generations as the originals. Iris Susiana and Iris iberica are very distinct. Max Leichtlin, of Baden, has many curious hybrids between them, all fertile. Azalea calendulacea, A. nudiflora, A. pontica, and A. viscosa have numerous hybrids as fertile as their parents; and so has Rhododendron catawbiense and R. ponticum. There are hybrids between Azalea and Rhododendron. The writer never heard that any of these were sterile. Rhododendron Gibsoni, the product of these two genera, the writer knows, is fertile. Mr. C. M. Hovey, of Boston, has raised fertile hybrids between the Tiger Lily and one of the Japan species (L. speciosum), between Cereus speciosissimus and Cereus crenatus, and various distinct species of Pæonies. Mr. Joseph Hoopes, of West Chester, brought Aquilegia cœrulea from the Rocky Mountains, in 1873, and soon after had numerous fertile hybrids between this and Aquilegia canadensis. The Cape Heaths of our greenhouses—species of Erica, have remarkably distinct forms among them, yet any of them hybridise freely and produce offspring as fertile as their parents. Even where a hybrid may be sterile in one country or season, it may be fertile under other circumstances. Clematis Jackmanni is a sterile hybrid in England. It seeds with the writer, near Philadelphia, with some freedom. He has a lot of seedlings, of which three have bloomed at this writing, nearly exactly reproducing the parent hybrid. In the Old World it has not been found unconditionally sterile. Mr. Anderson-Henry crossed it with C. candida and obtained seeds (*Proc. Bot. Soc.*, Edinburgh, 1867), and he finds within his experience, that the same plants which will refuse to cross one season are yielding in another. It is the season and not any structural peculiarity which makes the difference. This is American experience with plants not hybrids. Akebia, Wistaria and many other things usually sterile, occasionally surprise us by yielding good crops of seed. Rev. Professor Henslow examined a hybrid Digitalis, which was sterile, and could find no structural difference whatever between it and the fertile ones; and Dr. J. Gibbons Hunt, of Philadelphia, has traced pollen tubes to the nucleus [of the ovule] in the sterile Wistaria. Though Wistaria is not a hybrid, the fact shows that sterility does not arise from inability to avail itself of the fecundating influences, but from some cause probably connected with nutrition. Apples, Pears, and Cherries, when two or three years old, will often flower freely, but produce no fruit. The same trees, the year following transplanting, are well known to attempt to mature a heavy crop in many cases. The checking of vegetative vigour is favourable to reproduction. It is not a structural case having relation to pollination.

In the history of American fruits we find remarkably strong evidence for the fertility of hybrids. The old "purple-cane" Raspberry is either a natural hybrid, or a departure by natural variation from some native species. The "Philadelphia" Raspberry appears to have this for one of its parents, and is also either a hybrid or great variation. Found wild, there is no evidence of a positive nature. They are simply supposed to be hybrids between the Blackcap Raspberry, Rubus occidentalis, and the red, Rubus strigosus, or Rubus Idæus. However, with this "Philadelphia" and Rubus occidentalis, Mr. William Saunders, of London, Ontario, has numerous fertile hybrids. (See *Fruit Growers' Ontario Report*, 1872.) In 1875 he also had fertile hybrids between Rubus occidentalis and some "red" Raspberry. The same remarkably careful scientific experimenter had fertile hybrid Gooseberries between Ribes Cynobasti and the garden Gooseberry. The history of the Grape in America is one of a long succession of fertile hybrids, though perhaps the distinctness of the species might be a question. There is such a regular gradation, that no one can refer a form in every case to its proper species. Still, when we take the wild Fox Grape and compare it with the Grape of European vineyards, or a Scuppernong and a Frost Grape, all will admit that in no sense can these be regarded as one species. Yet they all hybridise, and the hybrids are fertile. Dr. Wylie, of Chester, South Carolina, succeeded in uniting

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* *Oncidium aurarium*, n. sp.—Pseudobulbis compresso-pyriformibus ancipitibus utrinque demum paucicostatis; uni seu bifoliis; foliis ligulatis acutis; panicula elongata, ramis fractiflexis; floribus stellatis, sepalis triangulis cuneato oblongis acutis; repalis subæqualibus, labello a basi dilatato trifido, laciniis lateralibus rectangulis, lacinia mediana porrecta triangula, carnis obscuris quinis a basi; omnibus apice ascendenti aristatis (brevissimis); columnæ alis minutis erectis falcatis. Ex Bolivia introduct. cl. T. Christy, Londinensis. *H. G. Rchb. f.*

† *Calanthe dipteryx*, n. sp.—Aff. Calanthidi pleiochromæ; racemo laxo; rhachi, bracteis, pedicellis, ovariis, sepalis extus puberulis; labelli partitionibus basilaribus triangulis obtusis brevibus, isthmo brevissimo, partitione antica lata humili anchoriformi, utrinque retrorsum dilatata, hinc subsemicordata, extus hinc minute lobulosa, antice retusa callis angustis numerosis in basi triseriatis; calcari ovario pedicellato plus duplo breviori. Ins. Sondaic. *H. G. Rchb. f.*

Scuppernong and Black Hamburgh. There are always some males or sterile plants among all Grape seedlings, hybrids or not. One of Dr. Wylie's seedlings from this cross was a male. This hybrid male had more potency in fecundating other species than any of the normal specific forms. Mr. Haskell, of Ipswich, Massachusets; Mr. Rogers, of Salem; and Mr. Ricketts, of Newburg, New York, are well-known careful experimenters in hybridising Grapes—the progeny being as fertile as their parents. Among Pears and Apples are numerous varieties which are seedless, but which no one regards as hybrids. They bear fruit in the ordinary sense of the word, but produce no seeds. They are not sterile in a pomological sense, but they are so in a physiological. They are on the road to sterility. On the other hand hybrids, well known to be such, are fertile. The Siberian Crab, Pyrus baccata, and Pyrus Malus, the ordinary orchard Apple, have intercrossed. The result is a very hardy race, just suited to the North-west, as fertile as the originals ever were. Among Pears we have Kieffer. This originated on the grounds of a neighbour of the writer. No one would regard the Sand Pear of China as any way closely related to the common Pear of the gardens. The originator had a tree of the Sand Pear and the "Flemish Beauty" with their branches interlaced. The Kieffer was a seedling from this Sand Pear tree. In this case hybridisation was not the result of an actual experiment, as in the careful work of the Grape hybridisers named; but no one doubts the hybridising under all the circumstances. But the Kieffer is one of the most fertile of Pears, either in a physiological or pomological sense. The tree is a prodigious bearer, and every fruit the writer has had the opportunity to cut open was filled with perfect seeds to an extent never found in the usual garden varieties.

M. Naudin, a very energetic French experimenter with hybrid plants, gives as the result of his observations, that never more than 25 per cent. of hybrids were sterile, and of these numbers had fertile pollen; but even this proportion may have had more to do with the climate or surroundings than with absolute sterility. In America, so far as the writer of this has had the opportunity to observe, there is no reason to believe there is any more sterility attached to hybrids than to ordinary plants. *Thos. Meehan.*

FERNS IN BASKETS.

Of all the uses to which Ferns can be put for decoration there is none, in my opinion, in which their graceful appearance can be seen to better advantage than when properly—I mean tastefully—arranged in baskets, and yet how comparatively seldom they are employed in that capacity. The embellishment by this means of our ferneries, stoves, and greenhouses, has never yet received anything like the attention it should do; a great deal of vacant space might, without prejudice to other subjects, be rendered most charmingly attractive. Call into requisition for such work the varied and elegant greenery of Ferns, and fancy how different would be the aspect of many of our houses! The dearth of climbers and droopers is bad enough, but add to this the absence of basket embellishment, and the picture above the stages is dismal. The prevailing notion seems to be to cram the stage with goodies, as if the eye was never intended to look heavenward. If, in addition to this arrangement, excellent enough in its way, the area of the house is broken up by tastefully disposed baskets of Ferns, or suitable flowering plants, how much more enjoyment would be derived from an intellectual survey of such a house. *Chacun à son goût*, as the French say, but mine is much in favour of this kind of decoration. The number of Ferns and other plants suitable for the work is very great, and offers a wide field to select from, but none should be chosen for the purpose unless of a drooping or gracefully arching habit, so that elegance of contour is assured.

There is no doubt that wire baskets are preferable for general purposes, as a diversity of shape can better be secured than when made of other material. I made very pretty Fern baskets, years ago, of shells and rock-chippings in the following simple manner:—A mould was formed in a vessel of damp sand, upon which the stones or shells were arranged closely together, and when the framework was completed I backed the whole up with soft Portland cement, leaving holes here and there for drainage, also three or four in the sides for the suspending wires. Of course this kind of vessel requires a certain amount of personal attention, but when the work is done *con amore* this is not of paramount consideration. Presuming wire baskets are selected, the work of filling should be effectively accomplished, with small baskets the simpler the better. I admire such very much as the receptacles for a single species, the basin being dressed with common Selaginella. What can be prettier in a small basket than Adiantum amabile, or A. caudatum? With large baskets of course some amount of care and taste will be required to make them look well. A groundwork of Selaginella, Tradescantia and variegated Panicum should be made, and some small Ferns should be arranged through the openings here and there as the filling up proceeds. If any difficulty arises from the soil falling through, this may be easily met by placing some pieces of coarse sacking next the moss, which will effectually prevent the evil, and of course it is desirable to use the rougher portion of the soil first. The character of the plants may vary *ad lib.*; a good central plant is found in a well-coloured Croton or Dracæna, which may be surrounded with Ferns or other smaller foliage or flowering plants; but see that the margin is fringed with Ferns, or some subjects which will droop over it, and thus present an informal appearance. Baskets of mixed subjects are most suitable for the stove, greenhouse, or conservatory. For the fernery I think they should be occupied exclusively with Ferns; and, generally speaking, this is as effectually accomplished by using separate species as by arranging two or more kinds together. This is the plan adopted at Kew, and the appearance is all that can be desired.

I was much struck, when at Messrs. Birkenhead's, of Sale, recently, with the number of Ferns they had suspended upon pieces of cork and blocks of wood; the former is perhaps preferable. Some rough peat is secured to the blocks with the Ferns, usually rhizomatous species, by means of copper wire, and, being kept well supplied with water, they make most healthy growth, and look more natural than when arranged in baskets. This is an excellent plan for Davallias, several of the Polypodiums, &c.

The number of suitable species for this work is very great, and I can only mention a few which I have noted at Kew and elsewhere, and have used with excellent effect. The following require stove temperature:—Adiantum amabile, A. caudatum, A. concinnum, A. dolabriforme, A. lunulatum, A. tetraphyllum gracile, A. tenerum; Asplenium alatum (very elegant for a small basket), A. cicutarium, and A. longissimum (this requires to be much elevated, as the fronds are drooping and grow a great length); Davallia dissecta, D. fijiensis, and its variety plumosa pentaphylla; Goniophebium subauriculatum, Gymnogramma peruviana (the finest silver Fern), Nephrolepis davallioides, N. Duffi, and N. pectinata. The following varieties are excellent for greenhouse treatment:—Adiantum assimile, A. ciliatum, A. gracillimum, A. rubellum, A. Williamsii, and A. venustum; Asplenium biforme, A. bulbiferum, A. flabellifolium, A. furcatum, and A. macrophyllum; Cheilanthes capensis, C. myriophylla, C. tomentosa, and C. vestita (these are very charming in small baskets); Davallia bullata, D. canariensis, and the variety pulchella, D. Mariesii, D. Mooreana, and D. novæzelandiæ; Lomaria ciliata and L. Gilliesii; Microlepia hirta cristata; Pellæa ornithopus, ternifolia and flexuosa; Pteris cretica, P. scaberula (a very beautiful species), and all the varieties of P. serrulata, P. Woodwardia radicans, and its crested variety. *Pteris.*

ORCHID PRUNING.

THUNIAS.—It is somewhat too early to judge of the wisdom or otherwise of the pruning system for Dendrobiums by what has been done by pruned plants this year. We have tried it on several well-established plants of the stronger growing species, and these are growing side by side with similar kinds, the old bulbs of which were allowed to remain. An experiment made on Thunias this year is, however, complete enough in its results, and these are so striking as to be worth recording. It may be said that in the case of Orchids which cast their last year's bulbs as soon as those of this year are well started, the removal of the old bulbs would not make so great a difference in the growth as would be expected to occur where the bulbs are persistent, and therefore, in the opinion of many authorities, are intended to be of service to the plant in some way or other.

Selecting, last spring, some of the strongest plants of Thunia alba, T. alba var. superba, and T. Bensoniæ, the last year's bulbs were removed as soon as the new growth was 6 inches high and well rooted. By the side of the pruned plants those of which the bulbs had been allowed to remain were growing, so that the treatment for both was exactly the same. The unpruned plants made splendid growths, and flowered freely during the summer, but of the plants that had had their old bulbs removed not one had a growth more than half as strong as the unpruned plants produced, and only two of the plants of T. alba produced flowers. There was, of course, a marked difference between the pruned and unpruned plants in this case, and so far as this experiment goes, pruning for at least some Orchids is not advantageous to the new growth, but the reverse. *W. W.*

FLOWERS IN SEASON.

STOKESIA CYANEA.—A very distinct handsome blue Composite, of dwarf habit. The leaves are lanceolate, toothed at the base, the flower-heads 3 inches across, with a leafy involucre in several rows. The flower-heads resemble those of a Centaurea, but are of a lilac-blue colour. The plant is hardy, but does well for greenhouse decoration. The specimens sent are from Mr. Ware, of Tottenham, who also sends fine samples of Zauschneria californica, a showy perennial, with orange-scarlet flowers, to which we have recently alluded.

From Messrs. Veitch come HYMENANTHERA CRASSIFOLIA, a Cotoneaster-like evergreen shrub, with very dark foliage, most of the shoots of the current year's growth thickly studded to half their length with opaque white berries (this was figured in our columns December 7, 1878, p. 725); and CLERODENDRON TRICHOTOMUM, a handsome deciduous flowering shrub, with large acuminate foliage. The flowers are creamy-white, borne on loose cymes, buds and calyx rosy-purple.

HELENIUM PUMILUM, a brilliant golden Composite, with flowers about 2 inches in diameter arranged as a single row of petals round an orange-coloured disc. CHRYSANTHEMUM CORONARIUM FLORE-PLENO, beautiful yellow flowers like golden Batchelor's Buttons (this was figured in our columns, p. 541, April 28, 1883); and C. CORONARIUM ALBO FLORE-PLENO, a lemon-coloured variety, said to be very floriferous. It can be increased from cuttings. The above three flowers came from Mr. M. Cuthbertson, florist, Rothesay, N.B.

AN EXTENSIVE JERSEY PEAR ORCHARD.

AMONG the very many successful cultivators of the Chaumontelle Pear in Jersey—where, as we all know, this king of Pears grows to a perfection unrealised elsewhere—Mr. Philip Gosset, of Bagot Manor, St. Saviour's, ranks pre-eminent. The homestead of this gentleman stands within easy strolling distance, and to the eastward of the town of St. Helier, and has been for ages past in the possession of his family—an old and noble Huguenot one, which, seeking refuge in Jersey after the revocation of the Edict of Nantes, settled there, and has now become one of the most influential in the island.

With the introduction of a friend I had no difficulty in obtaining admission into the "plantation" I came to see, and I found its owner courteously ready to show me everything, and to tell me all I desired to know about it; and, as "interviewings" and their chats are now so common a fashion of journalistic literature, I see no just cause or impediment to hinder me recording in the *Gardeners' Chronicle* my talk with Mr. Gosset anent his interesting place and its perfect culture in that popular form.

Said he, as I entered his demesne, "After all, I am but an amateur Pear grower, and don't profess, save in the extent of ground I cultivate, to do more with Chaumontelles than do others. But upon the question of the space I have under that culture I may be, as you put it, *primus ante omnes*. I have a plantation which covers some forty *verjées* of land—in English measurement about 17 acres—and these are are almost entirely stocked with Chaumontelles; for, although I grow other Pears, such as Williams' Bon Chrétien, Doyenné du Comice, Beurré d'Amanlis, Beurré Diel, Easter Beurré, St. Germain d'hiver,

Beurré d'Aremberg, Belle de Jersey, Catillac, and others, I give my attention mainly to the Chaumontelle—as, indeed, you may see. I have now 12,000 of this kind of Pear tree planted in permanent sites, most of them either in actual bearing or to become so, more or less, next year, and I have besides a quantity of young trees ready for transplanting into newly made ground, or to replace old trees. My trees—no matter what species of Pears they produce—are all laid out in squares of about half an acre in size. I put them in mathematically exact lines facing north and south, giving about 9 feet between the rows. I allow nothing whatever to be grown in the interspaces; I do not think it at all advisable to subtract nourishment from the roots of the Pear trees into other substances, and by this arrangement I make my place more pleasing to the eye as well. I never suffer my trees to grow beyond what may be called a bush (excepting those trained along the walls), so that they may be within easy reach of a man's arm for pruning and picking as he stands upon the ground. I find, too, that this convenient height does not permit the winds of Heaven to visit their faces too roughly, to put it poetically, *à la Hamlet*.

"You think that much valuable land is wasted by the wide carriage roads with which I encircle each square of trees? Not so. These wide ways are quite necessary for transporting the crops and conveying manure to the trees. When they are all gravelled and smoothly rolled they will contrast prettily with the rest of the ground; even now, in their partly unfinished condition, they strike the eye picturesquely.

"Well, yes; the site of my plantation is good. First there is the amphitheatre of hills which shelter it on all sides except on the south-east to south-west, but in which direction I have planted a screen of Poplars, which if they continue to flourish as healthily as they have hitherto done will soon become a regular belt. Then the land slopes gently from north to south, is thoroughly well drained naturally and artificially, and is walled in all round. I utilise the walls, as I before mentioned, for the fruit which will not grow in the open—the Easter Beurré, for instance. The subsoil is clay, upon which rests a stratum of richly manured loam at least 3 feet in depth. The manure I employ is a mixture of animal and vegetable, both thoroughly well rotted; and that it suits the taste of the Pear trees is certain, for look at those fine tall healthy shoots, 7 feet high and more, and which are the upsprings from maiden trees of this very season only.

"Upon what are the Chaumontelles grafted? Why, upon the Quince, as the tree produces its fruit more quickly when so dealt with than when grafted upon the free stock. I have imported the trees from France as maiden trees. In that country, notwithstanding its being the *fons et origo* of this valuable, delicious, *bonne bouche* of a Chaumontelle Pear, it is remarkable what a poor specimen of its kind it is—hardly worth the eating. But bring it into Jersey; rear it in our equable climate, so free from cutting east winds, severe frosts, and other untoward circumstances, and, lo and behold! it flourishes and fruits to perfection, as all the world knows; though perhaps none but gardeners are aware that of all the Pear trees in this, its favourite habitat, it is one of the first to flower in the spring, and about one of the last to mature its fruit in the autumn, when it has to be picked and kept for winter use. The finest Chaumontelles seldom exceed one pound in weight, and their general average may be stated at from 6 to 10 oz. each. I have never calculated the extent of my crop in bushels, but numerically I have picked thousands every year. I expect to get a splendid gathering this year; for upon the older trees, as you may remark, there is an abundant show of fruit, some of them, especially those so carefully clothed in net bags, being of the most promising size. This is a chance feather in my cap, for all over the island the crops are said to be scanty, nevertheless I look upon this good crop of mine as being due to the shelter of my plantation.

"Do I go in for anything else in the way of fruit than Pears? Yes, sparsely. I grow Grapes in my vineries, and in some forcing-houses I have I force early Strawberries."

I was now about to take my departure, when Mr. Gosset stopped me.

"Stay a minute longer," said he; "I am bound to show you a Fig tree of mine. It is an Ischia Fig, more than eighty years of age, but yet of such virility that it produced as much fruit this year as I ever knew it before, perhaps owing to the lovely season we have had. And you must take a peep as well at my rooms for storing the Pears to ripen. They are pretty extensive, as much space is needed. I pick my Chaumontelles from the 3d to the 10th of October. I place them in shallow boxes, answering the purpose of shelves, and early in November I ship them for England. They will then further ripen towards the end of November, and in the following month will appear at the dessert-tables of those who are rich and luxurious enough to buy them. It is not given to every one in England to eat a first-rate Jersey Chaumontelle Pear, I can tell you, for a mere song." *H. L. C.*

ERICA ÆMULA.

THE Erica æmula here figured (fig. 71) was 4 feet in diameter and 2 feet high from the surface of the soil, and was a plant rescued from a bad state of health when Mr. Coles first commenced his duties with Mr. Lawless; and when it passed into the hands of Mr. Gilbers, Hastings, for four guineas, it was in perfect health, and a very handsome specimen. It, too, had done good service as an exhibition plant, and together with many other varieties, all good specimen plants, did great credit to Mr. Coles, who knew well the secret of the successful cultivation of this superb class of plants, but not more so than he did those of other stove and greenhouse plants under his care, as testified by his successes at the London and provincial exhibitions.

Orchid Notes and Gleanings.

DENDROBIUM PHALÆNOPSIS. — Amongst the few good garden Orchids introduced from the Australian continent we have about half-a-dozen Dendrobiums which are more or less popular on account of the beauty and distinctness of their flowers. D. Phalænopsis, although described in the *Gardeners' Chronicle* four years ago, when it was pointed out to be a good species, and the finest of the Australian Dendrobes, still remains to be introduced in quantity. At present we know of it only in the Kew collection, where it is now flowering, a small plant with one flowering pseudobulb, which bears upon its apex a double spike of large mauve or lilac flowers, with a deeper shade in the broad petals. The labellum is almost purple, with a large blotch of deep maroon on the throat. Both in habit of plant and in the general outline of the flowers, D. Phalænopsis bears some resemblance to D. bigibbum, but the flowers are almost as large again, and there is also a difference in the colours and in the shape of the labellum. The Kew plant is additionally interesting because of its having been collected in the Island of Timor, whereas in Fitzgerald's *Australian Orchids*, where a figure of D. Phalænopsis is given, Queensland is stated to be the native place of this species. Like the rest of the Dendrobes of the bigibbum set, this new introduction thrives only in a tropical moist house, and when making its growth should be hung near the glass, where the sunlight could reach it for a greater portion of the day. All these Australian Dendrobiums are rather difficult to keep in health and vigorous growth for any length of time, but so far as my experience goes, they thrive fairly satisfactorily when treated as above recommended. D. speciosum, and its variety Hillii, are perhaps the only exceptions among the Australian Dendrobiums to the above, as they grow and flower well every year if treated along with Cattleyas in the intermediate-house. The best of the Dendrobiums from Australia are D. bigibbum, D. superbiens, D. Gouldii, and D. Phalænopsis; the second-rate ones are D. Johannis, D. canaliculatum, and D. speciosum; whilst in D. tetragonum, D. Kingianum, D. cucumerinum, and several other small kinds, we have some of those distinct and interesting little species which are popularly spoken of as botanical plants. Specimens of the above are in the cultivated collection at Kew. *X.*

ODONTOGLOSSUM VEXILLARIUM LAWRENCEANUM suggests itself as a proper name for that wonderful variety which has now again flowered with Sir Trevor Lawrence, the names superbum, splendens, &c., having been applied to so many varieties, that in the case of his plant they would have no meaning. Its flowers are of perfect form, and of a peculiar bright pink tint, but the main attraction is the upper portion of the labellum, which is of the deepest blood-red, clearly and regularly set on a pure white ground, the lower part of the labellum being of the same tint as the petals. It will be remembered that, when a very tiny plant, Sir Trevor Lawrence saw enough in it to warrant him giving something like £75 for it at Stevens', and since that it has improved greatly, and quite enough to warrant the outlay. Let it not go without a distinguishing name. *J. O'B.*

ODONTOGLOSSUM PESCATOREI.—Mr. Douglas is quite correct in his remark, that this plant seldom produces quite 100 flowers on a spike. At p. 332 the passage, "gracefully branched spikes, frequently having from 100 to 150 flowers" on a plant was intended.

PHALÆNOPSIS REICHENBACHIANA.—This latest of novelties in Phalænopsis is now in flower with Messrs. F. Sander & Co., of St. Albans, the introducers, and proves itself to be worthy of the high opinion formed of it when it flowered before on a fresh imported plant. It is said to be near to P. pallens, but it is evidently quite distinct from that variety, and seems to partake of the characterists of both P. speciosa and P. Luddemanniana. P. Reichenbachiana has flowers equal in size and form to those of a good P. Luddemanniana. Petals cream-coloured, strongly marbled with reddish-crimson blotches, which in themselves are singular on account of their being as it were rings enclosing cream-coloured spots of the same tint as the ground colour of the petals. The lip is rose-coloured with an orange base—woolly as in P. tetraspis. P. Reichenbachiana is a lovely and easily recognised beauty, although a very rare one. *J. O'B.*

The Rosery.

TEA ROSES FOR AUTUMN BLOOMING.—During a recent sojourn in North Wales one of the most pleasant surprises amongst several was to see a complete collection of Tea Roses in flower in the gardens of Samuel Barlow, Esq., J.P., Shimdda Hir, Llandudno. The time of my visit was the middle of September, and at that time the bushes were crowded with handsome Roses. They had a good season to mature their growths after the first time of flowering. The weather was hot and dry, with the usual conditions favourable to the development of mildew. Rose growers may well ask what those conditions are, for very few collections are free from this troublesome parasite after the time of flowering is over in July. The right thing to do is to attack it as soon as the leaves show traces of its presence. At that time a little dry sulphur dusted on the leaves will destroy it. The Roses had been mulched in Mr. Barlow's garden with decayed manure, and sufficient water had been applied to the roots. This attention all good growers will be sure to give their Roses, but they cannot hope to have such an autumn bloom as may be seen here. Indeed, I had taken great pains to make a good bed for our Tea Roses by trenching and manuring the ground, as well as by raising the bed a foot higher than the ground level, as it is done in the nursery of Messrs. Paul & Sons, Cheshunt, and yet with all our care there is no comparison between our Tea Roses and those in this favoured Welsh garden. There are two conditions operating in favour of Mr. Barlow's Roses, and these are climate and soil. The clear and pure atmosphere we may long for, but cannot obtain. The second is also out of the reach of ordinary cultivators. Rich mountain loam cannot be had without considerable cost. The garden where these Tea Roses are growing and flowering so well has been formed on a fertile part of the Little Orme. The rich unctuous loam of this part seems specially adapted for Roses, as hybrid perpetuals are also doing well; although they do not arrest one's attention as the Teas do. The largest proportion of them are budded on seedling Dog Roses, the best stock certainly for all Tea Roses that have to be grown and flowered out-of-doors. There are also a number that have been worked on the Manetti, and they have also given considerable satisfaction, having flowered very freely, although they cannot be said to make such vigorous

growths on this stock. I have found that it is not a bad plan to grow some of the Tea Roses on their own roots. The growth they sometimes make is very remarkable, and there is no trouble whatever with suckers. The more suckers the better, for they will all produce flowers. I went carefully over the whole collection and selected the varieties that made good growths and flowered most freely, possessing at the same time good quality. Perle des Jardins gives good buds, and is a large well formed Rose of a pale yellow; Anna Ollivier, rosy-salmon, a full-sized, distinct and good variety; Amazone, vigorous, lemon-colour, and good in the bud state; Madame Hippolyte Jamain, a well known distinct and good kind; Madame Capucine, very free blooming variety; Madame Charles, buff or soft apricot colour; Souvenir de Paul Néron, white, with a slight flush of rose at the edge of the petals; Madame Willermoz still holds a high place; Comtesse Riza du Parc, salmon-rose, large and fine flower; Etoile de Lyon, sulphur; Madame Angèle Jacquier, blush, full flower; Devoniensis and Alba rosea, two well known Roses, were flowering beautifully; Madame Joseph Schwartz, a pretty blush white, globular Rose; Souvenir d'Elise Vardon was very fine; Bouquet d'Or, a strong-growing variety of the Gloire de Dijon type, Madame Chedane Guinoisseau, bright pale yellow, one of the freest bloomers, fine in the bud state; William Allen Richardson should be classed with the Noisettes, distinct, deep orange shaded with yellow; Madame Lambard, bright salmony-rose, extra fine; Catherine Mermet, flesh-colour, one of the best; Hon. Edith Gifford, rosy-salmon, a fine new Rose; Reine Marie Henriette, deep rosy-red, a very distinct hybrid Tea Rose; Safrano, one of the best to cut in the bud state; this and Madame Falcot are both excellent before the flowers open too much; Jean Ducher, a fine globular Rose; Marie Van Houtte, yellow; Madame Berard, in the way of Gloire de Dijon, but a neater variety; Beauté de l'Europe, brownish-yellow. All these are vigorous-growing kinds, and are producing a succession of vigorous growths, which will give abundance of bloom as long as the weather permits of it. *J. Douglas.*

Choice Roses.—Souvenir de Madame Berthier is a fine addition to our hybrid perpetual Roses. It is a deep full flower, with broad, massive petals, and of a pale rosy-pink colour suffused with cherry-red. As shown by Mr. T. Mattock, of Oxford, it bears some resemblance in build to François Michelon, but considerably deeper in colour. Mr. Mattock had this and a beautiful white Noisette, named Cornelie Koch, at the recent meeting of the Chippenham Horticultural Society. The latter is something of the build of Gloire de Dijon, and of a very delicate creamy white, full of substance, and very charming. Messrs. Paul & Son described it as lemon-yellow; it may be that soils affect its colour; they also state that it is very free and double. Both Mr. Mattock and Mr. Jefferies, of Cirencester, bore emphatic testimony to the keeping qualities of Tea David Pradel: it is of a very distinct colour at this season of the year, and it will keep fresh and nice many days after being cut. *E. A. L.*

Gros Maroc Grape.—Some specimens exhibited at the last meeting at South Kensington suggest the enquiry, What is Gros Maroc? In two or three of the exhibits the berries shown under this name were round-ish-oval, large, covered with an abundant bloom, while in at least one other the berries were cylindric, pointed at the apex, lighter coloured, and with less bloom: which is right? Dr. Hogg says Gros Maroc is frequently confounded with Gros Damas, but this latter is not otherwise mentioned in the *Fruit Manual.*



Fig. 71.—Specimen plant of Erica æmula. (see p. 396.)

DITTANY.

This name, which is a corruption of the Greek word Dictamnum, or Dictamum, as it is also written, is derived from Dicte, the name of a mountain in Crete, upon which, in common with Mount Ida in the same island, the plant is found. The English name, Dittany, has been variously applied by botanical writers, but belongs by a most ancient right to one of the species of Origanum (Amaracus of some authors) not very common in cultivation. It is more commonly represented in modern gardens by a closely allied species, known as "pink Hops," from the likeness of the flower-head to a Hop in shape. The nurseryman's name for the latter plant is Origanum pulchellum, but it answers to the description of O. Tournefortii, which I think is its more correct name. It is easily grown, and quite hardy, and is a pretty plant for rockeries, flowering freely at the end of summer and through autumn. The true Dittany (O. dictamnus) is a more tender plant), being liable to die either from drought, or wet, or cold; it is, therefore, less frequently seen. It is well figured and described in Curtis' *Bot. Mag.*, tab. 298, though the variegated appearance of the leaves so conspicuous in that plate is due, not to difference of colour, but to an irregular arrangement of the wool with which the leaves are enveloped. The thickness of this wool, and the dwarfer and more compact growth of the plant, form its most obvious distinctions from O. Tournefortii.

Dittany derives its chief interest from the miraculous healing powers attributed to it by the ancients, which are frequently mentioned by the classical writers both of Greece and Rome. It may be said in passing that our plant has nothing to do either botanically or historically with the Fraxinella of gardens, a plant un-

noticed in ancient times, but to which the generic name of Dictamnus has somehow become applied. The Cretan Dittany, however, is accurately described by Theophrastus, a Greek philosopher, who wrote 300 years before the Christian era; and the recent researches of Sibthorp, Höcks, and others, leave no doubt as to the identity of the plant. Theophrastus in the ninth book of his *History of Plants*, says "The Dictamnum is peculiar to Crete, and has wonderful medicinal power in many ways. The plant is rare, for the district in which it grows is of very limited extent, and is much frequented by goats, which delight in it. It is said to be quite true that, if a goat is shot with an arrow, when it eats this plant the arrow falls out," &c. The medicinal virtues deteriorate if the plant is grown in fertile soil, as it naturally prefers rocky ground. Cicero in the second book *On the Nature of the Gods*, tells the same as Theophrastus about the Dictamnus—that when wild goats in Crete are wounded with poisoned arrows, they search for the plant and eat it, upon which the arrow falls out. But the most celebrated passage in the ancient classics about the Dictamnus is in the twelfth book of the *Æneid* of Virgil, whose beautiful poetry has certainly done more to immortalise the plant and to make it a favourite with us than any merits of its own. The following is an outline of the story, the metrical portions being from Professor Conington's translation:—

Just at the crisis of the great battle which was to decide the fate of Italy Æneas, at the head of his men, was wounded by an arrow from an unknown hand. The shaft broke off, leaving the head buried. He was taken to his tent. The aged surgeon—

> "In vain with hand and pincer tries
> To loose the stubborn steel,"

but his mother, Venus, invisible to mortal eye, came to the rescue, and—

> "Plucks Dittany, a simple rare,
> From Ida's summit brown,
> With flower of purple, bright and fair,
> And leaf of softest down:
> Well known that plant to mountain goat,
> Should arrow pierce its shaggy coat;
> She drops it where, in shining ewer,
> The crystal water stood;
> So with the medicated flood
> The sage unknowing stanched the blood;
> Now at a touch, no violence used,
> Drops out the barbëd dart,"

and the hero at once rushed back to the fight, and completed the victory.

Pliny the elder, writing of the Dictamnus, only repeats in Latin what Theophrastus had said nearly four centuries before him in Greek. It remains to speak of two or three notices of the plant by the earlier English writers on botany. Turner, who wrote the earliest English *Herbal* or *History of Plants*, printed in 1568, says of Dittany of Crete:—"I have sene it growynge in England in Maister Riche's gardin naturally, but it groweth nowhere ellis that I know of saving only in Candy." Gerard figures the plant under the name of Dictamnum creticum (Dittanie of Candie, p. 651, edition A.D. 1597). He tells us that it grew in his garden, where it flowered and bore seed, "though Dioscorides writeth that it beareth neither." He gives the passage from Virgil in homely English verse, and tells us, amongst "the vertues" of the plant, "It prevaileth much against all wounds, and especially those made with invenomed weapons, arrowes shot out of guns, or such like; it draweth forth also splinter of wood or bones." The Dittany of Crete is neither figured nor described by Parkinson, though he tells us that the Fraxinella, which he calls Bastard Dittany, is a far different plant from Dictamnus creticus. Linnæus, who appears to have been rightly satisfied of its identity with the classical Dictamnus, gave the plant the name it still bears of Origanum dictamnus. Fifty years ago it was separated from Origanum with the generic name of Amaracus. This name is no longer admitted in the *Genera Plantarum*. It is hardly likely that Virgil would have applied two names so distinct to the same Cretan Dittany, however suitable the soft downy leaves of the latter may have been for the bed in Cyprus, to which Venus carried her grandson Julus through the air, and laid him, without waking,

> "Where soft Amaracus receives,
> And gently curtains him withe leaves."

C. Wolley Dod, Edge Hall, Malpas, Cheshire.

THE WHEAT CROP OF 1884.

UP to the end of June there was every prospect of a very abundant Wheat crop. The seed time was all that could be desired, and the winter was unusually mild; the rainfall of every month from the end of January to the end of June was much below the average, and the blooming of the Wheat had taken place during favourable weather. Many farmers, in walking round their fields at the time I mention, must have felt that nothing now was wanting but a continuance of the favourable weather through July to furnish an abundant harvest.

The rainfall in July was not excessive, and if the whole amount of the rain that actually fell had expended itself in the course of three or four days it would have done no harm. At Rothamsted rain fell on eighteen days during the month, accompanied in some cases with great storms of wind. I have rarely seen the Wheat so completely prostrate, and in many of our fields it could not have been laid more flat on the ground even by means of a heavy roller. During the two or three weeks in which the Wheat was lying upon the hot, damp soil it suffered considerably from mildew, and many of the ears turned quite black. Fortunately the harvest month was brilliantly fine, and the crops were secured in the best possible condition.

We have now arrived at the forty-first season of our continuous Wheat crop. The following table gives the produce of the same selected plots which, for the last twenty-one years, we have employed for the purpose of estimating the yield of the crop of the country.

Harvests.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures. Plot 7.	Plot 8.	Plot 9.	Mean of Plots 7, 8, 9.	Mean of Plots 3, 2, and 7, 8, 9.
Bushels of Dressed Corn Per Acre.							
Present Year, 1884	13	32½	38⅜	43¼	40½	40¾	28¾*
Average 10 years, 1874-83	10⅛	29¾	29	32⅞	34⅝	32⅛	24⅛†
Average 22 years, 1852-73	14¼	35⅜	34½	37¾	37	36½	28¾‡
Average 32 years, 1852-83	13⅛	33½	32¾	36⅛	36¼	35	27¼§
Weight per Bushel of Dressed Corn in Pounds.							
Present Year, 1884	62⅛	62¾	62⅛	62½	62⅛	62¼	62⅜
Average 10 years, 1874-83	58¼	60⅛	60	59¾	59¼	59⅝	59¼
Average 22 years, 1852-73	57⅝	60	59¾	59	58⅜	58⅞	58⅞
Average 32 years, 1852-83	57¼	60	59½	59¼	58¾	59⅜	59
Total Straw, Chaff, &c., per Acre in Cwts.							
Present Year, 1884	8⅛	30⅜	36½	46½	43¼	42⅛	26⅞
Average 10 years, 1874-83	8⅝	28⅝	31⅞	39⅞	41⅝	37¾	25
Average 22 years, 1852-73	12⅝	33⅛	34½	40¾	42	39⅛	28⅛
Average 32 years, 1852-83	11⅜	31⅞	33⅝	40½	41⅞	38⅝	27¼

The general character of the crop resembles that of last year, while the mean of the three artificially manured plots is exactly the same, in both cases the amount being 40¾ bushels per acre. The yield of the plot which receives farmyard dung, however, is nearly 3 bushels less than it was last year, being 32½ bushels per acre, instead of 35¼ bushels per acre. As this crop was not much laid I fear it indicates that the damp weather in July affected even the standing corn, and that generally throughout the country the results of the threshing-machine will de disappointing.

The mean results of the figures give an average yield of 28¾ bushels per acre, weighing 62⅜ lb. per bushel, equal to 29⅜ bushels of 61 lb. This is 6 bushels in excess of the average of the same plots taken over the last ten years, and rather less than 2 bushels in excess of the average of twenty-two years. The present year's crop, therefore, may be considered to be more than an average, but yet not a great crop.

The area under Wheat in the United Kingdom for the present year, as given in the agricultural returns, is 2,745,485 acres. Calculating the yield at 29⅜ bushels per acre, and deducting 2¼ bushels per acre for seed, we have an available produce of 9,308,910 quarters. The estimated number of people to be fed during the year from September 1, 1884, to August 31, 1885, is slightly over 36¼ millions. Upon an average consumption of 5.65 bushels per head, our requirements will amount to 25,628,697 quarters, of which our own crop will furnish 9⅛ millions, leaving 16½ millions to be imported from foreign countries.

The imports of foreign Wheat—less exports—into the United Kingdom for the harvest year of 1883—1884 amounted to 15,815,878 quarters; while the requirements, based upon the yield of my own crop last year, amounted 15,771,285. The actual imports, therefore, agree almost exactly with the calculated requirement; but this accuracy is apparent rather than real. The stock of foreign Wheat in the warehouses on September 1, 1883, was known to be enormous, and this stock has probably been reduced. The low price of Wheat during the past year has also caused a larger proportion of home-grown Wheat to be consumed by stock, and the still lower prices which are likely to prevail during the coming year will tend to increase this consumption.

The imports of foreign Wheat during each year do not, therefore, at the present time supply so reliable a measure of the annual requirements as was the case formerly, when the stocks of foreign Wheat had not assumed such gigantic proportions. *J. B. Lawes, Rothamsted, September 22.*

* Equal to 29⅛ bushels, at 61 lb. per bushel.
† Equal to 23⅞ bushels, at 61 lb. per bushel.
‡ Equal to 27¾ bushels, at 61 lb. per bushel.
§ Equal to 26⅛ bushels, at 61 lb. per bushel.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF ARALIAS (GREENHOUSE VARIETIES).—The present is the best time for obtaining or increasing a stock of these elegant plants, and it would be a good plan for the gardener to select a few good varieties and make a general batch of cuttings and grafts. The plants treated below are greenhouse varieties, and will, as a rule, meet the requirements of the gardener.

Aralia papyrifera is a variety the graceful and ornamental foliage and tropical appearance of which makes it a prominent object of attraction, especially when grown in large masses, and it is largely used not only in the gardens and parks of this country but also on the Continent. With regard to its propagation, it can be most freely increased from the roots, which are best obtained when the plants are lifted in the autumn to be potted up for the winter. The roots should be cut up into 2-inch lengths, which should be dibbled into pans or pots, taking care to place the root-cuttings an inch apart, and to make the tops of them level with the surface of the soil. The holes made by dibbling can be filled up with dry sand. After well watering them place in a warm house upon a gentle bottom-heat, where they should be kept moderately watered. When the growths the cuttings have started are 2 inches high they must be potted each into a small 60-sized pot, watered and replaced upon the bottom-heat, and here they must remain until they have filled their pots with roots; they can then be potted into large 48's, and replaced upon the bottom-heat until they are well rooted in these pots, when they can be gently hardened off and moved to a cooler house, and, if necessary, they can be placed in larger pots. Soil composed as follows is best suited for the root-cuttings:—One half loam, one-third peat, and one-fourth sand. To every bushel of this soil add a 48-potful of finely broken potsherds or ballast, mix the whole well together, and sift through a ½-inch sieve. The old plants should be grown upon a cold bottom in the intermediate-house, and care should be taken never to syringe them overhead while they are making young growths because it will cramp these, and thus disfigure the plant when it has developed itself.

Oreopanax dactylifolius, or Aralia dactylifolia.—As this is a very strong growing variety it is necessary to keep what are called "stock plants." One or more plants should be set aside and cut back occasionally so as to weaken the growths, and thus render them more suitable for cuttings. A few stock plants of any valuable variety, when kept in this way, although unsightly, are very useful, and are always producing cuttings which saves the young stock. In the selection of cuttings the weakest growths, but ripe wood, should be taken. Each piece should have

from three to five leaves attached, and should be cut off at the bottom with a sharp knife. Place firmly in a thumb-pot, with a small stick to which the main stem of the cutting should be firmly tied, and each leaf should be looped up. Water the cuttings, and place in a frame or case, on a gentle bottom-heat. They should not be allowed to become dry; ventilation should be given for an hour, night and morning, and they should be shaded from the hot rays of the sun. When the cuttings have rooted they should be stood for a few days upon the open bottom-heat outside the case, for the purpose of hardening them. At the end of that time they can be potted into large 60's, and replaced upon the bottom-heat, where they must remain until they are well rooted; they can then be potted into large 48's, and moved on to a cold bottom.

Oreopanax (*Aralia*) *platanifolia*.—As this is a vigorous growing plant the weakest growths should be selected for cuttings. The wood of these should be quite ripe, and the growth well finished up. If the cutting is what is called strong, pieces with two leaves should be taken, but weak growths should have from three to five leaves attached. Place each cutting firmly into a pot, and tie to a stick. Water them and place in a cutting frame, where they will receive the same attention as given above.

Aralia quinquefolia.—This plant combines a very free growth and hardy constitution, with an ornamental and elegant appearance, which renders it a very useful plant for the conservatory. The propagation of it can be conducted in the manner given above, but the soil best suited for the old plants is a mixture of one-half turfy loam, one-third peat, and one-quarter river sand.

A. heteromorpha, *A. trifoliata*, *A. crassifolia*, &c., will do well as directed for the last-named variety. *T. O.*

Plants and their Culture.

GREENHOUSE PLANTS.—The splendid weather of the past few weeks has been most favourable to the entire collection of these plants, whether they be of the soft-wooded or of the Cape and New Holland hard-wooded sections; both alike should have been benefited by the sunny weather of late. The growths will be now thoroughly ripened, and so be more fit to go through our changeable winter weather, and give the promise of a good bloom at their proper season if the plants are in good health and vigour. Though many of these plants will not yield any great display for some months to come it is still satisfactory to be able to look forward with the hope of a good return when the time arrives, pleasant anticipations being equally as enjoyable to the practical cultivator as the realisation itself. We cannot look forward to a long continuation of this favourable weather, and in order to be on the safe side there should be no delay in storing all the stock that is standing out-of-doors. This annual routine of work often requires no small amount of contriving and ingenuity in order to give to every section its suitable position.

Overcrowding of the stock is frequently a necessary evil where the glass space at command is inadequate to the requirements. A little later on, as any fruit-houses become liberated of their crops and pruning operations are performed, matters will be made easier in this respect. The advice before given needs again to be repeated in regard to the clearing away of useless or unhealthy stock. By close observance the former can soon be regulated to the given requirements of each case, but the latter needs to be dealt with in a decisive manner; where there is no prospect of bringing plants that are in an unhealthy state into a thriving one, the better way will be to consign them to the rubbish-heap at once, and take in hand young stock that will soon grow into more creditable specimens than the sickly ones. Duplicates of any given kind should not be allowed in the specimen state, unless it be in the case of plants grown for forcing purposes, and thus worked into flower in successive stages; we, however, advise every one, if possible, to have young stock coming on to succeed the larger ones: these latter, when overgrown, can frequently be turned to a good account in a business manner.

Before the plants are taken into their winter quarters the houses should have a thorough cleansing, washing the glass on both sides, for the admission of the greatest amount of light during the winter. Look also to any repairs that may be needed to the heating apparatus, so as to avoid as far as possible any breakdown when in active use. If the roofs have been covered, or partially so, with climbing plants, those should be thinned out somewhat, at least such as are past their best, sparing such only as are likely to give a good return at an early date, and those kinds which do not greatly obstruct the entry of light and air, such as the Lapagerias. Overhaul all the plants as they are brought in, washing the pots, looking to the drainage, and keeping a close watch after any insect pests. In regard to the latter, it may be stated that some plants which are known to withstand a few degrees of frost will be benefited by this exposure, to rid them of their enemies; others will need fumigation, and some a strong solution of insecticide to be effectual. In arranging the plants some judgment will be needed to suit each case; the more tender genera should be placed where they are the less exposed to cold winds; others that thrive best in a damp place should have their requirements studied also. Elevate freely any plants that are likely to become drawn, and bring them as near to the glass as possible. Avoid standing two large plants in close proximity to each other, but rather arrange a smaller one between such, to secure a better circulation of air around every plant. Give abundant ventilation on all favourable occasions; do not close at night for some time to come, unless a touch of frost is apprehended. The plants will not in this manner feel any perceptible change in their transition from the open air to that of the greenhouse or pit, as the case may be. If any heavy rainfall should intervene before the plants are brought under cover, be cautious in the use of the water-pot for a time. In the case of Indian Azaleas and Rhododendrons less water than usual will tend to secure the development of bloom-buds, whereas an overplus may excite the plants to push lateral growths at the base of the bud, to the weakening of the latter, or to cause it eventually to turn blind in the case of vigorous growing varieties. If pressed for time for a few weeks to come any training operations can be deferred for a more favourable opportunity.

COLD PITS, &C.—These will still accommodate many plants; in fact, unless the weather be very severe, herbaceous Calceolarias can be easily wintered in such places with advantage to the plants, Cinerarias also may remain in them for a time longer, by using caution against injury from overcrowding or moisture. Primulas will soon need removal to an airy shelf in one of the cool houses, or to a heated pit. Pay attention to the small stock of these for late spring blooming. Cyclamen will do very well with the same treatment as that suited to the Primulas. Solanums that are grown for the sake of their berries are with us all lifted and potted up, though still standing in a shaded spot in the open air. They are berried better this season than we have ever had them; having gone over them and pinched back all shoots close to the last promising berry, they now show off their crops to advantage. Roses in pots that need a shift had better be seen to at once; overpotting, however, should be avoided, better results being invariably obtained by occasional top-dressing and feeding well when in active growth. When potting is contemplated—which in every case is necessary at some time or the other—reducing the ball may be practised in nearly every case should the plant have reached its allotted size. All additions to the stock of hardy Rhododendrons and Azaleas, Kalmias and Andromedas, Lilacs and Deutzias should be made without delay, and the pots plunged in ashes after being once well watered. *James Hudson*, *Gunnersbury House Garden*.

Fruits Under Glass.

PINES.—If the plants have been prepared to endure the sun, as was advised in our last notes, shading should now be discontinued; the sun's rays having become enfeebled full exposure to them will be of service in assisting, with the use of free but careful ventilation, to mature the growth as soon as possible before the dull days begin. It is very important that this maturation should take place, in order that the plants may pass through the winter well; and in the case of early fruiters, that their progress may be rapid when they are started in the new year, else there will be a risk of their failing to fruit until a fresh growth has been made, and a number may not fruit at all. Successional plants that were potted in February and later are still growing freely; those, however, that are intended for early fruiting must be brought to a state of rest early in the coming month, when they should have a temperature of 60° at night, and be guarded from excitement. Fruiting plants out of blossom should have every inducement to swell their fruits rapidly and well, for which purpose a brisk temperature and moderately moist atmosphere must be maintained, the humidity being promoted by the plants being damped between at closing time, and the pathways more or less frequently as is found requisite. Evaporating pans are beneficial for this purpose in large houses, but we found them unnecessary, in fact we can succeed best without them, in our low structures having sunken pathways, with the beds in which the plants are plunged on a level with the surrounding ground—a kind of house well adapted for Pine culture. Overhead syringings should be now discontinued, the watering executed as formerly recommended, and the fire-heat be so regulated that the pipes are kept warm through the day, and heated at night sufficiently to prevent the temperature declining below 70°. Suckers being fairly well rooted should have such treatment as will keep them compact and robust, to secure this they should be kept at present moving gently in a night temperature of 65°, with a slight rise in warmth by day, while air should be freely given without subjecting them to a chill; their balls of soil then should be preserved in a healthy condition, by a discreet use of the water-pot and syringe, care being taken that the tops of the plants are not wetted.

STRAWBERRIES.—It is some years since we had such a favourable time for Strawberry plants in pots as we have had this season. No further proof of this is wanted than in the bold ripened crowns, which are better than we remember having them for some years, although there has been no change in the treatment; the unusual excellence must therefore be attributed to the weather, the continuance of which it is to be desired should extend to the end of the ensuing month so that the crowns may be efficiently matured. In such a case forcing may commence early, and, if properly conducted, with a certainty of success. Plants that were potted early have now filled their pots with roots, and will require attention in watering, those that are weak should be assisted with liquid manure, of which nothing is better than that from sheep's droppings, which should be used in a clear state, while such plants as are strong and have rooted through their pots should be lifted occasionally so as to check the roots penetrating the bed of ashes. As a preventative to this evil it is a good plan to place a piece of slate under each pot. Where the plants have been arranged closely more space must be given before the plants are injured. This will be the more needful when the present fine weather gives place to that which is dull and wet. Plants of Vicomtesse Héricart de Thury and other suitable varieties that were kept after being forced for autumn fruiting would now be benefited if moved under glass; those that have set their fruits should be placed in a structure where they can have the assistance of artificial heat and copious supplies of liquid-manure to swell their fruits; they should be kept clean by being daily syringed in fine weather until the fruit commences to ripen, when a dry air should be afforded them. The present state of the weather is very suitable for plants in bloom; they should, however, be placed in a cool pit well up to the glass, and be liberally ventilated until the fruit is set, when they can be pushed forward or kept back as may be required.

VINES.—Ripe Grapes are keeping well this season, for it is quite an exception to see a decayed berry on any variety; but the continued dry state of the air cannot be expected to prevail much longer, so that means of coping with damp weather should be considered. That which aids the good keeping of Grapes most is a dry moving atmosphere, and a properly regulated temperature; for the latter no fixed figures should be adhered to, it should rather vary with the weather, the aim being to keep that inside a few degrees above the outside so as to prevent condensation of moisture on the benches; the former should not however be allowed to fall below 50°. With regard to the atmosphere being kept dry and circulating, the latter state can be attained by keeping both the front and back ventilators much or little opened at all times, but exception to this rule must be made on days when the weather is wet or foggy, when they should be all kept shut. The fire-heat will do much in expelling moisture, but the correct course to follow is as far as possible to prevent it; for this end all leaves should be gathered as they fall, and no plant requiring water should be kept in the houses, internal borders, in order to keep the Vines healthy, must be watered when necessary, but evaporation can in a great measure be counteracted by some non-conducting material, such as dry, short litter being placed over the surface of the border, which should be removed each time the borders are watered and replaced again immediately after. In the consumption of Grapes it is wise to use up all bad keepers first; of black kinds the Hamburgh is at the present time most generally consumed, and may be followed by Alicantes, which are in season from November to January, while Alnwick Seedling and Lady Downe's Seedling are invaluable to come in after them in succession, the latter excelling all others in point of keeping, and for this reason there is every probability of its remaining popular. Of whites, the Muscat of Alexandria eclipses other sorts both in flavour and good keeping qualities. If the wood of newly-planted Vines is matured firing should be discontinued; on the other hand, if still unripe, a warm temperature and circulating air should be upheld until their foliage commences to fall. *Thomas Coomber*, *The Hendre Gardens*, *Monmouth*.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Sept. 29	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Sept. 30	Sale of Flowering and Established Orchids, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 1	Sale of Dutch Bulbs, at Stevens' Rooms; also Imported Orchids.
THURSDAY,	Oct. 2	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms Sale of Imported and Established Orchids, at Stevens' Rooms
FRIDAY,	Oct. 3	Sale of Imported and Established Orchids, at Protheroe & Morris.
SATURDAY,	Oct. 4	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms.

AT a ripe old age, respected and honoured by all who knew him, died, on the 21st inst., ISAAC ANDERSON-HENRY, of Hay Lodge, Trinity, Edinburgh. For the last few years Mr. HENRY has been in failing health, which necessitated his passing the last winter in the south of France. On his return he seemed better till an attack of paralysis ensued in July last, and now comes the end. He was born in Perthshire about the beginning of the century, of an old family which held their possessions for several centuries on payment to the Crown of a white Rose at Midsummer. The name HENRY was assumed in later years in consequence of some inheritance which necessitated the addition. He was educated for the law, and indeed practised it, devoting his leisure time to the pursuit of horticulture, and, when circumstances at length permitted it, giving up his whole time to it. Mr. HENRY was by no means an ordinary gardener, satisfied to grow what came before him. His ambition soared higher, and he speedily became known for the numerous and valuable introductions which his acquaintance with the late Professor JAMESON, of Quito, and other friends, enabled him to make. A list of a few of the more remarkable plants introduced by him was given in our columns in 1873, when we published a portrait of the deceased gentleman, but since that time many others have been added to the list.

It is, however, as an experimentalist in grafting and hybridisation that he will be longest known. Writing to ourselves, when we were urging upon those who had the requisite time and opportunity, he remarked, "You are doing good work in directing attention to this matter. There are now so many intelligent men—men of great natural power for observation in the practical field of botanical science, that never were such efforts better timed for sounding the tocsin and calling your forces into action. A rich harvest awaits them. Too long have they been satisfied with theories. This is the time to put these to the test of experiment, and no longer leave to the overtaxed energies of one, though the CORYPHÆUS of the whole science, to work out his own laws by the severe drudgery of manual experiment, all may now see their way to aid him by the light which DARWIN has shed on so many of Nature's darkest bye-paths. And let no one be discouraged because he has done so much; there is plenty yet to do—victories still to be won."

In this spirit did ANDERSON-HENRY work. He began his work as a hybridiser about 1840. In his paper on "Hybridisation" before the Botanic Society of Edinburgh (reported in our volume for 1867) Mr. HENRY tells us of his early aspirations, his many failures, and his successes; how he hoped to cross the Bramble with the Raspberry; how he endeavoured to raise a blue Dahlia. With Rhododendrons he was more successful, as the numerous hybrids raised by him prove; and, although he was often baulked in his attempts to cross flowers even of close affinity, yet he succeeded in ascertaining many important facts, such, for instance, as the effect of climate and season on the process. Hybridisation, he found, could readily be effected at some times, while at others no results followed experiments on the same plants. Moreover, he discovered that he could obtain successful results by making use of the pollen from short stamens of Rhododendrons, when that from the long was ineffective. Among the most successful of his hybrid progeny was the well known Veronica Andersoni ×, and his experiments with this genus are of great importance with reference to the question of the degree of fertility of hybrids, and serve to establish the fact that hybrids are not necessarily more infertile than what are called pure species—a point strongly insisted on by Mr. MEEHAN in a contribution, part of which is published in another column. Mr. HENRY'S observations brought out some critical remarks from another veteran experimentalist, Mr. RIVERS (*Gardeners' Chronicle*, 1867, p. 516), which also form a valuable contribution to the subject. In a second paper, also addressed to the Botanical Society of Edinburgh (*Gardeners' Chronicle*, 1867, p. 1296), Mr. HENRY gives details as to the best method of practically effecting hybridisation which should be carefully studied by all experimenters; indeed the whole paper is so full of practical suggestions and important results, that it would be almost useless for us to allude at greater length to special portions of it. We commend it once again to the notice of our readers, satisfied that it will be considered as a fitting memorial of a practical horticulturist of the foremost rank.

THE distribution of AWARDS at the FORESTRY EXHIBITION has, we regret to see, given the utmost dissatisfaction, not only in the special case to which attention was called last week, but also throughout other classes. An indignation meeting was held on Monday last in Edinburgh, under the presidency of Mr. BROWN, of a leading Edinburgh furnishing firm, when some very forcible language was made use of, and it was asserted that some firms had received awards for goods they had never had in the Exhibition. The unfortunate jurors are declared either to have been incompetent, or "traitors to the well-being of their country." Such language as this must surely have emanated from a feeling of irritation rather than of calm judgment. Be this as it may, the following resolution, proposed by Mr. E. TAYLOR, of Sheffield, and seconded by Mr. W. TIMMS, of SELIG, SONNENTHAL & Co., was passed unanimously :—

"That this meeting, seeing the glaring inconsistencies of the awards as published, we consider, as practical men, that such adjudications cannot have emanated from competent jurors, who should have been appointed under Rule 11 of the regulations, or otherwise that their original decision must have been altered after being submitted to the Executive Committee; we therefore demand that a committee, appointed from this meeting, have access to the original reports of the jurors."

Mr. JOHN HESLOP, of the firm JOHN HESLOP & SON, Edinburgh, moved :—

"That this meeting considers that the Exhibition has not been satisfactorily managed by the Executive Committee, and that, as the interests of the exhibitors have been habitually and superciliously ignored by the officials, we hereby resolve to remove our exhibits on October 1, unless such explanations and concessions are made as may be deemed satisfactory by the committee to be appointed at this meeting."

This also was carried, and after some very stringent comments had been passed on the want of courtesy on the part of the officials towards the exhibitors, a committee was formed to carry out the foregoing resolutions.

We cannot pretend to offer an opinion on this matter, but seeing that the judges included many of the most competent and honourable men in the country, we can but suspect that the miscarriage of justice, if such there be, is rather to be attributable to defective organisation on the part of the committee than to incompetence, or treachery, on the part of jurors.

—— THE LATE MR. BENTHAM.—We learn that, under the will of the late eminent botanist, the sum of £1000 has been bequeathed to the Linnean Society, a similar sum to the Scientific Relief Fund of the Royal Society, and a considerable residual sum, in trust, for the promotion of botanical research, the trustees being Sir JOSEPH HOOKER, Professor OLIVER, and Mr. W. T. THISELTON DYER.

—— CHRYSANTHEMUM SHOW AT HULL.—From our advertising columns it will be seen that an important show of this popular autumn flower will be held in Hull. The prizes are liberal. The Chairman is Mr. GEORGE BOHN, the son of the late H. G. BOHN, so well known in horticultural circles.

—— AMSTERDAM AGRICULTURAL EXHIBITION.—The following awards have been made to Messrs CARTER & Co. :—A Gold Medal for grasses in growth, a Prize of Honour for Pulse, in Peas, Beans, &c.; and a First Prize of Honour for samples and specimens of grass and Clover seed.

—— THE CORK OAK (QUERCUS SUBER).—Our old friend and contributor, Mr. LEO GRINDON, of Manchester, will esteem it a great kindness if any one who may have the opportunity will send him by post a spray of the Cork Oak, foliage and acorns—a piece 10 or 12 inches in length. Address, LEO GRINDON, 20, Cecil Street, Greenheys, Manchester.

—— THE MIDDLE TEMPLE CHRYSANTHEMUM SHOW, in consequence of the favourable season and the forward state of the plants, will, by permission of the Benchers, take place at least a fortnight earlier than usual, when the gardens will be thrown open to the public.

—— MARRIAGE OF JOSEPH BROOME, ESQ., J.P.—On this interesting occasion, which took place on July 23 last the Council of the Royal Botanical and Horticultural Society of Manchester (of which Mr. BROOME has for many years been the Treasurer) presented him with a very handsome silver Greek bowl on a pedestal bearing the following inscription :—"Presented to JOSEPH BROOME, Esq., J.P., by the Council of the Royal Botanical and Horticultural Society of Manchester on the occasion of his marriage, as a mark of esteem and appreciation of his invaluable services as Treasurer."

—— SARCOSTEMMA BRUNONIANUM.—Horticulturally this is of little value for the general cultivator, because the flowers are too inconspicuously small and undecided in colour; but for lovers of the curious it is interesting in several respects. The pendulous or slightly climbing stems are for all practical purposes leafless, about the thickness of a quill, and succulent, resembling some of the slender Euphorbias, as E. pendula. The pale yellow flowers are fascicled or clustered at intervals along the stems, and open successionally for some considerable time, diffusing around them a very grateful aroma. Another reconcilable point about this Asclepiad is that the milky juice, usually very acrid or poisonous in the majority of plants belonging to the order, is in this case agreeably acid and grateful to the traveller, who uses it to allay thirst. It is said that the natives of India, where it grows in dense masses in the jungles, use it as a salad. If suspended in a dry warm house, as grown in No. 5, at Kew, it will thrive satisfactorily and flower freely without occupying much space. A figure of the species appeared comparatively recently in the *Botanical Magazine*, t. 6002.

—— GARDENING AT RAILWAY STATIONS.—There are few things which mark more forcibly the wide differences existent in the tastes and character of individuals than the appearance present at a few of the railway stations to be met with here and there in the huge network of iron-way that now intersects our island, and in which the station-master or his subordinates, or both combined, evince a taste in gardening, as compared with the desolate slopes present at much the greater number of stations. We hear that the Midland Railway Company is about to take means to encourage amongst their *employés* at the whole of their stations throughout their lines, where decorative gardening is at all practicable, an attempt to make them gay with flowers and shrubs of a suitable description. The great difference in soils and situations throughout this important company's system admits of this station gardening being much

varied; and it is to be hoped that the wide difference that exists between hill and valley, exposed positions, and those that are sheltered, will be taken into account in determining the description of plants used and the character of the gardening adopted, and that there will be an absence of too much repetition. Above all, the baby-house use of shells and whitened stones, that is seen at some railway stations, where otherwise commendable attempts at gardening are now made, should be tabooed. Railway travelling through much of the country is at best dreary, monotonous work, but if the station gardening is well carried out, something will have been done to make it pleasanter. The beautiful Derbyshire scenery through which the Midland Company's line runs, induces many a traveller to give preference to their route northwards, and if their station gardening is well done it will not unlikely have a similar influence.

—— Kœlreuteria paniculata.—If planted in a sheltered place with a bright sunny exposure to ripen the wood, this forms a handsome low tree with a bushy spreading head. It was introduced to this country more than a hundred years ago; but is nevertheless far from common in private establishmments. For the decoration of parks or pleasure grounds it would prove invaluable, and the large beautifully pinnately cut leaves would attain their greatest development where so situated as to be sheltered from the cutting north winds. At a little distance the leaves have the effect of appearing bipinnate on account of the deeply lobed middle leaflets. The foliage therefore is altogether distinct from Rhus typhina, and Ailantus glandulosa frequently planted in similar situations. Several tall flowering specimens are to be seen on the mound near the old rockery at Kew. The flowers are panicled, appearing at the ends of the branches, but being small and greenish-yellow are individually only botanically interesting, though in the mass they are very effective. One of the finest specimens we know is at Arundel Castle. A figure of this, the only known species, is given in the *Botanical Register*, iv., t. 330.

—— Costus igneus.—The leaves of this species have the usual spiral arrangement more or less evident in a great number of the cultivated forms. Some are highly ornamental foliage plants that are most at home in the moist stove; but the most striking feature of C. igneus, however, is the large staminode, called in botanical language the labellum, and constituting the most prominent and conspicuous part of the flower. The limb is large, spreading or reflexed, and nearly orbicular, with a somewhat ragged or irregularly toothed margin, and of a fiery orange colour. The plant does not exceed 12 or 15 inches in height, and the flowers are collected in a short dense spike at the end of the young shoots. It comes from the district of Bahia, in Brazil, and reached Kew last year through the medium of the Compagnie Continentale d'Horticulture, and flowered lately in the stove.

—— Jaffa Oranges.—A recent report on the trade of Jaffa says that Oranges are grown to greater perfection in the Jaffa orchards than they are probably anywhere else, and lately several consignments have been made to Liverpool, where they have found a ready market and realised good prices. The difficulties, however, with which the merchants have to contend in shipping these Oranges to England discourage them greatly from making large exportations because of there being no regular line of steamers running between Jaffa and the United Kingdom, all consignments of Oranges for England must be transshipped either at Alexandria or Smyrna, and this transshipment is found to be not only injurious to the fruit but detrimental to the merchants' interests when they reach the market. If, therefore, any steamship company trafficking between England and Turkey would send a steamer to Jaffa for Oranges once a fortnight during the season, from November 1 to the end of March, after having first shipped a part of its cargo at the northern ports of Syria, and would then sail from Jaffa direct to Liverpool, the merchants would be encouraged to send large quantities of Oranges by any such steamer, because they would be sure the fruit would arrive in England in good condition, and they would save the additional expenses of transhipment at other ports.

—— Galtonia clavata.—Although not to be compared with the stately G. candicans, this plant is as interesting, and even more curiously beautiful. In the older and better known species the flower is bold, straight, pendulous, and pure white, but those forming the subject of this note are somewhat curved, and beautifully marked along the middle of each segment with three green lines that add materially to their distinctness and ornamental value. It is much dwarfer than the other two cultivated species, and in consequence would be more manageable in pots, and



Fig. 72.—View in the Gardens at Oak Lodge, Kensington. (see p. 402.)

less leggy in appearance, when arranged on stages that place the plants on a level with the eye. It is flowering on an open border at Kew, where a rather extensive and mixed collection of Cape bulbs keep up a succession of bloom as each sort makes a vigorous growth or arrives at its proper season. It differs from Hyacinthus, under which it is often classed by the numerous flattened seeds, whereas in Hyacinthus they are few and globose.

—— AMERICAN EXHIBITION.—A new departure in international exhibitions will be made in the year 1886, when an American exhibition is proposed to be opened in London on May 1. Hitherto the United States have not shone to advantage in these displays, but now it is proposed to remedy this. We have no space to mention many of the items in the programme, but the following extracts will give an idea of the scheme :—

"With the co-operation of the Governors of States and of the railway companies it is proposed to arrange the entrance-hall so that the European visitor shall take leave of his native soil and shall temporarily be in, and commence his visit to North America from the harbour of New York, with the Bartholdi statue of Liberty, and other striking features of the eastern entry to the United States around him.

"On leaving 'New York Harbour' the visitor's first excursion will be through the various States across the continent to San Francisco—from the Atlantic to the Pacific seaboards. He will pass collections illustrating the wealth and civilisation of the several States from east to west, from north to south.

"The railway routes and the picturesquely diversified scenery of the agricultural, pastoral, forest and mining states will be illustrated by paintings, plans, and products The resources and characteristic productions of the various parts of the vast territory extending between the Atlantic and Pacific coasts will thus be exposed to view almost as fully as to a tourist passing through the country, and with greater facilities of comparison.

"This 'Trip across the American continent' will doubtless, be one of the most instructive and popular features of the Exhibition.

"Interest in the American Exhibition is still further increased by the fact that it has been decided to open a Colonial Exhibition in London in 1886, so that there will be a friendly rivalry on the part of Australia, Canada, and India with the United States.

"The Department of Agriculture is expected to show examples of the Maize, Wheat, and Cotton, the flocks and herds of the great Republic, and of the methods employed for raising and improving them. The trappers art in the wilder regions of the continent will be illustrated, and the Society of American Taxidermists will be invited to contribute a large group of birds with brilliant plumage, of mammals, from the grizzly bear of the Rocky Mountains downwards, and reptiles; while in another department the visitor may learn the taste of canvas-back duck and terrapin soup.

"The principal phases of American life will be represented in the Exhibition, from a broker's office in Wall Street to the camp fires of Nevada. A Californian wine shop, Florida fruit stores, Indian canoe-makers and matweavers, ice drink pavilions and bars, restaurants, with the products of the Eastern and Pacific coast, the Northern and the Southern States, characteristically prepared and served by white and coloured male and female cooks and waiters, will help to mark the peculiarities and variety of American social development. There will be a Press pavilion, an Atlantic Cable office, an electrical elevated railway, and reproductions of the façades and interiors of remarkable hotels and public buildings."

—— ESSEX FIELD CLUB.—We are requested to announce that the fifth annual cryptogamic and botanical meeting of the Essex Field Club will be held on October 3 and 4 in Epping Forest. The meeting will be under the direction of Dr. M. C. COOKE, Mr. WORTHINGTON SMITH, Rev. CANON DU PORT, Rev. J. M. CROMBIE, Professor BOULGER, Mr. DAVID HOUSTON, Mr. F. J. HANBURY, Dr. WHARTON, Mr. B. W. REEVES, Mr. E. M. HOLMES, Mr. HENRY GROVES, and other well-known botanists. Those wishing to attend the meeting should apply for programmes, &c., to the Honorary Secretary, Buckhurst Hill, Essex.

—— MR. GRAHAM'S ORCHIDS.—Special interest attached to the sale of the "DUNLOP" Orchids at STEVENS' on Thursday last, not only on account of their excellent condition, but because, by direction of the deceased gentleman, the Orchids in question passed into the possession of his gardener, Mr. KEMP. Some of the specimens were unusually fine, and all were in good health. A splendid mass of Cattleya intermedia sold for 31 gs. A grand plant of Vanda suavis (VEITCH'S variety), at least 7 feet high, growing in a tub 2 feet high, fetched 30 gs. There were other specimen Vandas, in splendid health, but too big for most people's Orchid-houses.

—— EXTRAORDINARY CROP OF POTATOS. — During last spring Mr. R. CLEAVER, seedsman, Bore Street, Lichfield, exhibited for sale a new Potato named Dakato Red, the price of the same being 7*s.* per pound, the tubers varying in size from 1 to 1½ lb. weight each. Mr. E. BARRANCE, Trent Valley Nursery, on April 30 last purchased one of these large tubers, the weight of which was just 1 lb. Determined to see what might be obtained from one tuber, he with great care cut and planted it, and lately he has had them got up and weighed. It seems almost incredible, but the crop weighs 342½ lb.

—— MASDEVALLIAS AT AN AUCTION SALE. — Some of the finest plants of Masdevallia Harryana in variety ever seen were offered for sale at Messrs. PROTHEROE & MORRIS' Rooms on the 16th inst. The competition to obtain the plants was the keenest that has been witnessed at any Orchid sale for some years, many of the varieties realising from 5 to 6 guineas each, and the whole importation nearly £400.

—— DISSOLUTION OF PARTNERSHIP. — We are requested to state that Mr. R. S. DUNBAR, late of the Thames Bank Iron Company, has taken premises at No. 4x, Upper Thames Street, E.C., and is in a position to execute orders for hot-water boilers, pipes, &c.

—— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Sept. 22, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W. : —The weather was very fine and warm during the greater part of this period (except in the extreme north), but towards its close conditions became unsettled, showery, and colder, while at some of the English stations smart thunderstorms were experienced. The temperature has been above the mean in all districts, the excess varying from 3° in "Scotland, N.," to 5° or 6° in most other parts of Great Britain, and to as much as 7° in "England, S." The maxima which were registered on various dates in Ireland and Scotland, and on the 17th or 18th at almost all the English stations, ranged from 65° in "Scotland, N.," and 70° in "Scotland, E.," to between 81° and 84° over eastern, central, and southern England. The minima were very generally recorded on the 22d, and varied from 41° in "Ireland, N.," to 47° in "England, E.," and to 50° in the "Channel Islands." The Rainfall has been less than the mean in all districts. Bright sunshine has been less prevalent than it was last week in the north, but more so in most other districts, the percentages of possible duration varying from 63 in the "Channel Islands," and 56 in "England, S.," to 21 in "Scotland, E." and 15 in "Scotland, N." Depressions observed :—As the week commenced a large area of high pressure lay over Denmark and Scandinavia, while a depression was moving away north-westwards or northwards over the south of Ireland, producing fresh south-easterly winds in the south-west, and light easterly breezes elsewhere. By the following morning this disturbance had disappeared, the high pressure area in the north-east was breaking up, and an anti-cyclone, which subsequently travelled slowly east-south-eastwards to North Germany, was being formed over Ireland. Towards the close of the week the mercury fell decidedly in the west and north-west, and depressions began to move more north-eastwards outside our north-western coasts, and some subsidiary disturbances in a similar direction over Ireland and England. The wind, which during the passage of the anti-cyclone over our islands was light and variable, consequently became southerly to westerly in direction, and on some parts of our western and northern coasts blew freshly or strongly.

—— GARDENING APPOINTMENTS. — Mr. GEO. SCALES, late Foreman at Hesslewood, has been appointed Gardener to C. E. G. BARNARD, Esq., Cave Castle, Brough, East Yorks.—JAMES DAVIES, late Foreman at the Gardens, Lark Hill, Liverpool, as Gardener to Major DENT, Ainderby Hall, Northallerton.—W. CRANE, late of Quartertown Park, Co. Cork, to be Gardener to J. MULHOLLAND, Esq., M.P., Ballywalter Park, Ballywalter, Co, Down.

OAK LODGE.

THE view, fig. 72, p. 401, illustrates one of the few really interesting residences within the actual boundaries of London, and which is in the hands of a gentleman of taste and judgment in matters horticultural—James McHenry, Esq. There are still some remains of the pleasant rural part of the courtly suburb of Kensington to be found in and around Holland Park, which itself forms a boundary to Oak Lodge, and rather nearer to London. At Camden Hill are some few pretty residences, possessing the much-envied charm of gardens very much exceeding in beauty and size the vaunted "eligible villa garden." The designer of this garden was none other than Mr. Marnock. It was constructed many years since. Judging from the present aspect of the shrubs and trees that are rather liberally planted over it, the kernel of the design was formerly a moated orchard; the moat was widened and a pleasing serpentine outline and course imparted to it, and some of the old orchard trees were spared to add to the spring beauty of the place by their bloom, and all through the seasons by their graceful, pendulous habit. The sort apparently is Glou Morceau —one that flourished on Kensington soil in former times. Within the recollection of the writer there was quite an orchard of these trees not far distant, at Mr. James Salter's Versailles Nursery, a place dear to old Chrysanthemum growers.

The old moated orchard alluded to was on ground somewhat higher than the rest of the lawn, and the escarpment facing inwards towards the house was faced with rockwork of a natural appearance and appropriateness, affording a pleasant contrast in the Ivy and Virginian Creeper-covered masses to the surrounding still water and level lawn. Good-sized masses and groups of Rhododendrons, Yucca gloriosa bedded on Virginian Creeper, a few upright Cupressus, Hollies, and Taxus adpressa, are planted in and amongst the rocks; and rustic vases, some few flower-beds, and a pretty wooden bridge, complete the home picture. Away over the garden boundary are the wooded slopes of Holland House, so entirely rural that by turning the back to the villas in Russell Road, and looking in the opposite direction, it is hard to realise that Charing Cross is not more than 4 miles away. Rooks build in the big Elms, wood pigeons are not rarities, and many songsters find an undisturbed refuge in the trees and coppices hereabouts. The garden has its greenhouse filled with a quantity of gay flowers of the season and preparations made it evident that it would be gay at other times as well. A stove contained Orchids of various easily grown genera—Crotons, Dracænas, Coleus, and the like; but some really fine plants of Indian Azaleas in good health and full of flower-buds are the pride of the place. There are some thriving Peaches in a forcing-house, and an attempt was made to grow Vines in another division, but without much success, the failure being the result of poor soil, and of using blue glass over one half the roof. There is a handsome square conservatory adjoining the house that contained some handsome foliage plants, including a pair of Dicksonia antarctica, of handsome proportions, and an Alsophila australis, that has the promise of being equally fine. Mr. Pilgrim, the recently appointed head gardener, pointed out a capital plant for conservatory use in Begonia ricinifolia, carrying very fine bronzy-brown digitate leaves, and bold spikes of white flowers, borne on stalks 4 feet high.

GLADIOLUS THE BRIDE.

THIS is one of the most useful of all hardy flowers, especially where there is a large demand for white flowers in a cut state, and it would be difficult to name the place where this does not obtain. Many gardeners make a great mistake respecting the hardiness of this Gladiolus, regarding it in the light of the hybrids of gandavensis, and consequently many do not think on ordering or planting it until the spring; indeed, those who understand its requirements can have it in bloom before other members of the fraternity pass their order on to the dealer. I know of several instances where bulbs were ordered last April, and the grower favoured with such, in order to oblige, lifted the bulbs when 9 inches high. These remarks are penned now as a reminder that the time is at hand when the stock should be ordered and arrangements made for its development. Of course white flowers are most

in demand at certain times in many places, and if possible the supply must balance the demand. I may, therefore, mention that if planted in October they will bloom outside during July and August; if kept out of the ground till January or February the season of blooming will be somewhat, although not proportionately, retarded; but it must be borne in mind, especially by growers in the northern or damp districts, that the bulbs have not by this treatment so much chance of ripening off as when planted early. I planted a large batch last October, which are now being lifted; each bulb has doubled, and many tripled themselves, and all are finer than those originally planted. This result has been obtained in moderately light sandy soil, deeply dug, and liberally enriched with rotten stable manure. It may be lifted annually, or allowed to stand for three or four years, by which time a single bulb will have increased so as to form a large dense clump, as it rapidly multiplies itself under anything like favourable conditions.

Its value for pot culture and forcing is indisputable, and is being daily more recognised, yet I am sure one is not very wide of the mark in saying three-fourths of the gardening fraternity are actually unacquainted with it. Nothing is more easily managed in pots. Last October I potted twenty bulbs in 8-in. pots, and placed them in a very cool house—indeed, last season, being very mild, artificial heat was only very rarely applied—then bloomed early in May, continuing till June; other batches put in later kept flowering till those commenced outside, thus a good supply was maintained by a minimum of artificial heat from early in May till the end of August, with of course a good supply of bulbs. I have no doubt if the first potted batch had been gradually forced after growth had commenced, the supply would have commenced six or eight weeks earlier; and presuming one to work again with the carefully ripened, previously forced bulbs, the first lot of flowers might be had still earlier. In the matter of new bulb development it has a decided advantage over many other subjects used for forcing; if the soil in which they are potted is enriched with rotten manure good new bulbs will be produced, which, if properly attended to, by being gradually hardened and finally ripening off by keeping dry in a sunny position, will flower freely the following season. *J. Riches.*

YELLOW-FLOWERED GREEN-HOUSE CLIMBERS.

Of these we do not possess any great number of ornamental varieties and species of greenhouse climbers, those more commonly employed having either some shade of red, white, or blue, as in Bignonia venusta, Tacsonias, Passifloras, Lapageria rosea, Thunbergia Harrisii, Plumbago capensis, Bougainvillea speciosa, Pelargonium, and but few yellow-flowered ones. Among some of the neatest growing of the latter are the Hibbertia dentata and H. perfoliata; these make tolerably rapid growth in pots or tubs, and of course a proportionately stronger one in a border. Their dark green neat foliage peculiarly fits them for walls in the vicinity of windows and doors where rampant growers would be unsuited to the position. They are very abundant bloomers in the months of June, July, and August. The Hibbertias look especially well as coverings for flat surfaces, their salver-like blooms showing up well against the leaves. A mixture of turfy peat, burnt earth, leaf-mould, and loam, in equal proportions, with enough silver sand to give porosity to the whole, grows them well in a tub or pot; but for plants in conservatory borders the leaf-mould should be in a smaller proportion than when grown in pots or tubs. An examination of the plants should take place in March to see that the drainage is in good order, or if the plant requires shifting into a larger one. When it is not necessary to shift the plant, remove the exhausted soil from the surface and sides, and fill up with the above-mentioned compost. The Hibbertias are seldom affected with insects unless greenfly attacks the growth in the spring, and which is easily disposed of by fumigating or washing with tobacco-water. In the Abutilons of recent introduction to gardens are some very pretty hybrids with pure yellow flowers that are well adapted for conservatory decoration, especially as affording capital subjects for clothing pillars, rafters, tie-rods, arcades, and the like, and perhaps less so for walls or flat surfaces generally, the blooms always looking best when seen from below. To grow them of size sufficient to form creepers in such positions the plants require much root-space, be that in a bed or a border. It will be found the best practice to confine the roots in large pots or tubs, shifting when really necessary, or else to make divisions for them in the borders, as they are gross feeders, and would, without these precautions, soon take possession of a great part of a border. The plants require liberal doses of weak manure-water all through the growing season, and abundant supplies of water. The soil found best for them is sound loam, leaf-mould, crushed bones, and moderate drainage, and above all looseness in the soil should be guarded against by ramming it well at shifting. The Bignonias furnish us with a fine yellow climber in B. Chamberlayni—a plant of very rapid growth with ovate acuminate foliage, and large panicles of yellow flowers, that are produced in abundance all through the summer months till late in autumn. B. grandiflora may be included among the yellow-flowered kinds, although the blooms are yellow and crimson. Like all the Bignonias it is a rapid grower, and requires a border of good sound loam, peat, and but little manure of any kind: this border should be under 1½ foot in depth, as broad as possible, and should be well but not too much drained. The roots are about as rampant as are the branches in habit, and require a warm, shallow, porous medium in which to seek their food—a saturated border is death to them. The winter pruning should be similar to that employed on the Vine, and the main permanent shoots must be trained at wide intervals apart.

Cestrum furnishes one good greenhouse plant in C. aurantiacum that is well adapted by the rapidity of its growth to rank as a space-covering subject. The whole of the species being natives of the West India islands and Central America need for their growth an intermediate-house for the hardiest of them, but the one mentioned above will grow quickly and flower abundantly in a greenhouse where the night temperature does not descend below 45°. The plant does best in a border that is not under 2 feet in depth and that is composed of sound loam, crushed bones, and burnt earth, and in which the drainage is good, as thereby the border will enjoy a warm temperature during the resting period, from November to March. The plant requires an abundant supply of water and occasional doses of manure-water, the latter more often after the border has become full of roots. Any neglect in giving water when necessary is always followed by the fall of the leaves on the lower parts of the plant, as occurs with the Chrysanthemum. As a bush standing free in a border the plant is most effective, but it is also a good subject with which to cover a space of wall in a sunny position. *M.*

Notices of Books.

Diseases of Field and Garden Crops. By Worthington G. Smith, F.L.S. (Macmillan & Co. London: 1884.)

Mr. Smith has done well to publish in handy form the substance of his lectures on this subject, given at the request of the officers of the Institute of Agriculture. The author set before him three objects to be steadily kept in view in the preparation of these addresses—"First, the description only of such diseases as are of economic importance; second, the definition of all the phenomena of the diseases in familiar words . . .; and third, the consideration of the best means of preventing the attacks of plant diseases." These resolutions have been very carefully and conscientiously attended to, and when it is added that, with the exception of the attacks of Nematodes, Mr. Smith has kept to vegetable parasites, the reader will not only have an idea of the scope of the work, but will recognise the fact that the author has confined himself to a field in which he has himself worked untiringly. It is quite unnecessary to tell readers of the *Gardeners' Chronicle* that the book is pleasantly written, and that in Mr. Smith's hands it has lost none of its scientific value in this process; but it may be said farther that to practical men it will prove to be of great direct service—as a strong ally in the warfare against disease and of indirect use in supplying a stimulus to independent observations. Besides the large public of practical men who will welcome the book it will be read with great interest and profit by the author's fellow-workers. Mr. Smith, as we all know, has the courage of his opinions, and it may be that in some instances these require all his fearlessness, but (and the present writer speaks from experience of it) the tone of personal kindliness and geniality which never forsakes the author even in the direst moments is eminently worthy of imitation. On such subjects as the Potato disease and the mildew of corn Mr. Smith deals vigorously with those who have disturbed his peace of mind. His views on certain matters which he still believes to be controversial are so well known to the agricultural and horticultural world that we shall not allude to them farther now than to say tha it cannot be other than highly useful to have these opinions of a very competent and much-respected observer so carefully and concisely set forth as they are in this book. The illustrations have all been produced by the author's own hand, and since, as is apparent, he has spared no pains in the execution of the drawings, it is needless to say here how admirable the effect is. Though many will strongly dissent from much that is recorded in it, we have no hesitation in expressing our belief that there is no book on this subject in English which is at once so easily obtainable, and so certain to be serviceable to the farmer and gardener as this one.

—— *A Synopsis of British Mosses.*—Mr. Hobkirk has published a second edition of his useful handbook, which is published by Reeve & Co. The classification has been entirely changed, the author adopting the arrangement proposed by Jaeger. Much assistance has been afforded by Dr. Braithwaite, Mr. Boswell, and other muscologists. The book is severely practical; its merits, therefore, can only be fully tested in the field, but the method and style adopted are excellent for the purpose. Five hundred and seventy-six species in 129 genera are carefully described. The list of abbreviations made use of in the book is far from complete. We can guess at who are meant by "B. and S.," and "R. Br." is decidedly not unfamiliar, but "Mich.," for aught that is said, might be Micheli, or Michaux; "Brid. Timm," may be known to experts, but not to tyros. "W. and M." and "Myr." need explanation. To our thinking, these authors and their works should have been enumerated, so that the student might know where to find the original description of any particular moss. Such information is given in the case of the species treated of by Braithwaite; but when the author has been left to his own resources he has omitted this very essential information. This, and the absence of any index of species and synonyms, constitute the principal defects of the work, but its utility is likely to be so great as to greatly outweigh the inconvenience arising from the omissions in question.

—— *Modern Window Gardening.*—This is a treatise from the prolific pen of Mr. Samuel Wood, and is published by Houlston & Sons. The introductory hints are sensible and to the point, and the lists of plants to be grown in north, south, east, or west aspects respectively seem judiciously compiled. Window gardening occupies considerably less than half the book, the remainder being devoted to the flower and fruit gardens. So long as Mr. Wood confines himself strictly to purely practical matters, such as he knows from his own experience, he is a safe guide, but when he commits himself to botanical statements, descriptions of plants, insects, &c., he becomes a blind guide indeed. To give an illustration. Speaking of American blight, he says it "can scarcely be recognised as an insect, being without distinguishable parts (!), beyond a body that resembles a mass of fibrous cotton. Nevertheless, it is about as bad and slowly destructive a pest as any to be found, and I am inclined to think it arises from infusoria (!!), which find their way upwards from the root through the channels of the bark and wood while so small as to commingle with the sap. Infusoria, I should explain, are microscopic larvæ capable of mixing with water unseen by the naked eye, being, in fact, of the same degree of texture as fluids, and such as can be assimilated into the same body with the juices the plant absorbs from the soil"—and so on. It is such statements as these that make teachers and editors throw up their hands in despair at the thought that their

labour has been in vain. There is really no excuse for publishing such absurdity now-a-days.

—— *Yarrell's British Birds.*—The last part of the fourth edition, published by Mr. Van Voorst, is devoted to the Auks, Gannetts, Puffins, and allied birds. The illustrations are excellent, and the text, always in high repute, has been brought down to date.

AMERICAN RASPBERRIES.

THE Station Horticulturist, Mr. E. S. Goff, has taken great interest in the Raspberry, and the following results of our trials will be read with interest.

In the year 1882, two plants each of thirty-two varieties of Raspberry were planted out in the station garden. The plants were set out in rows, 6 feet apart, and 3 feet apart in the rows. No winter protection has been given. The soil has been cultivated sufficiently to keep down weeds, and the canes were tied to stakes as they became sufficiently tall to require support.

All of these plants have survived thus far, except five, viz., two Brinkle's Orange, which were winter-killed the first winter after setting, two American Blackcap, and one Prosser. The remainder of the plants have borne their first full crop the present season. We have kept a careful record of the date at which each variety commenced to ripen its fruit, the number of days that each continued in bearing, and the total yield of each; taking notes also as to the comparative size and quality of the fruit in the different varieties. For the information of those interested we present an abstract of our results. The total yield is given in ounces and decimals of an ounce; and the comparative size of the berries of the different varieties is shown by the weight of twenty-five samples, given in grains:—

	First ripe fruits.	Total yield in ounces.	Number of days in bearing.	Weight of twenty-five berries in grains.
1. Brandywine	July 5	7.295	33	478
2. Caroline	,, 8	44.374	30	524
3. Clarke	,, 5	65.386	30	655
4. Cuthbert	,, 8	22.868	30	601
5. Davison's Thornless	,, 1	14.233	22	300
6. Delaware	,, 5	44.529	33	447
7. Early Prolific	,, 3	80.326	35	655
8. Fastolf	,, 5	19.845	26	540
9. Fontenay	,, 5	31.527	33	833
10. Franconia	,, 12	15.185	26	640
11. Gregg	,, 14	17.009	21	439
12. Herstein	,, 5	17.239	26	620
13. Henrietta	,, 5	19.654	26	617
14. Highland Hardy	,, 2	12.427	28	408
15. Knevett	,, 5	19.820	33	798
16. Mammoth Cluster	,, 10	26.392	25	331
17. Mrs. Wood	,, 3	36.035	35	733
18. Naomi	,, 3	1.323	28	234
19. Parnell	,, 5	26.607	30	540
20. Philadelphia	,, 8	6.420	23	227
21. *Prosser	,, 5	15.083	26	308
22. Palluau	,, 5	6.952	26	308
23. Red Antwerp	,, 3	18.556	35	555
24. Reliance	,, 5	17.242	26	432
25. Seneca	,, 10	29.030	25	347
26. Thwack	,, 3	29.085	35	710
27. Turner	,, 3	19.171	28	432
28. Vice-President French	,, 5	35.865	30	586
29. Victoria	,, 5	37.090	33	463
30. Yellow Antwerp	,, 10	20.529	28	470

The following notes were made as to quality of the above varieties under their respective numbers:—

2. Delicate and pleasant, but not rich; moderately firm.
3. Rather sweet and delicate, but not rich; moderately firm.
4. Very sweet and rich, firm.
5. Sweet and rich, rather firm.
6. Rather soft; very sweet and delicate, resembling that of the wild red Raspberry.
7. Flavour a well marked, rather harsh acid; moderately firm.
8. Moderately rich, sweet, not very firm.
9. Extremely rich and sweet; moderately firm.
10. Rich and sprightly; moderately firm.
11. Flavour rather inferior, firm.
12. Sweet and delicate; moderately firm.
13. Insipid, with little Raspberry flavour; moderately firm.
14. Very sweet and delicate; rather soft.
15. Moderately rich and sweet; moderately firm.
16. Insipid; firm.
17. Very rich, sweet, and delicate; rather soft.
18. Very sweet, but lacking Raspberry flavour; rather soft.
19. Lacks sweetness, richness and Raspberry flavour; moderately firm.
20. Rather insipid; moderately firm.
21. Very sweet and delicate; moderately firm.
22. Sweet, but leaves an acid taste in the mouth; moderately firm.
23. Moderately rich and sweet; rather soft.
24. Flavour insipid; moderately firm.
25. Rather insipid; firm.
26. Sweet and rich; quite firm.
27. Very sweet and delicate; moderately firm.
28. Extremely rich and sweet; moderately firm.
29. Extremely rich and sweet; moderately firm.
30. Delicate, but not high-flavoured; very soft.

* The yield of this variety is calculated from one plant.

It will be observed that our list is not confined to the newer varieties, but includes many of the older sorts as well.

The old Early Prolific proved by far the most productive. This variety, now little grown, possesses the valuable qualities of great prolificacy and hardiness, with entire freedom from thorns; and though the harsh acid flavour of its fruit makes the latter undesirable, it would seem that its good qualities might render it valuable as a parent for new varieties.

The Clarke proved second in productiveness, the Delaware third, and the Caroline fourth; the Philadelphia, Brandywine and Naomi, were least productive, Davison's Thornless was earliest to ripen, while Gregg was latest. Early Prolific, Mrs. Wood, and Red Antwerp continued longest in bearing, while Gregg yielded its crop in the shortest time.

It appears that the berries of Knevett (Knevett's Giant) were largest, those of Mrs. Wood were second in size, while those of Naomi and Davison's Thornless were smallest. In flavour, the Delaware seemed to surpass all others in the characteristic aroma of the wild red Raspberry, and Fontenay, Vice-President French and Victoria were superior in richness and sweetness. *E. Lewis Sturtevant, Director, New York Agricultural Experiment Station.*

BOURNEMOUTH AND ITS GARDENS.

THE public gardens at Bournemouth bear considerable resemblance to the Princes Street Gardens in Edinburgh; they are, however, more extensive, stretching from east to west considerably more than a mile. They are laid out with exceeding taste, the spacious gravel paths being smooth and broad, with numerous groups of flowering shrubs, flower-beds, and ornamental trees, while the well-wooded sloping banks present numerous resting-places in the form of seats and chairs under the welcome shade and shelter of the aromatic and umbrageous Pine and other trees, while the pretty little River Bourne traverses the entire length of the gardens disappearing towards the eastern extremity, where it enters the sea. More effective use might possibly have been made of the abundant supply of water furnished by this pretty stream, such as the formation of ornamental lakes, fountains, or waterfalls; as it exists, however, it is exceedingly attractive and pretty, its sparkling water flowing with considerable rapidity over its clear, pebbly bed, which at various points is spanned by rustic and ornamental bridges. Bournemouth and its surrounding neighbourhood being considered as an exceedingly healthy and salubrious locality, it has consequently a winter as well as a summer season; and many of the names inscribed upon the marble crosses and other ornamental stones which furnish the beautiful and garden-like cemetery of St. Peter's church, as well as in the newer one, prove well enough that many from distant parts have been attracted here; some in anxious search of that health which they were not destined to find, but in lieu of which have found a last resting-place amid the flowers, and under the shade of the scented Pine trees.

Bournemouth has no harbour, but has a fine ornamental pier, and its fine sandy beach offers every facility for boating and bathing. It is sheltered on the east by the cliffs of Christchurch Head and the Isle of Wight, and on the west by the high chalk cliffs of Swanage, between which and Bournemouth lies the small harbour of Poole. The town with its surroundings has been designated the evergreen valley, or the winter garden of England. It is, however, of comparatively recent origin, as its history does not extend beyond the present century, or to about the time of the passing of the Enclosure Acts, when, the soil of the district being found to be light and poor, it was extensively planted with the Scotch Fir and the Pinus Pinaster.

At this time Bournemouth consisted of a few fishermen's cottages, but of late years fashionable residences have sprung up, as it were, among the Fir trees and the heather with much rapidity—so much so that it is not unreasonably predicted that the town will ere long extend to Christchurch on one hand, and to Poole on the other. The reputed mild and genial character of the climate of the district is proved by the luxuriant growth made by the half-hardy shrubs and plants which in most other parts of the country can with difficulty survive the mildest winters; but which flourish in great numbers in the gardens of the villa residences here, their dimensions showing that they do not suffer in any appreciable degree from the cold of recent winters. Such are bushes of Fuchsia Riccartoni, 10 or 12 feet high and as many feet in diameter; large healthy bushes of the common or broad-leaved Myrtle; large and compact bushes of the variegated Japan Euonymus; tree-like plants of the Laurus nobilis, or Sweet Bay; the Arbutus Andrachne, or Strawberry tree, bearing plenty of its fruit; Desfontainia spinosa; together with bushes of Escallonias and the Ceanothuses: also many huge specimens of the Hydrangea hortensis that produce plentifully their heads of sky-blue flowers.

Very ornamental hedges are formed of the pretty Tamarix gallica, which is, however, strictly a maritime plant. The common Gorse, or Whin, also grows here in wild abundance, and is used as a hedge plant, it readily submitting to trimming or clipping, and forms an efficient as well as an ornamental fence. The trees which form the celebrated Pine woods of Bournemouth are by no means remarkable as fine specimens, and as a rule, the Scotch Firs have succeeded better than the P. Pinasters. The soil in which both species are growing is mostly of a light sandy character, and as they were planted very closely together, they have certainly suffered from lack of timely thinning out. The vast breadths of straight branchless stems has, however, a by no means unpleasant appearance, and as timber the trees will be valuable, being free from branches until near the top.

The more ornamental species of coniferous trees which have been planted more recently, as well as more carefully, in the grounds of the private residences, appear to be growing admirably, as are also the rows of Araucaria imbricata in the cemetery, together with the fine healthy specimens of such species as the Wellingtonia gigantea, Cedrus Deodara, and Cedrus atlantica, Picea Pinsapo, Abies Nordmanniana, Cupressus Lawsoniana, and various species of Retinospora, &c.

The grounds and gardens in most of the newly erected residences are exceedingly tastefully laid out, and the materials selected for planting are choice and effective, possibly in some instances more gaudy than might be approved of, as near one of the entrances to Branksome Chine may be seen a very pretty villa residence whose grounds are of considerable extent, and are enclosed by a fence or hedge composed of the Fuchsia Riccartoni or some other strong growing variety, and planted close to this fence is a line of tall Sunflowers so managed that the large yellow blooms of the latter just show themselves above the Fuchsias, and all being in full bloom the effect produced is very remarkable. Other grounds were enclosed by a sloping bank, the face of which was carpeted by the Erica carnea and the Ulex europæa intermixed both species being in flower, while a neat and effective hedge of the common Holly surmounted the bank. There are also several nursery gardens in or near to the town of Bournemouth, where plants and flowers of all kinds are remarkably well grown for sale.

In addition to the public gardens which have already been alluded to, there is also a fine winter garden at

Cranborne of considerable extent, together with a tennis lawn, &c. The building is well stocked with plants of various kinds, and all are in good condition. The glass structure is 220 feet long by 120 feet wide, and at the highest point is about 70 feet, the curvilinear roofs being supported by cast iron columns. There is also another, and a still more extensive winter garden at Southbourne, which is some 3 miles from the centre of Bournemouth, and to which conveyances run several times each day. This building is 320 feet in length, and of corresponding width. It is in several divisions or compartments, and contains a fine collection of stove as well as of greenhouse plants, &c., all being grown for sale; and these gardens, to which the public are admitted, on payment of a small charge, are all the property of a company. Prominent among the many attractions of Bournemouth are the various chines, the term "chine" being a local designation for various extensive ravines or gorges, the result of some slow, gradual action extending through ages. These separate the lofty cliffs which face the sea, presenting deep and sinuous windings, yawning chasms, and overhanging cliffs, with occasional white sandy hillocks, with tufts of purple Heather and yellow Gorse, while stunted Pine and Birch trees cling to the sides of the high sandy cliffs high up overhead, presenting altogether a singularly wild and pleasing aspect. The one known as Boscombe Chine, which opens upon the sea, and which may be entered from the Christchurch Road at a short distance from Bournemouth, is a good example; but by far the most romantic-looking and largest chine is that of Branksome. It has been said, "See Rome and die." Many, however, must necessarily die without seeing Rome; but certainly no admirer of the "Wild Garden" should be in Bournemouth, or in its neighbourhood without visiting Branksome Chine, which must always be very interesting and beautiful; but during the period the Rhododendrons are in bloom it must be a sight to be seen once and never forgotten.

The fine mansion known as Branksome Dene, is the property of Lord Wimborne. This dwelling commands splendid views, the grounds are also beautifully laid out and contain many fine trees and shrubs. This with Branksome Grove, Branksome Glen, and Branksome Chine, &c., are all comprised in what is known as the Branksome Park estate, which is said to be some 5 miles in circumference, and may be described as an extensive Pine forest. On the high ground, near one of the entrances to the chine a good view is obtained of the town and harbour of Poole.

With the exception of the somewhat stunted Pine trees which adhere to the white sandy cliffs, most of the trees and shrubs in the chine are in the most healthy and luxuriant condition; this is particularly the case as regards the Rhododendrons, which occupy some of the lower portions of the grounds, while lower still, on the surface of the brown or coffee-coloured water, the Nymphæa alba—

> "The Water Lily to the light
> Her chalice rears of silver bright."

The water in the various pools in the chine is pure and clear enough, but the brown tinge it presents is the result of the decaying resinous foliage of the Pine trees and other plants deposited at the bottom of the pools.

Other aquatic plants, such as the Nuphar lutea, Alisma nutans, Equisetum fluviatile, or the Great Horsetail, and what appeared to be the Stratiotes aloides, or Water Soldier, grow in these pools; while near the margins were Eupatoriums, Arenarias, Chenopods, Atriplex littoralis, Beta maritima, &c.; and high above, among the Fir and Birch trees, were to be seen the Mountain Ash, heavily laden with its rich scarlet bunches of fruit, and the Strawberry tree; while on sloping sandy banks common Furze, Erica carnea, and the Calluna vulgaris, or common Ling, with various species of Ferns, grew contentedly together.

Bournemouth may be said to owe much of its sanitary reputation to its topographical position, which secures for it shelter, as well as a large amount of sunshine at all times, and its freedom from extremes in the matter of temperature, as it is said to be cooler in summer and warmer in winter than any other locality in the South of England. The supposed salubrious properties of its wide-spreading Pine woods, its perfect drainage, and, lastly, but probably not in the least degree, the beauty and cheerful aspect of its extensive public gardens and pleasure grounds, have considerably added to its reputation as a health resort. *P. Grieve.*

FUNGUS ON ENSILAGE.

AMONGST the rarer British fungi which very few botanists have seen in a natural position and living state in Britain is Schizophyllum commune, Fr. The fungus is a common one in the tropics, rarely spreading into temperate regions. It is generally seen in Britain on imported foreign timber, but, in rare instances it grows here naturally. Its name is derived from σχιζω, to split or cut, and φυλλον, a leaf, in reference to the nature of the gills, each one of which is curiously split through its entire length and the two sides rolled back in a revolute manner. The fungus is villous, tough, not putrescent, and after it has long lain apparently dead it will quickly retake its old form on the application of moisture; its colour is whitish or pale buff. It belongs to the Mushroom family (Agaricini) of which it, perhaps, represents the most aberrant genus.

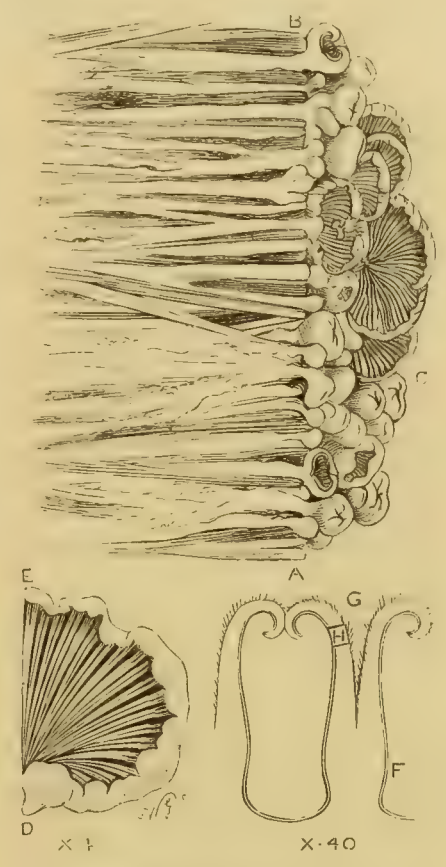


FIG. 73.—FUNGUS INVADING ENSILAGE (SCHIZOPHYLLUM COMMUNE).

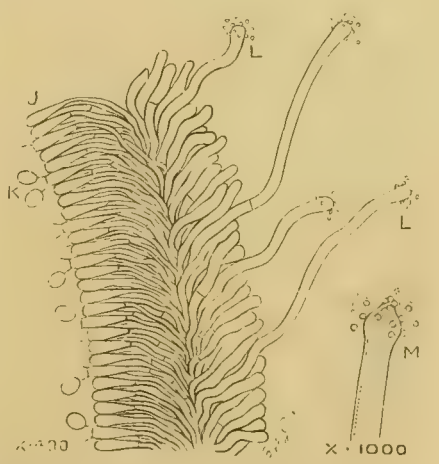


FIG. 74.—GILL STRUCTURE OF SCHIZOPHYLLUM COMMUNE.

A short time since a correspondent of the *Gardeners' Chronicle* sent living examples of this fungus to the office for a name. It was growing on the cut edge of ensilage in a silo, and was, of course, an offensive nuisance. A fragment of the ensilage is shown in fig. 73, the cut edge being represented at A B. The fungus in various stages of growth is shown at C, and the mycelium or spawn ran deep into the ensilage towards the opposite side of the illustration. One half of an example of a single expanded specimen is enlarged four diameters at D E, and a transverse section through the "split" gills is shown at F, enlarged 40 diameters.

There is an old adage which says "It never rains but it pours," and this was illustrated in the case of the fungus now under description, for no sooner was the answer printed to the correspondent in this paper than Mr. C. Edmund Broome, M.A., of Elmhurst, Batheaston, wrote to say he had at that time got the same fungus growing on a water-butt in his yard. This was, indeed, a great "come down"—a sunny tropical aristocrat fixing itself on a plebeian English water-butt in a back yard! Mr. Broome has also mentioned its occurrence in Surrey, and on a prostrate Beech at Burnham Beeches. Indigenous specimens have been found in Scotland, Buckinghamshire, and Kent.

The inner substance of the gills is curious. This inner material is downy or villous under a lens, as shown at G; the appearance was noticed by the Rev. M. J. Berkeley, who wrote in the *British Flora*, 1836, p. 130, "The inner barren face villous with the flocci, of which the substance of the pileus is composed."

The splitting of the gills is most remarkable. It generally happens that an unusual phenomenon in habit or structure has some special meaning, the following notes, therefore, drawn up after an examination of several living examples may possibly be read with some interest.

I carefully removed a fragment from one of the living split gills shown at H, fig. 73; from this fragment I took an extremely thin transparent slice, and when magnified 400 diameters it presented the appearance shown in fig. 74. The spore-bearing surface is shown at J, and the little white spores balanced on their inconceivably fine supports at K. The villous threads of the split portion are shown at L, L: a few of these threads had also pushed themselves out on the spore-bearing side of the gills. Each thread was somewhat enlarged at the top, and round and inside the apex of each were seen numerous very minute, quickly oscillating, whirling or revolving globular bodies. The apex of a thread is further enlarged to 1000 diameters at M (fig. 74). The little spherical bodies appeared to be immersed in a somewhat thick fluid within each thread, and the fluid, together with the little spheres, escaped through the apex, as shown. I need hardly say that my idea is that this section shows the reproductive apparatus of the fungus, and entirely agrees with Corda's observations and the observations on Agaricus and Coprinus as made by myself.

The long threads are, as I think, cystidia, and the little quickly oscillating or whirling globular bodies spermatozoids. The fungus being extremely tough the cystidia cannot push themselves in any number through the hymenial surface shown at J, so they grow in profusion through the loose tissue exposed to the air on the splitting of the gills. In other words, the splitting of the gills in this leathery species is a natural provision for the dissemination of the spermatozoids. I took many slices, and the result was the same in each. In this, as in nearly every other observation, living examples are requisite; botanists are not as yet liable to a fine or imprisonment for vivisecting a fungus. This is the third rare and curious fungus of late found on ensilage; the first was Isaria fuciformis and the second Saprolegnia philomukes. *W. G. Smith.*

SEEDLING CARNATION from Connah's Quay is distinct and very pretty; the flowers, white, marbled in a peculiar way, with deep bright rose, are also very sweet. It is neither a very large nor a full flower, but would be charming to cut and place in bouquets. This is one of many fine varieties of Carnations which have been brought into notice during the last few years. They possess few or none at all of the properties desiderated by the florist, but their sweetness and novelty should be their recoomendation for a place in the flower border of every well-arranged garden. *J. Douglas.*

HOME CORRESPONDENCE.

Crute's Patent Concave Flower-pot.—In last week's number of the *Gardeners' Chronicle* attention was drawn to this invention, and in reference to one or two observations made by you, I may point out that the hole in the base, so far from being useless, was essential for the purpose of ventilation, and was absolutely necessary for re-potting. With respect to the remark that insects could enter but worms could not, it is contended that the concave principle admits of such a simple and effective use of a very few crocks that insects could not enter. The present shape of the new pot has been adopted to give more space for the roots, a plant naturally requiring more room at the lower part of the pot where the roots expand than at the top; and this fact has been borne in mind, whilst the base has been made sufficiently small to admit of repotting being easily performed. A decided advantage in the new pot has been overlooked, viz., the necessity is avoided of using boards or other materials to stand the pots on in any part of the garden during the summer. *James Crute.*

—— I send you letters that will prove beyond dispute that I made the very same shaped pot in 1876, and supplied to Mr. B. S. Williams on July 13, 1876, 333 of such pots; also letters to show that another firm of pot-makers made the very same shaped pot. I can produce many more letters, and also some of the pots made in 1876. *J. Matthews.* [We have received several other letters to the same effect, and have before us a woodcut of the patent "Sutton" reservoir flower-pot, made by Messrs. Wheeler Brothers, of Reading, which seems to be nearly, if not quite identical. ED.]

—— I have had a flower-pot with a concave bottom in use for some time past. I first picked up the idea at Messrs. Sutton & Sons, at Reading, seven or eight years ago, and had a few made by a flower-pot maker at Reading, who has turned out this kind of article for years past. I fancied the kind of gutter formed round the inside circumference by means of the concave bottom, would have held moisture and lessened the work of watering, but it did not have the effect I expected. The concave bottom takes up a good deal of room, and when filled up with small pieces of crocks with a large one placed over the hole, but little depth of space comparatively was left for the roots. I found also that the soil in the pot dried more rapidly than in the case of a pot with a flat bottom. I thought also that the concave form of the bottom would prevent the ingress of worms, and in that respect I was disappointed, they did get in; and indeed it requires a good deal of ingenuity to keep them out. The improvements in the concave pot made by Mr. Crute may be advantageous, and serve to bring it into general use; but they, in my opinion, require to be made deeper than ordinary flower-pots. I have no desire to underrate the merits of Mr. Crute's pot; but as there is a marked difference in the tone of your discriminating notice and the glowing eulogies I have seen elsewhere I thought it desirable to give you my experience of a concave-bottomed pot, and may add that I have abandoned it, and am now using in preference the old-fashioned flat-bottomed pot. I send you a sample of the pot to which I have referred, that you may see the idea of a concave bottom is by no means a new one. *Florist.*

—— The illustration of Mr. Crute's so-called new flower-pot given at page 375, shows one identical in form and design with some 48-sized pots I have here, of whose make and design I don't know, but they at least have been made a long time. They are nearly upright, have concave bottoms, with one hole at the apex of the raised bottom, but none at the lower edge of the bottom as shown in the illustration. The pots I have here have proved to be pitiable failures, for the simple reason that the water remained in and clogged the soil, the raised bottom preventing its escape. It may be, perhaps, remembered that several years since I, in these pages, suggested the making of pots with slightly concave bottoms, but without holes in them, the drainage or outlet for surplus water being made in the form of a ring of little holes running round the base of the pot inside and through to the outside. Such a plan, beyond the need of a little moss to keep dirt from choking the holes, would, I contend, provide all the requisite drainage, and leave in the pots more space for the soil and roots than is now found when an inch depth of rubble drainage is introduced. I do not know that any one adopted the suggestion, perhaps it is a plan not easy to carry out in simple pot-making operations. In any case I am sure that not only could rubble drainage by their use be dispensed with, but that worms could be also effectually excluded. I am by no means sure that the upright pot, although it occupies for its size but a minimum of space, is, after all, the most economical, for it is an unpleasant experience that far more of labour in watering must be given to plants growing in such pots than is needed by those growing in pots of the usual broader-topped form. It is in dry weather no small matter to use these erect pots, which after all give such a limited water-holding area on the surface, rendering very frequent watering needful; nay, farther, in the case of plants freely rooted in them, it is often difficult to get the ball thoroughly moistened once it is fairly dried. Pots made of very tough clay no doubt are the most enduring, but I am not at all sure that they are so good for the production of free rooting healthy plants as are those of softer texture and more porous in grain. No matter what may be the form of pot or the material of which it is composed, we cannot prevent, except by frequent washings, the outer surface from becoming coated with green mossy slime. If by any process of glazing or dressing with any innocuous chemical preparations that pot abomination could be avoided it would be a great gain. In this matter hard clay pots seem to be worse than soft ones. *A. D.*

Tomato Hackwood Park Prolific. — This Tomato is evidently deserving of the high character it received before being sent out by Messrs. Veitch, and seems likely to supersede a good many of the older varieties. In a house at Aske Hall, filled with several of the large fruiting kinds, it is so markedly superior to the others in the immense weight of fruit it produces as to stamp them as useless. Unlike most of the other large fruiters it does not set in clusters on one part of the plant while it is thin of fruit elsewhere, but bears freely all over the growth. The fruit is highly coloured, large, and smoooth, not unlike Stamfordian—a favourite variety with exhibitors, but a shy bearer. *T. B. T.*

Rubus chamæmorus.—This is not so rare a plant as some of your correspondents seem to think. In the Scottish Highlands it is common enough when the necessary conditions for its growth—viz., appropriate soil and sufficient altitude—are present. It also occurs in several counties of southern Scotland, in eight or nine of northern England, and in three Welsh; moreover, it has been found in the North of Ireland. Outside of Britain it inhabits northern Europe, Siberia, and North America. The name by which the Cloud-berry is commonly known in Scotland is "Averon," the Gaelic name being Oireag, Oighreag, Foighreag, or Feireag, and it is the badge of the Clan McFarlane. (The name of Roebuck-berries belongs, I think, to Rubus saxatilis, and not to this species.) The Norwegian names are Myrebær, Moltebær, and Molta. The Cloud-berry requires a peaty soil, not too dry and not too wet, and as it is has a creeping underground stem or root-stock it often occupies large patches of ground, frequently—in a suitable place—many acres. I have not seen it much below 1500 feet above sea-level, nor above 3800 feet. It flowers about the end of June, and a large bed dotted with the solitary white flowers is a pretty sight. If the blossoms are not destroyed by late frosts, as is not unfrequent, they are in due time succeeded by the berries. These are at first green, then reddish, but not translucent, and finally when ripe amber-yellow and translucent. Though the flavour of the fruit is highly spoken of, it seems to me peculiar and not very attractive, though it is better when made into jam than when raw. As for the cultivation of the Cloud-berry, that should not be difficult, if a moist bed of peat is available. I have grown and flowered it for several years in rather dry peat on a rockery, and as the space alloted to it was very limited it can scarcely be said to have got fair play. Given room and the proper amount of moisture, I think it might be easily cultivated. *F. Buchanan White, Annat Lodge, Perth.*

The Celery Maggot.—Is it the fact that this pest of our gardens has been much less troublesome this season than usual? I do not grow much Celery, but find in what I have not the least evidence of maggot, indeed it is long since the leaves have been seen so green and vigorous. It would be interesting to learn something of the experience of others in this matter, for it is one in which all gardeners are more or less concerned. In spite of the drought I have seen some splendid Celery this season, and in all cases free from the maggot. What is known as the London Market Red is largely grown near Twickenham, and there the sample is of the finest and cleanest. In some gardens near Reading the Dwarf Incomparable White and Leicester Red are singularly clean and good, and excellent samples have been seen in other localities. These suffice to show that my case is not singular; so far from that being the case we may learn that for once to have the maggot badly is singular this year. If any one could explain the cause of this apparent absence of the Celery pest, some light might be thrown upon its life that would enable Celery growers the more effectually to contend with it in less favourable seasons. Curiously enough too, although we had so much favouring heat and drought, it is stated that the Turnip beetle has been more than usually scarce. Turnips happily promise to be abundant, for the plant, especially of the late sowings, is thick, and fly seems to be conspicuous by its absence. Happily also this denser plant and excellent rains have given considerable impetus to field labour. *Twickenham.*

Fertility of Hybrids.—I cannot enter into the discussion of this interesting topic which Mr. Meehan has raised with any scientific basis from which to argue, but I may mention that I have here several plants of a hybrid Foxglove that are absolutely barren. The parents—Digitalis lutea and purpurea—rank amongst the freest seeding plants in cultivation, and yet their combined energies have succeeded only in raising purely barren progeny. The hybrid plants not only bloomed most profusely, but produced tall spikes of seed-pods almost identical with those seen on D. lutea, but larger; still, not a seed has resulted. Plainer proof that cross-fertilisation of species will produce infertility could hardly be found. It is worthy of remark that some of our varieties of the Potato are wondrously fertile, whilst others are absolutely barren. This season Radstock Beauty is so fertile that it has given seed-balls at the rate of more than a peck to the rod; indeed, I have found clusters of not less than twenty-five seed-pods frequently. I can hardly imagine that these free seeders are the product of any previous cross between diverse species, though some of our barren kinds may be so. If the crossing of varieties of Solanum tuberosum, now fertile, with such species as S. Maglia or Commersoni, should but be productive in the progeny of absolute infertility, the gain will be problematical. *B. T.*

Root Fusion.—The twin Oaks near Leebotwood, referred to by your correspondent, "E. W. G.," p. 375, as worthy of illustration in the *Gardeners' Chronicle*, have already been given by the writer of this note. A small illustration from a camera-lucida drawing, and brief description, will be found in the *Gardeners' Chronicle* for September 3, 1881, p. 313. *W. G. S.*

Sweet Brier.—The delicious odour the Sweet Brier exhales ought to commend it to every one, and cause it to be extensively planted, for besides the lovely perfume it gives off, which quite pervades the air in spring after a shower, it is one of the most ornamental shrubs any one can have, as may be seen just now, for wherever there are bushes of it they are aglow with their bright coloured hips, which are exceedingly ornamental, showing off well and most effectively at a distance, where they look like brilliant blooms, and light up a place. Rain and wind that spoil flowers so quickly have no adverse action on them, and for weeks yet to come they will be shining objects, and remain so long after gardens are bare. We have a hedge of plants, but where, I think, they look best is in the foreground of evergreens at the back of a herbaceous border, or as isolated plants on grass, for which they are specially suited, and I was much struck with some I saw the other day so planted, as they were of the loose bush form and laden with their coral-red hips that were all aglow in the sun. It occurred to me when looking at them, as it has done before, how serviceable they and many other of our berried plants would be for cutting from for the embellishment of dinner-tables, where sprigs judiciously used would be much more appropriate than flowers, and at this season great variety could be had, as there are those of many sorts of Berberis, Cratægus, Weeping Ash, and lots of others almost as beautiful, and therefore a fine display might be made. *Norfolk.*

Ornithogalum gracile.—Mr. Wolley Dod complains of this plant not growing with him. It is the same with me. I bought fifty at one of Messrs. Protheroe & Morris' sales; I potted them carefully and placed them in a cool house, but not one has grown. *T. Woodford.*

Cyclamen hederæfolium with White Flowers.—Among the plants which just now lend a special charm to some of our English gardens are the autumnal-flowering Cyclamens. Of these, C. hederæfolium has made itself quite at home here. It is now more than three weeks since it first began to push its lovely flowers through the soil, and I have been much surprised at finding that in various parts of the garden plants of this Cyclamen which had hitherto produced flowers of the typical rose colour have now all their flowers of a pure white, differing, indeed, in no respect from the white variety enumerated in the nursery catalogues, and sold for twice the price of the typical one. If the plants which have thus thrown up white flowers had been seedlings from the type they might be regarded as affording simple examples of the common phenomena of seedling variations; but what gives special interest to this case is that the very same tubers—and that not in one instance only, but in many, and in various parts of the garden—which had for years past produced the coloured flowers are now throwing up nothing but white. Perhaps some of your readers could tell us

whether their experience as to the flowering of the Cyclamen during the present season is in accordance with my own. *Geo. J. Allman, Ardmore, Parkstone, Dorset.*

Transplanting Fruit and Evergreen Trees.—What a grand time it is for transplanting, especially for evergreens, which, during the great heat that prevailed some time ago, had their growth checked and their young shoots ripened to a degree rarely seen at this season, and with the wood and foliage so hard and mature the plants are in a safe and suitable condition for lifting. This applies also in a great measure to deciduous subjects, especially fruit trees, which, if proper care be taken, cannot now be moved too soon, for with the leaves on them they make fresh roots very quickly, and becoming re-established so soon, they are quite able to bear a crop the year after. Feeling and knowing this, we have for the past week been busy at our Plum wall, where we have had the whole of the trees up and re-arranged them, as they were at irregular distances. Many of the old ones we have discarded and placed the young ones at about 13 feet apart, which spaces they nearly fill, and some of them quite, as they had been planted between the old ones, or grown on other walls ready for furnishing the one they are now on, which is of a westerly aspect. The way we managed was to open a wide trench down the middle of the border, from which we worked back to the trees, carefully removing by the aid of forks the soil from among the roots till each tree could be lifted, taking them one by one, and placing them in their allotted position till the job was complete. To give them every chance, all of them had several barrow-loads of fresh turfy loam, just carted for the purpose, and on mounds of this, chopped up roughly, the plants were stood at the proper level, and the roots were covered with the same kind of stuff as quickly as possible, immediately after which heavy waterings were given to wash it well among them and prevent flagging of the leaves; and to keep these fresh we have used the garden engine freely, as the sun is hot upon the wall all the afternoon. As soon as we have finished with these Plums we shall begin on a large young Peach, which we want to put in the place of another on the back wall of a house, and when we get it there we shall shade it slightly for a day or two, and treat it in other respects as we have done those referred to. Next to that, we shall lift some Pears, which we are growing on and preparing for our main wall, and as these have not room to extend where they are, we shall lift and replant them in a spare part of the garden, where their training will be finished by tying the leaders and branches to stakes. In two years time they will transplant well again, when they will be again moved early to replace the old trees, and the wall thus refurnished at once. As it is hot and sunny, evergreens require the same care, for though they may not flag so readily, their leaves ought to be kept up, and the only way to succeed in doing that is to be expeditious in lifting and getting them in again, and to be free in the use of the water-pot, engine, or syringe, as besides giving the roots a thorough soaking, it is important that the tops be kept fresh, which damping them over will assist much in doing. The things to start first on are the Coniferæ, as, being of the most value, they should have the best chance. To insure success, it is necessary to open out well round the plants, so as to save every root, and care ought to be taken that not one of any size be broken or bruised, as all are wanted, and the more the trees have the better they do. Another thing to be particular about and to guard against is wind waving, for if a tree is oscillated to and fro the main roots become strained and chafed, under which circumstances it is impossible for them to send out fresh fibres, or if emitted they get rubbed off again. To prevent these evils each plant should be properly staked and tied, or secured and maintained in a quiet rigid position by straps, either of stout wire or strong cord running out from the main stem, to which it may be made fast to a collar, and the other ends to stakes driven well into the ground. Rhododendrons, Laurels, Aucubas, Box, Hollies, and all such-like shrubs are very little trouble, as most of them may be lifted with good large balls, and transferred from one place to another without feeling much check. The great point with these, as with the others, is to start early and let the plants have the benefit of the warmth now in the soil that they may get a thorough good hold before winter sets in, which they will if moved at once, as root action will not cease for some time yet to come. *J. Sheppard.*

Pea Crop of 1884.—This has been the worst Pea year, and the shortest, in Northamptonshire, I have experienced. The first Peas were sown on February 5—Laxton's Earliest of All, William I., Sunrise, and American Wonder. On April 13 the minimum thermometer fell to 13°, or 19° of frost, which made great havoc with them and fruit trees. Earliest of All Pea in flower May 13, William I., May 16; Sunrise and American Wonder, May 19. I gathered Earliest of All on June 19; American Wonder, on June 22; William I., on June 24; and Sunrise, on June 28. Earliest of All is the earliest Pea I have yet met with; it is less productive than William I. and Sunrise. American Wonder is very early and prolific, and the best for small gardens. Several new Peas for main crop were tried against Payn's Conqueror; this Pea has been annually grown in this garden for forty-four years, and holds its own against all comers. It is very prolific, a continuous bearer, of excellent flavour, fine colour when boiled, and not so liable to mildew as many. Culverwell's Giant Marrow proved the most disappointing, the large bladder-pods only half filled, and flavour very inferior. I shall, however, give it another trial. The rainfall from May 1 to September 31 was only 5.31 inches. *Floore.*

Disease in Poplars.—Black Italian and Balsam Poplars grown in the neighbourhood of Glasgow become early affected with canker, and are thereby soon rendered useless. An examination of the diseased parts shows the tissue between bark and wood to be infested with small white worms. Can any remedy be suggested to save the trees already affected?—or is there any known cause for this disease which might be guarded against in future planting? *W. L., Glasgow.*

Blackberries.—It is very interesting to note the exceeding profusion this season of many kinds of wild or uncultivated fruits, whilst we have to lament such a dearth of some of our best orchard fruits. Very materially, without doubt, this difference is due to the fact that whilst most garden fruits bloom early or in the most fickle period of the spring, most of the hardy fruits bloom after much danger is passed. Thus we find that wholesome fruit, the Blackberry, to be this autumn quite abundant. But a few weeks since and it seemed as if the crop would have been scorched up, but now we find a profusion of them, and judging by the way in which the fruit is being sought for we should think little is wasted. There really is much enjoyment in a day's Blackberrying, and specially so for the town-folks. Were it not that the hedgerows might suffer, there could be found no form of outing so productive of enjoyment to town children as a day's Blackberrying about our fields and lanes. In many districts the fruit has become a profitable article, for, costing nothing to produce, the only labour spent is in gathering it, and the berries can easily be sold in any populous locality. Specially valuable are the fruits this season because of the general scarcity of Apples. Fortunately for those who love the Blackberry, our farmers are not such ardent admirers of close trimmed hedgerows as railway directors are, hence Brambles are yet largely permitted to exist and fruit. *B. D.*

How to Grow Hyacinths.—Hyacinth bulbs are usually imported from Holland in the month of August, and from that time onward to the New Year they are offered for sale by all seedsmen and florists. Good bulbs should be plump, well formed, and solid, and it may here be remarked that, as a rule, the single varieties give most satisfaction. The end of September or beginning of October is the best time for general planting. When one bulb only is to be planted in each pot, 5½ or 6 inch pots should be used. A very pretty effect can be had by planting three bulbs, varieties that flower about the same time, in a 7-inch pot. The best compost for growing Hyacinths is made by mixing turfy loam, sharp sand, and old rotted manure, in the proportion of two parts loam, one part sand, and one part manure. Fill the pots to within three-quarters of an inch of the top with the soil, and plant the bulbs, taking care, however, not to bury them. The top of the bulb must not be covered, all the rest may. After planting give a good watering, and set the pots away in some dark place for at least a month; by that time the roots will have grown considerably, and be able to endure and support the growth of leaves and flowers, which will begin soon after the plants are exposed to the light. It is a good plan to cover up the pots during the month they are secluded from the light. Cocoa-nut fibre or dry ashes are often used for this purpose, but if neither can be had or conveniently applied, a piece of brown paper or cloth spread over the pots will do. To bring the Hyacinth to perfection it is necessary that watering be carefully attended to, and that the plants get as much sunlight as possible after the first month. Liquid manure will not be necessary if the pots are filled at the beginning with the compost recommended. Cultivation in glasses never produces so satisfactory results as pot growing, but the process is very interesting, and consequently much followed. Place the bulb in the glass, so that its base will be within a quarter of an inch of the surface of the water. A small piece of charcoal placed in the water is recommended to keep it sweet, but it will nevertheless require to be changed occasionally. Adopt a similar course to that advised for pot-growing, keeping from the light until roots are formed. Treatment exactly similar to that recommended above will grow Tulips, Crocus, and many other of the finest Dutch bulbs to perfection. Of course, the smaller the bulb the greater the number that may be planted in each pot. For the outlay of a few shillings it will be seen that every home in the kingdom could easily be made bright, attractive, and interesting during the months of December, January, and February, by the growing of a few potfuls of Dutch bulbs. *Wm. C.*

Veitch's Selected Extra Early Peas.—I can fully endorse all your correspondents say in favour of the above Pea. We have grown it here for two seasons, and by its earliness, productiveness, and good quality, it has given very great satisfaction, which is my reason for recording my experience of it—also for the benefit of those who have not yet grown it and who may have to meet the ever-increasing demand for the earliest delicacies of the season. *Thos. Shingles, Tortworth.*

The Potato Crop of Ireland.—I grow a considerable extent and a number of varieties of Potatos, and lately have had a vacation trip through many parts of Ireland. These facilities enable me to give you an idea of the above. We have had the driest season, especially in the centre and south of Ireland, for at least fifty years. This is the conclusion of most aged people to whom you speak. Some crops have been wholly and others partially ruined. Among the former would be grass, and I might add the Turnip crop, especially where the soil is of limestone formation. To the latter would be referred the whole Brassica tribe. Money could not buy here at present a presentable head of Cauliflower or Broccoli. I have been to some shows, and judged at others, and noticed the same thing everywhere. Gardeners who may happen to have water have given up perpetually watering those crops. I have been remaking some flower-beds within the last few days, and at 2 feet deep found the soil "in powder." Now there is one crop that has benefited by all this—the Potato crop. You will be glad to hear there is no Potato blight in Ireland this year. When you have regard to the general prosperity of the country, there is no factor of equal moment to this. It means millions to the middle and lower classes, and plenty for all. Some one may take exception to my statement, and say they have Flounders, Snowflakes, Victorias, Regents, or some other susceptible variety affected. No doubt I saw Peronospora in a close kitchen garden a month since in Wexford, in another in Kilkenny, and a third on the confines of Limerick; but they were the merest patches, and without the predisposing moisture did not spread. All my early and second early varieties—Myatt's, Carter's First Crop, Cosmopolitan, Ashtop Fluke, Beauty of Hebron, Eight Weeks, Early Rose, Old Fortyfold, Holborn Favourite, and White Elephant—are lifted, and I am proud honestly to say I did not see a diseased Potato this year, certainly not among those named, though some of them other years would be sure to be affected. Now, in passing, I would draw the attention of Mr. Worthington Smith to this fortunate state of things, and ask him, Does it alter in any way his fungoid opinions? What does he think of Mr. Jensen's "earthing-up" principle? And, lastly, as to the possibility of being finally done with the Potato disease? This would be a grand look-out for the farming and general public; they could then grow the larger varieties for cattle feeding, and a partial failure of Turnips or forage crops would be of secondary importance. This is not visionary, for I have gone carefully through our field Potatos—Magnum Bonums, Champions, Schoolmaster, Porter's, Red-skin Flourball, and The Hero (a capital Potato)—and they are absolutely free from a sign of blight, and are now nearly naturally decayed. The quantity may be under other years, but the quality is superb. In Ireland to-day the difficulty would be to find a Potato of bad quality. Sunshine and proper ripening are the cause and effect, and on both success depends; further, success next year seems assured too, for the smallest and deepest tuber is dried and ripened in the ground, and those at all near the surface are more or less "greened." *W. J. Murphy, Clonmel.*

House and Church Decoration.—Two suitable greenhouse shrubs for this purpose are to be found in Sparmannia africana and Clethra arborea. The first is an easily cultivated plant, that produces great quantities of pure white flowers, with lemon coloured anthers, appearing in winter and spring on the ripe wood of the previous year's growth. For early winter flowering it will be found best to forward the first growth by placing the plants in a vinery at work, or in an intermediate-house for several weeks, as the chances of an early production of bloom are thereby increased. A good compost for them is peat and loam, not much sand, and efficient but not excessive drainage, as it is greedy of moisture when growing, the foliage being soft and large. Small pots are preferable to large ones, as large pots lead to leaf development only. The plant will do out-of-doors in

July and August, and the first half of September. A spot where they can enjoy the morning sun up to 12 o'clock suits them capitally, the pots being plunged up to the rims in sand or ashes. Clethra arborea, sometimes called the Lily of the Valley tree, is a handsome subject, that will with constant potting and tubbing arrive at the height of 30 feet, but which can be made to grow healthily in small pots, and so make miniature trees, in true Chinese dwarfing fashion, of 3 to 4 feet. The plant is an evergreen, having noble looking foliage not unlike that of Rhododendron cinnamomeum, and in old trees corrugated cork-like bark. The inflorescence is produced in spring as panicles of white small bell-shaped blooms of a pleasing size and appearance. Ordinary greenhouse temperature suits it best, but it may, like the preceding plant, be placed out-of-doors for three months during the warm season—a position in the full sun, but away from walls, &c., being the most proper place for it, the wood requiring plenty of sunshine to ripen it. Cuttings of the Clethra strike easily in a moderate bottom-heat in August or September, in a close propagating pit without a bell-glass, but in an airy structure, such as a Pine-pit, &c., with a glass over them. *M. F.*

Aralia papyrifera.—Now is a good time to make root-cuttings of this plant. These may be made exactly like Seakale sets, with a straight cut transversely for the upper end, and an oblique one for the lower. The sets can be inserted thickly in sandy soil, the transverse cut end being just level with the soil. Treated cool, they will begin to grow in April, when they may be potted. Planted out in good ground they make nice plants by the autumn. *M. E.*

Reports of Societies.

Royal Horticultural: *Sept. 23 and 24.*

THE FRUIT AND VEGETABLE SHOW.—This fine meeting was held in the conservatory at the Royal Horticultural Society's Gardens on Tuesday and Wednesday last, and proved a source of instruction and delight to the great crowds of persons visiting the International Health Exhibition. We may safely aver that there were but few persons at that exhibition who did not avail themselves of the opportunity afforded of seeing the finely grown fruits there staged by some of our best growers for competition. The season has in all ways been very favourable to Grape growing, as was quite apparent in the well ripened, well coloured examples shown, and for quantity of Grapes put up, even equalling the now celebrated shows at the Westminster Aquarium. The only sign of imperfect colouring was seen in the class for Alicantes, and in this were several examples of that unpleasant foxiness of tinge, where in all other points the bunches were meritorious.

GRAPES.—The Grapes occupied one long table running up the centre of the conservatory—Apples, Peaches, and a variety of other fruits, and the few floral productions, the side tables—so that promenaders had sufficient room to move about. For the best collection of ten varieties, six black and four white, four competitors entered. Mr. Wildsmith, gr. to Viscount Eversleigh, Heckfield, was 1st, with fine bunches of Gros Maroc; Lady Downe's, particularly good in bunch and berry; Golden Queen, White Tokay, Alnwick Seedling, Black Alicante, among his best; Madresfield Court, Muscat of Alexandria, Black Hamburgh, Mrs. Pearson, completing the varieties. Mr. J. Wallis, gr. to Rev. W. Sneyd, Keele Hall, Staffordshire, was 2d, his Golden Queen, Gros Colmar, Gros Maroc, Black Alicante, Buckland Sweetwater, Lady Downe's being of very superior quality; Mr. J. Roberts, gr. to Baroness Rothschild, Gunnersbury Park, Acton, was 3d, with very fine Gros Maroc, Madresfield Court, and Barbarossa. Messrs. H. Lane & Son, Great Berkhamsted, showed Barbarossa, Golden Queen, Muscat of Alexandria, and several others, but failed to win honours. For the best collection of five kinds, three black and two white.—1st, Mr. Woodbridge, gr. to the Duke of Northumberland, Syon. In this lot were noticed some beautiful examples of Muscat Hamburgh, Madresfield Court, Trebbiano, Muscat of Alexandria, all of which were excellent in bunch, berry, and all other points, and the variety Lady Downe's possessed immense berries even for that kind; 2d, Mr. Horsefield, gr. to Lord Heytesbury, Heytesbury House, Wilts. In this collection were the Chatsworth Seedling, a variety, small-berried certainly, but which carried a fine bloom; Muscat Hamburgh, Foster's Seedling, and Trebbiano, were also good. For the best three bunches of Muscat of Alexandria, 1st, Mr. W. Pratt, gr. to the Marquis of Bath, Longleat, who had some of the finest Grapes in the show, one of them especially was a grand solid bunch, not too heavily shouldered; 2d, Mr. Charles Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Gerrard's Cross, with good well ripened bunches, that were rather irregularly berried, perhaps from being overthinned; 3d, Mr. W. Allan, gr. to Lord Suffield, Gunton Park, Norfolk, with good but still less weighty bunches. Mr. J. J. Lowry, gr. to James Macdonald, Esq., Belmont, Mill Hill; Mr. J. Roberts, and Mr. W. Hare, Park Hill, Streatham, also competed in this class. For the best three bunches of Black Hamburgh Grapes.—1st, Mr. W. Pratt, Longleat, with very good heavily-shouldered bunches bearing not extremely large berries; 2d, Mr. J. H. Goodacre, gr. to Lord Harrington, Elvaston Castle, with fine fruit, well coloured; 3d, Mr. J. Roberts, Gunnersbury, whose bunches were small and well coloured, with perfect bloom on them. Messrs. Chuck, of Brodsworth Hall, and Richards, of Somerley House, Ringwood, showed likewise fair samples. The competition for the best three bunches of Gros Colmar brought a lot of very fine fruit, the 1st prize being awarded to Mr. A. Smith, gr. to H. Sewell, Esq., Warren Hill, Loughton, Essex, his fruit being first-class in all points; 2d, Mr. J. Summers, gr. to the Earl of Scarborough, Sandbeck Park, Rotherham. This fruit ran the winner very close, still the bunches were less symmetrical than those; 3d, Messrs. H. Lane & Son, Great Berkhamsted, Herts, with fruit fine of berry but not of bunch. For the three best bunches of Black Alicante Grapes Mr. W. Pratt was again in the 1st place, his bunches being of immense size, but with not corresponding berries; 2d, Mr. W. Howe, gr. to Henry Tate, Esq., Park Hill, Streatham, with a well coloured good sample, and the bloom without blemish; 3d, Mr. J. Worthing, gr. to A. Moss, Esq., Chadwell Heath, with another fine lot, the bloom also very fine. Messrs. W. Wildsmith, J. Hudson, and H. Lane & Son showed fine fruit in this class. For the best three bunches of Madresfield Court.—1st, Mr. J. Roberts, who had medium-sized bunches of superior quality in all points; 2d, Mr. J. Woodbridge, with a beautiful sample; 3d, Mr. J. H. Goodacre, with small bunches but good in other points. For the best three bunches of any other variety of Grape other than those already noticed.—1st, Mr. J. Hudson, for perfect Alnwick Seedling, the bunches being of the customary medium size; 2d, Mr. R. Gilbert, gr. to the Marquis of Exeter, Burghley House, with well coloured Gros Maroc, fine of bloom, but which had got rubbed in transit; 3d, Mr. Summers, with Black Barbarossa. The prizes for three bunches of the highest flavoured Grapes were awarded, the 1st to Mr. Woodbridge, for exquisite Muscat Hamburghs, well coloured but small of bunch; 2d, Mr. J. Roberts; 3d, Mr. J. Hudson, both being of the first-named kind, the competing varieties of the other exhibitors being White Frontignac and White Muscat. For any variety certificated by the Royal Horticultural Society.—1st, Mr. W. Wildsmith, with Gros Maroc; 2d, Mr. J. Hudson, with Alnwick Seedling (Certificate to Mr. Bull, December 6, 1876); 3d, Mr. W. Allan, for Mrs. Pearson. The only award made, a 1st, for fruiting Vines in pots of the sorts Gros Colmar, Foster's Seedling, Lady Downe's, and Alicantes, fell to Messrs. H. Lane & Son.

PINES.—There were but few Pines shown, these fruits not being included in the schedule, and those shown, but not for competition, were awarded extra prizes, viz., four splendid examples of Smooth Cayennes brought by Mr. Chas. Ross, Welford Park, one of which weighed 9 lb. 7 oz., and the others not falling far short of that weight; and one other Smooth Cayenne that was sent by Mr. Nicholas, Castle Hill Gardens, South Molton, that had a weight of 9 lb. 10 oz.

As may be anticipated the prizes for Strawberries brought poor competition. Mr. Roberts had the only dish of alpine or Quatre Saisons in a fair sample of the latter variety; and with a single dish of any other variety, Mr. W. Church, Brodsworth Hall, Doncaster, was 1st, with a fair sample of Vicomtesse Héricart de Thury; Mr. H. W. Ward, gr. to Earl Radnor, Longford Castle, was 2d, with the same variety.

APPLES.—Dessert Apples made a fine show, there being not less than eighteen lots of three dishes staged. With many kinds colour was exceedingly striking, standing out almost like scarlet flowers. Mr. Haycock, gr. to Roger Leigh, Esq., M.P., Barham Court, Maidstone, was 1st, with, if dull looking, at least superb samples of Cox's Orange Pippin, Ribston Pippin, and Mother Apple. Another South-east grower came 2d in the person of Mr. J. Staples, Chipstead Gardens, Sevenoaks, who had Devonshire Quarrenden, rich in colour; Worcester Pearmain, very fair sample, and a beautifully red-striped conical form, staged as Red Astrachan, but which is really the West of England Redstreak, and more nearly resembles Worcester Pearmain in form. Mr. A. Waterman, gr. to H. A. Brassey, Esq., M.P., Preston Hall, Maidstone, came 3d, with pretty King of the Pippins, Worcester Pearmain, and Gravenstein, a kind that is not handsome, and although admitted as a dessert is really most generally classed as a kitchen variety. In other lots were Belle Gris, small, roundish, and rich coloured; Eugénie, broad, conical, and yellow in colour; Jacob's Strawberry, the fine and beautifully red-striped Apple certificated recently, and by the same exhibitor the Incomparable, a distinct semi-conical square-angled form, eye depressed, skin greenish-yellow, speckled russet and heavily flushed with rosy-pink—altogether an attractive kind. We may state that this latter is known at Chiswick as Glory of England, and has been elsewhere shown as Gascoyne's Seedling. As to Jacob's Strawberry, the stock of which has been secured by Mr. G. Bunyard, of Maidstone, and which, whatever it may be, must presently become a most popular market Apple, there seems, we learn from Mr. Bunyard, some doubt as to its identity with another name, and this he hopes shortly to clear up, for his own satisfaction and that of the trade, before the kind is put into commerce.

Kitchen Apples made a grand show; indeed, of the nineteen lots of three dishes staged we must say we have seldom seen better average size and quality. A veteran exhibitor of these fruits, Mr. Ross, gr. to C. Eyre, Esq., of Welford Park, Newbury, was 1st, with gigantic Lord Derby, huge Stirling Castle, and fine though not handsome Mére de Ménage. Mr. Haycock was 2d, with a singularly even, handsome collection, comprising the finest dish of Peasgood's Nonsuch we have seen, Belle Dubois or Gloria Mundi, and Warner's King—the whole lot having, if just a little less weight than the 1st lot, at least much more of beauty. The judges, however, seem to have preferred size to symmetry, which is doubtful practice. Mr. Waterman was 3d, with Peasgood's Nonsuch, Warner's King, and Blenheim Pippin. Of other good samples were Emperor Alexander, Lord Suffield, Golden Noble, and Beauty of Kent.

PEARS.—There were but seven lots of Pears staged, some of which were not first-rate. The best, fine and handsome samples of Durandeau, Doyenné Boussoch, and Pitmaston Duchesse, were staged by Mr. Haycock. Mr. G. Goldsmith, The Gardens, Hollanden, Tonbridge, was 2d, with good Williams' Bon Chrétien, Brockworth Park, and Doyenné Boussoch; and Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Erleigh, near Reading, was 3d, with Brockworth Park, Jersey Gratioli, and Souvenir du Congrès.

PLUMS.—There was a good muster of Plums, prizes being offered for the best two dishes, and in each these went to Pond's Seedling and Golden Drop. Mr. J. Staples, Mr. S. Ford, Leonardslee; and Mr. J. May, gr. to Captain Le Blanc, Barnet, took the prizes in the order given.

PEACHES were in grand form, not less than twenty-eight dishes being staged, and most of the samples were first-class. Here Mr. J. Harris, gr. to Mrs. Vivian, Singleton, Swansea, was 1st, with superbly coloured and large fruits of that splendid kind, Sea Eagle; Mr. Wildsmith was 2d, with finely coloured large Nectarine Peach; and Mr. Haycock was 3d, with good Lady Palmerston. The yellow-skinned Exquisite, Princess of Wales, and Late Admirable, were also well shown.

VEGETABLES.—A very fine display was made of vegetables, the class for eight kinds bringing eleven collections, the quality throughout being exceptionally good. Mr. J. T. Miles was 1st, with handsome and large Cave's Pinesfield Onions, very distinct; James' Scarlet Carrots, Edgcote Seedling Potatos, Canadian Wonder Beans, Exhibition Brussels Sprouts, Improved Masters' Prolific Cucumber, green and handsome; Green Globe Artichokes, and rich coloured Stamfordian Tomatos. Mr. Haines, gr. to Earl Radnor, Coleshill, Berks, was 2d, with splendid Rousham Park, white Spanish Onions, Major Clarke's Celery, Stamfordian Tomatos, very handsome; Intermediate Carrots, Reading Russet Potatos, Champion Runners, Purley Park Cucumbers, &c. Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Broad Ashton, Trowbridge, who was 3d, had clean but rather big Parsnips, good Telegraph Cucumbers, Bread-fruit Potatos, &c.

Amongst the various collections not intended for competition was one from Mr. T. Rivers, nurseryman, Sawbridgeworth, in which some fine large seedling Pears were conspicuous. These were the produce of a fruit of Louise Bonne of Jersey, the male parent being unknown. In some respects, and chiefly in the green and red-brown tints and warty appearance of the rind, they bore resemblance to that kind, their size being above that of an average Louise Bonne. Some Plums were also noticed, good late culinary kinds, viz., Grand Duke and Monarch, reddish-purple, medium-sized fruits, the first-named seldom ripening out-of-doors before October 10. Mr. Gladstone Peach, one of the largest and most luscious of the late freestone kinds; Exquisite, a yellow Peach; Princess of Wales, Albatross, Lord Palmerston and Lady Palmerston Peaches among the better known kinds; good examples of Rivers' Nectarine Peach, and a few varieties of dessert Pears, completed this interesting collection. Messrs. Paul

& Son, The Old Nursery, Cheshunt, had a large collection of culinary and dessert Apples. A collection of fifty-four dishes of Apples and six of Pears came from Messrs. Cheal & Sons, Crawley, and several cordon Apple trees, loaded with fruit.

FLOWERS.—The flower section of seasonable out-of-doors subjects was also of some interest and attractiveness, as seen in the stands of Mr. T. Ware, who had stands of Dahlias, double and single blooms, and of D. Constance, D. Juarezi, &c. Mr. Chas. Turner, who had also show and single-flowered Dahlias. Messrs. Paul & Son, The Old Nurseries, Cheshunt, had the large number of ten dozen show and fancy Dahlias, supplemented with some fine seedling single varieties, and boxes of hardy flowers. Messrs. Rawlings Bros., Romford, showed some seedling show and fancy Dahlias, of fine quality, as well as several boxes of older varieties of the same flower. Messrs. W. Paul & Son, Waltham Cross, had eight boxes of Rose blooms. Messrs. Keynes, Williams & Co., Salisbury, were exhibitors of many stands of show and other Dahlias; and Mr. Campbell, of Cove Gardens, Gourock, of Gladioli. A quantity of splendid Lapageria blooms came from Mr. Humphreys, Nash Court, Faversham, these being a great advance on L. rosea.

Mr. Barron sent from the Society's Gardens, Chiswick, twenty-six varieties of Maize, which showed varying degrees of ripening, thanks to our unusually warm summer. Apparently ripe were Zekler, a Hungarian kind; Cinq quantino, Early Yellow Motteaux, Yellow from Benary, Yellow Auxonne, and Red-seeded, all small-headed varieties, with generally small corns. From the same gardens came likewise twenty-six kinds of Grapes, including many of the American kinds, mostly in a ripe condition.

Messrs. Carter & Co. showed a seedling Potato, the result of a cross between Carter's Champion Forcing and the Ashtop Fluke. The produce and growth of one set was prodigious, but very small in size, the result of this being only the fourth year from seeding.

Cheltenham Show.—The show of the County of Gloucester and Cheltenham Horticultural Society was held in the Montpellier Gardens, Cheltenham, on the 18th inst. There are few places more noted than Cheltenham as a fashionable centre, and with its population of upwards of 70,000 inhabitants there ought to be no better place for a flower show so far as attendance goes, but we have seen many show grounds in far smaller towns with a great many more visitors. In many respects the show was a very good one. The plants were admirable, the majority being well cultivated, effectively arranged, and very fairly judged, which is more than we will say of some things further on. Mr. Cypher was at home here in two ways, viz., close to his nursery, and easily at the top of the prize list. His groups and specimens were a show in themselves, and his floral arrangements delightful. For eight stove and greenhouse plants, Mr. Cypher was 1st, with Ixora Pilgrimi, Allamanda Hendersoni, Erica Austiniana, Phænocoma prolifera Barnesii, Allamanda nobilis, Erica Irbyana, Allamanda Schottiana, Clerodendron Balfourianum, all fine specimens profusely bloomed. For four stove and greenhouse plants, Mr. Wythes, gr. to Captain Stewart, was a good 1st, with Allamanda Hendersoni, Clerodendron Balfourianum, well bloomed, his others being inferior; the Eucharis amazonica was a big, healthy plant, but with few flowers. The next class was the most important of all, being a collection of thirty ornamental plants arranged for effect, and the bulk of the subjects were not the small table-plant-like specimens generally used in such cases, but the 1st prize group contained many of Mr. Cypher's biggest and best plants. These, and the others competing, were staged to fill up the centre of the largest tent, with a "face" to each side, and they were highly attractive. Large Palms, highly-coloured Crotons and Cordylines, Cycas, Pandanus, Allamandas, Ixoras, &c., composed Mr. Cypher's effective group, and it well deserved the highest award, not only on account of the artistic arrangement, but also for the undeniable merits of the individual plants. This was the last time in 1884 that the public will have an opportunity of inspecting Mr. Cypher's wonderful plants. In going on with the ornamental groups, the 2d place was taken by Captain Stewart (gr., Mr. Wythes), his finest specimens being Areca Verschaffeltii, Kentia Belmoreana, Dracæna australis, and Latania borbonica. Messrs. Heath & Son, Cheltenham, were 3d, their Crotons being deficient in colour, and throughout there were too many duplicates. Exotic Ferns were very attractive, Mr. Cypher taking the 1st place with a beautifully fresh lot of twelve, amongst which Dicksonia antarctica, Alsophila australis, Neottopteris australis, Davallia Mooreana, D. fijiensis, and the rare Alsophila elegantissima were conspicuous. Mr. Cook, gr. to J. Taylor, Esq., was 2d. British Ferns were small fresh plants, the best coming from Mr. E. Smith, Messrs. Hopwood & Son, Mr. E. Smith, Messrs. Hopwood & Son, and Mr. Lodge. Achimenes, from R. T. Singwood, Esq., Sir A. Ramsay, and C. Colmore, Esq., were well grown plants, not very full of flowers. Fuchsias, from Mr. E. Smith, Mrs. Gillilan, and H. Hamilton, Esq., were very good for the season. Zonal Pelargoniums, from R. T. Singwood, Esq. (gr., Mr. Lewis), were in fine form, his best plants being Mrs. G. George, Alice Spencer, De Lesseps, and Sophia Birkin. The 2d prize was awarded to Mr. Mattock, Oxford. The 3d lot, from Mr. Sparks, gr. to H. Chapman, Esq., had scarcely any leaves on them. For an ornamental basket of plants, showing the highest taste in arrangement, on a stand, Mr. Cypher was deservedly 1st, Messrs. Heath & Son being 2d, with a less graceful arrangement; and Mr. Mansfield was 3d.

Cut flowers were of good quality. Amongst the stands of double Dahlias there were some of the finest blooms we have seen for a long time. Mr. Hobbs, of Bristol, was 1st with twenty-four blooms, all unnamed, but a grand lot; 2d, Mr. Shaw; and 3d, Messrs. Heath & Son. We were surprised to see nurserymen exhibiting these flowers unnamed! In the class for nine bunches of single Dahlias, Mr. Cypher was an easy 1st, his mode of setting them up and embellishing each group with a fringe of Maidenhair Fern being highly attractive; 2d, Mr. Mattock, Oxford; and 3d, Mr. Smith, Cheltenham, with "bundles," not by any means pretty. French Asters were uncommonly good from Mr. Mattock, so were the German ones from Mr. Hobbs. Only two boxes of stove and greenhouse blooms were staged, Messrs. Heath being 1st with a stand in which there were many Orchids; 2d, Captain Stewart, very attractive. Roses were not numerous or of the best quality, and the intense heat in the tents soon caused the blooms to open and fade. Messrs. Heath were 1st, and Messrs. Jefferies, of Cirencester, were 2d, for twelve varieties. For three vases of cut flowers for the dinner-table, displaying the greatest taste in arrangement, Miss Cypher, as usual, far outdistanced all competitors with a truly charming, light, and gracefully-filled triplet; Mr. J. Pilgrim being 2d with others that were far too crowded, as were also those from Mrs. Mansfield and Mrs. Gillilan in another class. The bouquets were greatly admired, especially the 1st prize one, which came from Miss Cypher, and was faultless in flowers, blending of colours, and general finish. Mrs Mansfield and Mrs. Gillilan followed as respectively 2d and 3d.

FRUIT.—In some classes this was very good. For two bunches of black Grapes Mr. Webb, of Malvern, was deservedly 1st, with very fine Black Hamburghs; Mr. James, gr. to the Rev. G. Coventry, following closely with the same variety. For one dish of black Grapes Mr. Webb was again 1st with Black Hamburghs, and Mr. Hunt, gr. to T. P. W. Butt, Esq., was 2d, with small bunches of Black Alicantes; Mr. Cook, Cheltenham, was 3d. In white Grapes, consisting of two dishes, Mr. James was a good 1st, with splendid bunches of Muscat of Alexandria; Mr. Clift, gr. to Mrs. Greaves, was 2d; but for this position the 3d prize lot from Mr. Webb was generally better fitted, which were very perfect specimens of Golden Champion. For a collection of fruit, six dishes, Mr. Child, gr. to the Earl of Coventry, was 1st, with Muscat of Alexandria, Lady Downe's, Peaches, Nectarines, Melons, and Pears, all in excellent condition; 2d, Mr. Cook; 3d, Mr. Webb—the latter having a beautiful Melon and excellent Black Alicante Grapes. There was nothing worthy of note in the collections of four dishes of fruit, all the exhibits being badly dished up, the Grapes particularly so, and to this must be added somewhat inferior quality. Peaches and Nectarines were not extensively shown. Messrs. Cook, Webb, and Wythes being the prize-winners for Peaches and Nectarines, which were not of particularly good quality. Melons were a nice lot, Messrs. James, Mansfield and Child gaining the prizes in the green or white-fleshed section; and Captain Tickell and Messrs. Clift and Mr. James in the class for scarlet-fleshed fruits. Of Plums there were but few, and Apples and Pears did not do justice to such a splendid fruit county as Gloucestershire; but probably exhibitors did not know well what to bring, as in the prize list it was only stated "Apples and Pears, nine of each," which, we presume, might include from one to an unlimited number of dishes.

Vegetables and Potatos were exhibited in considerable quantity, but the quality of much of it does not demand special mention of any one lot. Much of it was rather fantastically shown, and Potatos were in many instances rather coarse samples. The baskets of salads were a grand feature in the centre of the vegetable tent; they were large hampers placed on ornamental stands and crown-shaped handles, all decorated with salad matter—hundreds of Radishes cut into curious shapes—were suspended all round, and the main body was composed of Endive, Lettuce, Mustard and Cress, Tropæolum blooms, Cucumbers, &c.

Mr. Phillips, florist, High Street, Cheltenham, was an extensive exhibitor of many well grown little plants and Ferns, all very ornamental and useful for vase and room decoration. *South Wales.*

Massachusetts Horticultural: *Boston, Aug.* 23.—At the weekly exhibition held to-day a large display of Asters was made, it being prize day for them. Mr. E. Sheppard was awarded the 1st prize for thirty blooms not less than ten varieties of Truffaut's Pæony-flowered. Mr. John L. Gardiner showed Victoria-flowered, and was awarded 1st prize for thirty blooms, in not less than eight varieties. Mr. C. M. Hovey received 1st prize for pompons, thirty sprays, not less than six varieties, one spray of each, and in addition to the abovenamed exhibitors good displays were made by many others.

John C. Hovey showed specimens of Amaryllis Hallii, a very pretty species from Japan, which I believe is quite hardy here. Mr. C. H. Hovey contributed Canna Mentoni and Tigridia pavonia alba. Mr. Edwin Fewkes showed four Cannas, namely, C. gladioliflora, C. Ehemanni, C. Rendatler and C. Premices de Nice; also the following list of Dahlias:—Virginia, Little White Aster, Little Willie, Annie Pritchard, Mr. Compton, John Wyatt, Nab, Meteor, Champion, Rollo, James Pervice, Mrs. Saunders, Adelaide, and Little Herman. The Dahlia was also shown by other contributors. Mr. Franklin Batchelder exhibited a large collection of named Gladioli, viz., Leander, Chameleon, Meyerbeer, Baroness Burdett Coutts, Africaine, Titania, De Lesseps, Mrs. Stewart, President, Norma, Horace Burdett and Blandina. James Cartwright also made a large display of Gladioli, and Mr. W. H. Spooner showed three seedlings. Mr. W. J. Stewart exhibited Taylor's Improved Aster, and Mr. D. Zirnziebel a variety named Improved Boston Market (white). Mr. John Robinson sent specimens of Tamarix chinensis, with delicate flowers and foliage. Mrs. P. D. Richards contributed a collection of wild flowers.

The fruits were well represented. Among the Pears the Williams were the most prominent. The following varieties of Pears were also noticeable:—Bartlett, Rostiezer, Tyson, Clapp's Favourite, and Quimper, also the Dearborn. Hale's Early and Early Canada Peaches were shown, also a dish of McLaughlin Plums.

In the vegetable department the Potatos were represented by Perle de Savoy and Hebron. Large Lima Beans and Peppers were shown.

August 30.—At the exhibition of to-day large displays of Tropæolums and Marigolds were made, it being prize-day for them. Mr. A. A. Hipon showed a large collection of Tropæolums, which consisted of many varieties, from pale yellow to brown, and was awarded 1st prize. He also took the 1st prize for Marigolds. All these flowers were well represented to-day. The single Dahlia was shown by a number of contributors; Mr. Edwin Sheppard took the 1st prize, with the following varieties, namely, Lucifer, Cloth of Gold, Tyro, Scarlet Gem, Maud Wealan, Lutea grandiflora, Acquisition, Defiance, Harlequin, Striata, Solfaterre, Norah, Thalia, H. Baron, Evening Star, Ruby, Lovely, Amber, Canary, Gracilis, Perfecta, Purple Prince, White Queen, and Purple Paragon. Mr. Batchelder contributed a large collection of named pompon Dahlias, viz, Scarlet Gem, Little Mabel, Sappho, Dora, Hercules, Beatrice, Prince of Liliputs, Rubus centifolius, Lady Blanche, Hedwig Poluris, Little Ned, Voltaire, Rougier Chauviere, Lilac Pompon, and No. 14. Mr. Joseph Minchin showed a Dahlia plant with ten distinct varieties on the same (?). Mr. D. Duffley exhibited several pots of Amaryllis Belladonna in fine flower, and was awarded a Silver Medal. Mr. D. Zirnziebel showed new Golden Dwarf Marigold, and a collection of Scabiosa. Mr. M. le Baron Matlapoisett exhibited a fasciated stalk of Lilium auratum, which has had more than sixty flowers. Mr. James Cartwright made a large display of Gladioli. Mr. Anthony McLaren showed a large collection of herbaceous plants, all carefully named, viz., Euphorbia corollata, Lilium longiflorum, Ajuga reptans, Lychnis chalcedonica var. alba, Anemone japonica, Veronica pulchella, V. virginica, Achillea ptarmica, Pentstemon barbatus, Lobelia cardinalis, Convolvulus, Lychnis chalcedonica, Lysimachia clethroides, Delphinium, Sedum oreganum, Euphorbia album, and Statice limosum.

Mrs. P. D. Richards, West Medford, Massachusetts, exhibited a collection of wild flowers, which consisted of twelve species of Asters and thirteen Solidagos. Up to the present time this lady has shown no less than 175 species and varieties of wild flowers, not including twenty-seven species and five varieties of Ferns, and a large number of the commoner kinds of flowering plants. The general displays of cut flowers from several contributors were uncommonly good.

In the fruit department we noticed among the Apples the following varieties, namely, Williams, Gravenstein, Somerset, Coolidge, Favourite, Stump, Strawberry, Honey Sweet, Duchess of Oldenburg, Sweet Bough, and Pumpkin Sweet. Pears.—Bartlett, Tyson, Clapp's Favourite, Flemish Beauty, Brandy Wine. Peaches.—Hale's Early. Plums.—Washington, Bradshaw, Damson, and Jefferson. Grapes.—Champion. The display of vegetables was large and excellent.

A HOLIDAY TRIP IN INDIA.

(*Continued from p.* 362.)

THE NILGIRIS.—From Bangalore I took the train to Metapollum, at the foot of the Nilgiri Mountains. Between this station and the Kallar River there is a forest of the Betel-nut Palm, which is very fine. Conoor is the first hill station one comes to. It is an exceedingly pretty place, with Tea, Coffee, Cinchona, and Eucalyptus plantations in all directions. Some of the Eucalypti I thought 100 feet high. When young the E. globulus makes the hill-side look quite blue. Camellias thrive in the open air, but they have a horrid way of chopping off their heads. I think this both a stupid and a barbarous way of pruning a lovely bush. In Florence, I have seen Camellia bushes 20 feet high. As to Heliotrope, this appears to be the home for it. Opposite my hotel window there was a bank of Heliotrope 80 paces long and 3 feet broad, covered with exquisitely scented flowers. It grows like a weed at Conoor. Tree Ferns grow well, I saw some 10 feet high. Here I saw a fine specimen of the Agave americana variegata. It was 6 or 7 feet high, and a perfect picture; also a Brugmansia suaveolens, 12 feet high, covered with its enchanting white trumpet-flowers. Conoor ought to be a fine place for Oleander, I did not, however, see one. Sim's Park is a pretty place enough, but the whole of it is dotted with trees of all sorts

without the ghost of a notion of grouping for effect. All this is very exasperating to an artistic eye.

Ootacamund is certainly colder and drier in winter than Conoor. It is much more elevated, but on the whole, Conoor is a prettier place. Ooty, as they call it, is much more extensive, and commands far finer views. Both at Conoor and Ooty the roads are passable for pony carriages, and also for larger vehicles at Ooty; there are forests of Eucalyptus globulus everywhere. It is quite changing the aspect of the hills; the Acacia melanoxylon is also plentiful; the latter is a grand tree; Grevillea robusta also grows well. Another Australian tree is the Acacia decurrens. It sends its roots in all directions, throwing up root-shoots all along. They are beginning to fear that, if it has time enough, it will overrun the whole place, and will be to the Nilgiri hills what the rabbit has become to Australia. The owners of property about Ooty appear to have been bitten by an Acacio-Eucalyptic mania. They think of planting nothing but "Ashtilon" and "Blogoom," as the natives have christened them. At Ooty they make hedges of the scarlet Pelargonium, a little pink Rose, and the little Fuchsia that grows so well in the South of Ireland and the Channel Islands, but they are all "higgledy-piggledy." A double scarlet Pelargonium trained against the wall of a house looked well. The gem of Ooty, however, is the Richardia æthiopica. In many of the watercourses are to be seen small forests of it with magnificent tall foliage, and masses of white flowers 10 inches from base to tip, and proportionally broad. It is worth coming to the Nilgiri to see this fine thing. A visit to the Botanic Garden was rather disappointing; it contains many interesting trees. I saw here some good specimens of Datura sanguinea, and a hedge of Heliotrope more than 130 paces long, and about 3 or 4 feet broad. Hitherto I fancy Cinchona planting had absorbed most attention. They have hothouse nurseries for Cinchonas, and at the time I visited the place they were filled with seedlings. The wild crimson Rhododendron, with its charming foliage, is very lovely, yet it is never used for decorative purposes. In the Nilgiri they prick out young Eucalypti into cylindrical pots made of Bamboo basketwork, and when established they are planted out, basket and all. This dodge I fancy might be used for other trees and climates. The roots are not disturbed, and the pot soon rots. The life of a planter in the Nilgiri ought to be a charming occupation. Tea, Coffee, and Cinchona, all do well in one place or another. At present quantity appears to be the object, but I fancy a time will come when smaller estates, with higher cultivation and better produce, will probably pay as well as large estates do now. I think the future of these products is great, not perhaps in value, but in extent of use. The people of India have not been tapped yet, as far as Tea and Coffee are concerned. Africa has not been touched as far as regards Tea. The manufacture of theine and caffeine may yet possibly absorb millions of pounds of Tea and Coffee. Wherever there is a change of temperature and consequent chill, fevers, neuralgias, &c., will occur—that is, everywhere—and quinine will be used if cheap enough. I fancy many young fellows come out as planters who have not a ghost of a notion what plants mean. They hear there is lots of sport—"shikar"—and out they come provided with a battery of sporting guns, and hope to make a fortune in five or six years! Thus I fancy a good deal of loss of time and labour occurs from simple want of the proper knowledge. One afternoon, on my return to Conoor, I was strolling about, and saw an opening to a hill; I went up to see what it was like. The hill had Tea, Cinchona, and Eucalyptus, all mixed up. From the age of the different plants I came to the conclusion that the owner had first planted Tea—very few then remained. Then he must have tried Cinchona, and that did not do. Finally he must have said, "Hang it! I must get something out of this property," and planted it with "Blogoom." It appeared a dry waterless hill, without a trace of leaf-mould anywhere. This was a specimen of what an untrained planter would do—everything at random, as if he were at a gambling table.

TRINCHINOPOLI.—After leaving the Nilghiri I went to Trichinopoli and Madura to see the famous temples there. In those latitudes they use the Agati grandiflora, the "Agast" of the North-west Provinces (a small tree with large and quaint Pea-shaped flowers), for two purposes—1st, the leaves and tender shoots and flowers are extensively used by natives as vegetables; 2d, when the tree grows it is used for shading the "Pâu" Vine and Turmeric, or such-like crops. They sow its seed thickly on ridges about a foot or so broad, and use it while young for vegetables, leaving here and there one plant to grow into a small tree. The heads of these trees then meet, and as the leaves are long and pinnate they form a very effective "chickhouse" shade. Without some such shading the direct sun's rays would scorch the tender plants beneath. The trees down South are principally Cocoa and Fan Palms. I fancy the latter is a Borassus and used for making "toddy." Of all pretty things a grove of Cocoa-nut Palms is certainly not one of the least. When about one-third grown, and under that, it is one of the most charming of Palms, and yet curiously enough, only between Pasur and Unjaloor, and further on near the South Indian Railway, have I seen any attempt to plant an avenue of Cocoa-nut Palms put in singly. Rows, three deep, would make a marvellous avenue, so would the Borassus, Phœnix, and other Palms. It is strange that down south I have seen no crops of Pine-apple. With the climate and moisture of South India it would appear the Pine-apple would grow like a weed one of the favourite crops is the Plantain. What gardens might be made in South India with little or no trouble!

The Hindoo temple of Madura astonishes one with its immensity, and infinity of monolith pillars—many of them elaborately, though grotesquely carved It is in the hands of fanatic Hindoo priests, who make a bazaar of it. It is surrounded by native buildings, and the visitor is persecuted by a howling crowd. The whole is dirty and pervaded by bad smells.

THE DECCAN.—On my return journey to Upper India, I visited Hyderabad and Secunderabad in the Deccan. I thought them both uninteresting places, and the surroundings nothing but a country of granite rocks and stones, with some large tanks. One wonders where His Highness the Nizam gets his revenue from. They say all the country is not like that, and in the proper season a great deal of Rice is grown on terraced land. In the winter, however, the country looks as if granite quarries would be a success. The public garden at Hyderabad is unique; all its roads are lined on each side with three rows of ugly crooked pots, with hardly anything in them. Some miles out of Secunderabad is a picturesque Mahometan shrine, called Meo Lali. It is on the top of an immense granite rock. The road thither is like a desert, but here and there, where wells have been dug, it is astonishing how fertile the soil is, and how luxuriant the trees on it are. In nooks and corners I have seen splendid oases, containing Cocoa and Areca-nut, and Borassus Palms, Plaintains, Tamarind, and Custard Apples (the latter, by-the-bye, grows wild in the Deccan), Mangos, Papayas, Agaves, Poincianas, Hibiscus, &c. This would appear the region to introduce from Arabia the scores of fine kinds of Date Palm, of which Palgrave speaks so highly; and this would appear also the place to introduce the fine kinds of Prickly Pear, which does so well in Malta and Sicily on rocky soil; the Vine and the Olive might probably do well also. The soil, which is formed of the detritus of granite rocks, with ordinary manure and water, is immensely fertile. All along the railway from about Raichore to Dhond and Manmar, for hundreds of miles, and as far as the eye can see on both sides of the railway, there is scarcely any cultivation, only here and there in patches. Scarcely a village is to be seen, and not a tree, beyond now and again one, a few feet high. In all that tract of country, I did not notice more than a dozen head of cattle. There are immense tracts of territory, in the state of prairie, with grass growing over the surface everywhere. There is no such thing as "oosur" (barren) land, as in the North-west Province. Here and there rock crops up above the surfaces, but mostly it is a grass covered plain. They say the rock, being near the surface, and the rains being uncertain, the land is not brought into cultivation. This may be partially true, nevertheless, near the railway stations Mango and "Neem" trees, with irrigation, do very well; and at one particular station, Chitali, I saw Oranges, Guava, Promegranates, and Mulberry growing most vigorously. I have a notion that this country might be terraced, and faith! there are stones enough to terrace the whole country. Then either by wells or tanks, or canals, I believe this land might be reclaimed. The climate is fair, in winter charming, and the Carob, Olive, Fig, Pomegranate, Mulberry, Vine, Orange, Prickly Pear, all delighting in rocky soils, would probably do well. I believe the real difficulty is about water. From what I saw of the country round Hyderabad and Secunderabad I am inclined to think that the soil, although slight, would do much if water could be collected in reservoirs or brought by canals. I do not believe in the rock theory. Just consider what they do in Malta, Gozo, and Sicily, with the rock near the surface. The markets there are always stocked with vegetables and fruit, but then they collect and store every drop of water they can. In other parts of India, where it is important that water should be stored, you see a great want of sense. On the hills, for instance, the rain-water is allowed to run away, and then mules are sent to the bottom of the "Khuds" to bring water from springs—not only for drinking purposes, but for all purposes! In most towns of Italy all the water from the roofs of the houses is collected and stored.

All about the country I have been just describing, and further south, there grows a wild Prickly Pear: I think it is called Opuntia Dilleni. It bears a small red fruit, which is tasteless, but which poor people eat. It is almost certain that the Mediterranean Prickly Pear—Cactus Opuntia they used to call it—can be readily grafted on the Deccan and South Indian indigenous kind. In Sicily at certain seasons the people live on the fruit of the Prickly Pear, which, though it contains many seeds, is delicious.

Before returning to Etawah, on reaching Allahabad, I took a run to Calcutta to see the Exhibition. I went to the Royal Botanic Garden at Seebpore, and was much delighted to see there an avenue of Borassus flabelliformis, which is magnificent, and quite unique; another of Saraca and Mahogany, one of Terminalia Catappa, and one of In Saman, alternating with Uvaria longifolia. There are also avenues of Oreodoxa regia, with its clean, pillar-like stem. I thought that an avenue of Elæocarpus longifolia would be a glory. I saw here fine specimens of the Areca madagascariensis, with its Bamboo-like stems and feathery heads, and many other fine things too numerous to mention. All this shows what can be done in that climate with proper selection of trees. You go all over Calcutta and will hardly see a tree worth looking at, except perhaps at that little oasis called the Eden Gardens.

There is one thing I saw during my travels which I must not forget to mention in conclusion. At the hotels of Bangalore, Conoor, and Ooty, the table-servant, or "boy," as they call him in South India, used to decorate the dining-table cloth every day with various coloured leaves and flowers disposed in patterns. The leaves used were those of Coleus, Croton, &c., and the flowers were Fuchsias, Cupheas, and various others. Sometimes the table looked charming.
E. Bonavia, M.D., Etawah.

Variorum.

COTTAGE GARDENS IN WILTSHIRE. — Whatever might be the causes operating to produce such a result, it must be admitted that in some of the villages on and near to the estates of the Marquis of Lansdowne at Bowood the cottage gardens are objects of considerable interest, for they are not only well cropped and managed, but they are also very gay. Flowers play an important part, and at the exhibition of the Chippenham Horticultural Society held a few days ago the cut flowers shown by cottagers were very fine, and their extent, as well as their high quality, would have astonished not a few of our leading horticulturists. In making a journey through some of the villages we saw fine standard Roses bearing flowers of excellent quality, choice double and single Dahlias, Stocks, and Asters of marvellous development; African and striped Marigolds, the latter of excellent quality; Zinnias, Helichrysums, very fine; Everlasting Peas, Phlox Drummondi, Pelargoniums, Fuchsias, and many other showy things, all well cultivated. Nearly all these are grown for exhibition purposes, and there is a very extensive and keen competition among the cottagers. At the Chippenham Horticultural Society's show there was a perfect surprise in store for visitors in the cottagers' tent; the cut flowers generally were of much better quality than those shown by gentlemen's gardeners and others. Especially was this true in the class for six and three

varieties of double Stocks. Generally three spikes formed a bunch, and they were of the very best quality —large, fully double flowers richly coloured. The promoters of the Horticultural Societies about the Bowood district, and especially those of Calne and Chippenham, do their utmost to encourage cottage gardening not only in offering prizes for the best cultivated and best kept gardens, but also for the best produce from them, and this in a much more comprehensive form than is usually found to prevail. Bread-making is also encouraged, and at the exhibitions of both the above places loaves of cottage-made bread appeared on the tables, while cooked Potatos always form a good feature at the West-country shows. The Wiltshire cottagers who come within the sphere of operation of these exhibitions appear to be careful, industrious, and thrifty sons and daughters of toil.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, SEPTEMBER 24, 1884.

Month and Day.	Barometer.		Temperature of the Air.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		Wind.		Rainfall.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 40 years.	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.		
Sept.	In.	In.	°	°	°	°	°	°				In.
18	30 18	+0 34	82.0	59.0	23.0	68 2	+11.8	59 1	73	N. E.N.E.		0 00
19	30 07	+0.24	69 0	55.8	13.2	61.0	+ 4 9	54 3	79	E.		0 co
20	29.89	+0 07	72 5	53.7	18 8	61.3	+ 5.5	54.6	78	E.		0.00
21	29.56	−0 21	72 0	52 0	20.0	61.5	+ 6.0	55 6	83	S.W.		0.02
22	29 71	−0 08	65 0	52 0	13.0	56.8	+ 1.5	48 7	74	NNW		0.02
23	30 05	+0 27	63 0	47 5	15 5	54.2	− 1 0	45.7	73	N.W.		0 00
24	29.99	+0 22	61.8	48.5	13.3	55.3	+ 0.3	46 0	72	S.W. S.S.W.		0.03
Mean	29 92	+0 12	69 3	52.6	16.7	59.8	+ 4 1	52.1	76	Variable.		0 07

Sept. 18.—Very fine day and night.
— 19.—Very fine day and night.
— 20.—Very fine day and night.
— 21.—Dull morning; fine afternoon and night.
— 22.—Dull and overcast at times; fine night.
— 23.—Fine day and night.
— 24.—Cloudy and dull mostly; bright intervals. Slight rain during the evening.

LONDON: *Atmospheric Pressure.*—During the week ending September 20, the reading of the barometer at the level of the sea decreased from 30.14 inches at the beginning of the week to 30.02 inches by midnight on the 15th, increased to 30.39 inches by 9 A.M. on the 18th, decreased to 30.34 inches by 3 P.M., increased to 30.37 inches by midnight on the same day, and was 30.02 inches by the end of the week.

The mean reading of the barometer for the week was 30.17 inches, being 0.01 inch lower than last week, and 0.15 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 83° on the 17th, the highest on the 19th was 69°. The mean of the seven high day temperatures was 75°.9.

The lowest temperature in the shade in the week was 53°.7 on the 20th; on the 16th the lowest temperature was 61°. The mean of the seven low night temperatures was 57°.3.

The greatest range of temperature in one day was 23°.5, on the 17th; the smallest was 13°.2, on the 14th and 19th. The mean of the seven daily ranges was 18°.6.

The mean temperatures were—on the 14th, 62°.3; on the 15th, 65°.1; on the 16th, 68°; on the 17th, 70°.1; on the 18th, 68°.2; on the 19th, 61°; on the 20th, 61°.3; and these were all above their averages by 5°.1, 8°, 11°.1,, 13°.5, 11°.8, 4°.9, and 5°.5 respectively.

The mean temperature was 65°.1, being 4°.3 higher than last week, and 8°.6 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 141°, on the 16th and 18th. The mean of the seven daily readings was 132°.6.

The lowest reading of a minimum thermometer with its bulb placed on grass was 42°.5, on the 20th. The general mean was 46°.5.

Rain.—0.04 inch fell on the 15th.

ENGLAND: *Temperature.*—During the week ending September 20, the highest temperatures were 83°, at Blackheath, 80° at Truro, 79°.2 at Liverpool; the highest at Bradford was 69°.8, at Wolverhampton 72°.2, at Bolton 72°.3. The general mean was 75°.5.

The lowest temperatures were 46°.1 at Wolverhampton, 46.°3 at Nottingham, 49° at Preston; the lowest was at Plymouth, 57°.1, at Brighton 54°.3, at Blackheath 53°.7. The general mean was 51°.3.

The greatest ranges were 30°.6 at Nottingham, 29°.3 at Blackheath, 28° at Truro and Bristol; the smallest ranges were 17°.2 at Plymouth, 17°.9 at Bradford, 20° at Leeds. The general mean was 24°.2.

The mean of the seven high day temperatures was highest at Blackheath, 75°.9, at Truro 74°.4, at Bristol 73°.6; and was lowest at Sunderland, 62°, at Bradford 67°.3, at Sheffield 69°. The general mean was 70°.5.

The mean of the seven low night temperatures was highest at Plymouth, 58°.6, at Brighton 58°.2, at Blackheath 57°.3; and was lowest at Hull, 52°.1, at Sunderland 52°.6, at Wolverhampton 53°.4. The general mean was 55°.3.

The mean daily range was greatest at Blackheath, 18°.6, at Nottingham 17°.6, at Truro 17°.5; and was least at Sunderland, 9°.4, at Brighton 12°.4, at Plymouth 16°.6. The general mean was 15°.2.

The mean temperature was highest at Blackheath, 65°.1, at Truro 64°.2, at Plymouth and Bristol 63°.5; and was lowest at Hull, 54°.4, at Sunderland 55°.9, at Bradford 59°.6. The general mean was 61°.2.

Rain. — The largest falls were 0.79 inch at Bolton, 0.64 inch at Truro, 0.52 inch at Plymouth; the smallest falls were 0.02 inch at Sunderland, and 0°.04 inch at Blackheath. No rain fell at Hull during the week. The general mean fall was 0.29 inch.

SCOTLAND: *Temperature.*—During the week ending September 20 the highest temperature was 72°.5, at Perth; at Leith the highest was 65°. The general mean was 69°.4.

The lowest temperature in the week was 41°, at Perth; at Leith the lowest temperature was 49°.8. The general mean was 47°.8.

The mean temperature was highest at Paisley, 59°.7, and the lowest at Edinburgh, 55°.3. The general mean was 56°.9.

Rain.—The largest fall was 0.25 inch, at Edinburgh, and the smallest fall was 0.05 inch, at Dundee and Perth. The general mean fall was 0.12 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

ASBESTOS STOVE FOR HEATING PURPOSES: *J. W.* The stove may answer your purpose if means are made to carry off the products of combustion.

BERNE CONVENTION: *A. Z.* See our issue for Feb. 23, 1884, p. 246. All the States of Central and Southern Europe, and many of our own colonies.

BEST BOOK ON GARDENING: *Fungus. The Epitome of Gardening* (Black & Co.); inexpensive. Thomson's *Gardeners' Assistant* (Blackie); more detailed.

BROCCOLI AND CAULIFLOWERS: *L.* Broccoli differ from Cauliflowers only in their greater hardiness.

ERRATA.—Mr. Andrew Jardine was credited, in error, in our account of the Dundee Horticultural Show, with taking 1st prize for twelve fancy Pansies, instead of Mr. Andrew Irwine; and on p. 374, line 41, middle column, read "smut" for "yeast."

FUCHSIAS: *James Lye.* The blooms are those of strong-growing healthy plants, but neither the colours nor the shapes appear to us to differ from many others in commerce.

GRAPES DOING BADLY: *W.* Without knowing much more about your Vines—soil, border, house, ventilation, and general management—we cannot say anything.

NAMES OF FRUIT: *Mr. Kennedy, Croft Lodge.* 2, Reinette de Caux; 5, King of the Pippins; 8, Easter Beurré; 22, Ribston Pippin; 23, Claygate Pearmain; 50, Lord Suffield; 51, Dumelow's Seedling; 52, Golden Noble; 54, Beurré Orange; 76, Alfriston; 77, Small's Admirable.—*T. S. Apples:* 2, Claygate Pearmain; 3, Small's Admirable; 4, Dumelow's Seedling; 5, Cellini; 6, Court of Wick. *Pear:* Beurré Bosc.—*Robert Young. Apple:* Waltham Abbey Seedling.—*Walton. Apple:* Not recognised.—*C. M'Donald.* 1, Brunswick Codlin; 2, some local cider Apple unknown; 3, Mère de Ménage; 4, *Pear:* Colmar d'Eté; 5, Chaptal; 6, Gansell's Bergamot; 7, Passe Colmar.—*C. Tea.* 1, Summer Thorle; 2, Sturmer Pippin.—*Croft Lodge. Apples:* 2, Reinette de Caux; 5, King of the Pippins; 22, Ribston Pippin; 23, Claygate Pearmain; 50, Lord Suffield; 51, Dumelow's Seedling; 52, Golden Noble; 54, Blenheim Orange; 76, Alfriston; 77, Small's Admirable. — *Apple:* Keswick Codlin. *Pear:* Hessel. — *Fruit sent without address.* The Apple Keswick Codlin, and Pear Hessel.

NAMES OF PLANTS: *A. E. Y.* Euonymus europæus. — *W. S. M.* Vallota purpurea. — *A. F. Gedward.* Physalis Alkekengi, or Winter Cherry.—*J. S., Sleaford.* Solanum nigrum. — *C. W.* Iris fetidissima.— *A. E. B.* — Wretched scraps, withered beyond power of identification. No. 2 is Selaginella denticulata; 4 is the Southernwood (Artemisia Abrotanum; the others are not recognisable.—*D.* 1, Taxodium distichum; 2, a variegated and laciniated form of the common Lime.—*New Forest.* 1, Salix fusca, or repens; 2, Genista anglica. — *J. Scott & Co.* 1, Sedum carneum variegatum; 2, not recognised. — *W. S. M.* Antigonon leptopus. *N. Gorman.* Hydrangea quercifolia.

PELARGONIUM: *F. E. C. C.* The box contained some blue paper, half a Potato, and some scraps which were quite beyond recognition.

PERENNIAL SHAMROCKS: *B. R. Dunlop.* We presume you mean some variety of Oxalis; if so, these are best potted up now, in sandy peat and leaf-mould, with some good loam and dried cow-manure, placing them about 1 inch apart and 1 inch deep. Large pots are better for them than small ones.

POTATOS SPROUTING IN CUPBOARD: *L. W. Willett.* It is of constant occurrence, with varying results.

SEEDLING CARNATION: *W. Jamieson.* A very beautiful thing, with uncommon markings for a Carnation. By all means propagate it.

STEPHANOTIS FRUIT: *A. B.* If your plant is a young one, which we doubt, cut off the fruit; if old, it does not matter. The fruit is very poisonous.

VINE TWIGS AND GRAPES: *Correspondent.* The twigs, such as sent, may be removed from a fruiting Vine at almost any period of growth with advantage, as such are incapable of making healthy, strong, fruit-bearing wood. In the case of very weak Vines these weak growths may be retained, and then only if they can be brought within the influence of direct sunlight, without overcrowding, as this last condition would defeat the aim in view. They are infected with red-spider, and seem also to have had thrips, and are very thin and unhealthy from these and by reason of unintelligent management. The sort is the Royal Muscadine.

INTELLIGENT READERS, PLEASE NOTE: — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

BARR & SON, Covent Garden, London — Daffodils, and Species of Narcissus.
SAMUEL MAY, Leeds—Seeds, Bulbs.
BRUANT, Poitiers, Vienne, France—Foliage Plants.
G. PHIPPEN, Reading—Dutch Bulbs.
HOOPER & CO., Covent Garden, London—Bulbs.
W. FISHER, Burton-on-Trent—Bulbs, Fruits, Roses, &c.
AUGUSTE VAN GEERT, Ghent—General.
FROMOW & SONS, Chiswick, W.—Bulbs.

COMMUNICATIONS RECEIVED. — J. Cheal & Sons.—W. G. S.— T. Sabbald. — A. Outram.— P. & M.—J. D.— J. Poe.— N. E. B.—F. Gunning.—W. D.—J. F.—J. F. Willis.— F. P. B.—Thos. Woodford.—D. & W. Croll.

Markets.

COVENT GARDEN, September 25.

A GOOD supply of Cobs, meeting with a ready sale. Market quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Melons, each	1 0	1 6
Figs, per dozen	0 6	0 9	Pine-apples, Eng., lb.	4 0	5 0
Cobs, per 100 lb.	50 0	60 0	Peaches, per doz.	3 0	8 0
Grapes, per lb.	0 6	2 6	Pears, French, doz.	1 0	2 0
Lemons, per case	21 0	..			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0	Lettuces, Cabbage, per dozen	1 6	..
Aubergines, each	0 4	..	— Cos, each	0 2	..
Beans, French, lb.	0 4	..	Marrows, each	0 2	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Cabbages, per doz.	1 6	2 0	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 6	..	Onions, per bunch	0 6	..
Cauliflowers, English, dozen	1 0	2 6	— Spring, per bun.	0 6	..
Celery, per bundle	1 6	2 6	Parsley, per bunch	0 4	..
Cucumbers, each	0 6	1 0	Peas, English, quart	2 6	..
Endive, English, per dozen	1 0	..	Radishes, per doz.	1 6	..
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	2 6	..
Horse Radish, bund.	3 0	4 0	Tomatos, per lb.	0 6	..
			Turnips, new, bun.	0 5	..

POTATOS.—Magnum Bonums, 50*s.* to 70*s.*; Regents, 70*s.* to 80*s.* per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Lapageria, red, 12 blooms	1 0	2 0
Arum Lilies, 12 blms.	3 0	6 0	Lavender, 12 bun.	6 0	8 0
Asters, 12 bunches	3 0	6 0	Marguerites, 12 bun.	3 0	6 0
Bouvardias, per bun.	0 9	1 0	Mignonette, 12 bun.	1 0	4 0
Carnations, 12 blms.	1 0	2 0	Pelargoniums, per 12 sprays	0 6	1 0
Chrysanth., 12 bun.	3 0	9 0	Primula, double, bun.	1 0	1 6
— large, 12 blooms	3 0	6 0	Pyrethrum, 12 bun.	2 0	6 0
Cornflower, 12 bun.	2 0	4 0	Roses (indoor), doz.	1 0	4 0
Dahlias, 12 bunches	3 0	6 0	— (outdoor), 12 bun.	4 0	12 0
Eucharis, per doz.	4 0	6 0	— coloured, doz.	4 0	9 0
Forget-me-not, 12 bunches	2 0	6 0	Stephanotis, 12 spr.	4 0	8 0
Gardenias, 12 blms.	3 0	6 0	Sweet Peas, 12 bun.	1 6	4 0
Gladiolus, various, 12 spikes	1 0	3 0	Sweet Sultan, 12 bun.	2 0	4 0
Heliotropes, 12 sp.	0 6	1 0	Tuberoses, per doz.	0 6	1 0
Lapageria, white, 12 blooms	2 0	3 0	White Jasmine, bun.	0 6	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–24 0	Foliage Plants, various, each	2 0–10 0
Arbor-vitæ (golden), per dozen	6 0–18 0	Fuchsias, per doz. ..	3 0– 6 0
— (common), dozen	6 0–12 0	Heliotrope, doz. ..	3 0– 6 0
Asters, per dozen ..	3 0– 6 0	Hydrangea, per doz.	9 0–18 0
Begonias, per doz. ..	4 0–12 0	Lilium longiflorum, per dozen ..	6 0–18 0
Bouvardia, dozen ..	9 0–18 0	— lancifolium, doz.	6 0–18 0
Chrysanth., dozen ..	4 0– 9 0	— auratum, doz.	12 0–24 0
Cockscomb, doz. ..	2 6– 4 0	Marguerite Daisy, per dozen	8 0–12 0
Coleus, various, doz.	2 0– 4 0	Mignonette, per doz	3 0– 6 0
Cyperus, per dozen	4 0–12 0	Myrtles, per doz. ..	6 0–12 0
Dracæna term. doz...	30 0–60 0	Palms in variety, each	2 6–21 0
— viridis, per doz..	12 0–24 0	Pelargoniums (show), per dozen	4 0– 9 0
Erica, various, per dozen	9 0–18 0	— scarlet, per doz ..	2 0– 6 0
Euonymus, various, per dozen	6 0–18 0	Petunias, per dozen	3 0– 6 0
Evergreens, in var., per dozen	6 0–24 0	Rhodanthes, p. dozen	0– 6 0
Ferns, in var., dozen	4 0–18 0	Solanums, dozen ..	0–15 0
Ficus elastica, each	1 6– 7 0		

SEEDS.

LONDON: *Sept.* 24.—A quiet feeling characterised to-day's seed market. For Trifolium the consumptive demand, as might be expected, has now fallen off. Some improvement in the sale for winter Tares is shortly anticipated; Vetches, it is noted, are always required at intervals for successional sowings. Rye is rather lower. There is no change in Mustard; Rape seed keeps steady. The new Haricots come good, and cheap blue Peas find buyers at last week's quotations.—*John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday trade was as dull as ever. Sales of English Wheat were impracticable except at 6*d.* to 1*s.* less than on Monday week. For foreign at the larger decline noted above very little progress could be made in effecting sales. Prices for flour were weak, and quite 6*d.* down since this day se'nnight. Malting Barley met rather more attention, but medium grades of that and all kinds of grinding barley were 6*d.* lower. Beans and Peas moved off in retail quantities at unaltered rates. Maize was extremely dull of sale, 24*s.* being the nearest value of round corn. There was no further change in the value of Oats, and on the week prices are the turn against the buyer.—On Wednesday the supply of English Wheat was light, but chiefly remained on hand, and foreign was, if anything, even more difficult of sale. Flour was flat. In Barley no further alteration occurred. Maize was very dull, and nothing transpired to affect quotations. Oats were steadier, but with only moderate transactions. Beans and Peas were quiet and unchanged.—Average prices of corn for the week ending Sept. 20:—Wheat, 33*s.* 10*d.*; Barley, 32*s.* 3*d.*; oats, 19*s.* 8*d.* For the corresponding period last year:—Wheat, 41*s.* 9*d.*; Barley, 33*s.* 9*d.*; Oats, 20*s.* 6*d.*

CATTLE.

At Copenhagen Fields on Monday cattle of middling and plain qualities very largely predominated, and for these the demand was slow, whilst the small number of prime cattle sold more readily and fully as dear. Sheep were rather short, and the trade more cheerful, prices of desirable weights advancing 2*d.* per 8 lb. The calf supplies were nearly all rough Danish and Irish, which sold at low rates; a few good Swedish brought better value than recently. No pigs were on offer. Quotations:—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 3*s.* 8*d.* to 4*s.*; sheep, 5*s.* to 5*s.* 4*d.*, and 5*s.* 10*d.* to 6*s.* 6*d.*—On Thursday trade presented a firm appearance. Beasts showed quietly, and prices were steady. Sheep, which were in short supply, were firm, and a shade dearer. Calves and pigs changed hands at fair prices.

HAY.

Tuesday's Whitechapel Market report states that trade was very dull, and prices of Clover and hay lower. Supplies were fair. Quotations:—Prime old Clover, 95*s.* to 114*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 116*s.*; best meadow hay, 80*s.* to 96*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 37*s.* per load.—The Cumberland market report states that there was no improvement in business. Quotations:—Clover, good, 110*s.*; inferior, 65*s.* to 90*s.*; hay, good meadow, 80*s.* to 90*s.*; inferior, 60*s.* to 70*s.*; and straw, 30*s.* to 35*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that trade was somewhat irregular. The supplies on hand from recent arrivals ruled low, and met a difficult sale, but fresh arrivals, which were much shorter, found a better market. Quotations:—Kent Regents, 60*s.* to 80*s.*; ditto Kidneys, 60*s.* to 70*s.*; Essex Shaws, 50*s.* to 60*s.*; and Magnum Bonums, 60*s.* to 70*s.* per ton.—The imports into London last week were 606 bags from Antwerp, 6588 Hamburg, 100 Harlingen, 295 Stettin, 2 sacks Ostend, and 95 bags 485 packages from Rotterdam.

Government Stock.—Consols closed on Monday at 101⅛ to 101¼ for both delivery and the account. Tuesday's prices were 101 1/16 to 101 3/16 for delivery, and as on the previous day for the account. The closing quotations on Wednesday were 101 to 101⅛ for delivery, and 101 1/16 to 101 3/16 for the account. The final record on Thursday was 101⅛ to 101¼ for delivery, and 101 3/16 to 101 5/16 for the account.

FOR GLASS HOUSES. **HUGHES' GREEN SHADING.**

Convenient, Inexpensive, Easily applied, Lasts all the Summer, and can then be easily washed off. 1s., post 1/3.

For Fixing Bloom in Azaleas, &c., and for Cut Flowers. **HUGHES' FLORAL CEMENT.**

A great boon to Florists and all lovers of Flowers. Dries instantly. Sold in bottles, 1s. & 2s. Per post, 3d. extra.

HUGHES' STYPTIC

For Preventing Vines Bleeding after Pruning. Very effectual in preventing the flow of sap in Vines being wasted. In bottles, 1/6 and 2/6. Per post, 3d. extra.

For Destroying Beetles, Cockroaches, Crickets, Bugs, Fleas, Mosquitos, &c. **HUGHES' TROPICAL BEETLE POWDER**

Most effectual in Greenhouses,—for Animals and Bed Clothing. Price 6d., 1s. & 2s. 6d. Per post, 3d. extra.

A Treatise on FIR TREE OIL as an Insecticide, and on the uses and application of the above preparations sent POST FREE, on receipt of address, by

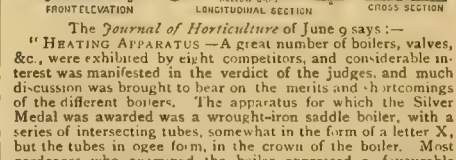
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VICTORIA & CATEATON STREET, MANCHESTER.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

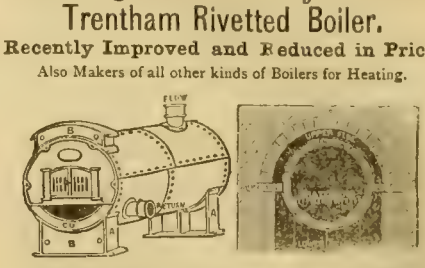
VIRGIN CORKWOOD, for Ferneries, Rockeries, and Ornamental Work in Gardens and Conservatories, supplied to Nurserymen and Seedsmen by WILLIAM RANKIN AND SONS, 10, Carlton Place, Glasgow; and at Lisbon, Portugal.

THOMAS GREEN & SON
(LIMITED),
Smithfield Ironworks, Leeds,
And Surrey Works, Blackfriars Road, London, S.E.,
Horticultural Engineers to Her Majesty the Queen,
CALL SPECIAL ATTENTION TO THEIR
PATENT
WROUGHT-IRON TUBULAR
HOT-WATER BOILERS,
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;
SADDLE BOILERS.
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.
They are the neatest, cheapest, most effective, and durable of any extant.
The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern
Had the First and Highest Prize, a Silver Medal,
Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3 1881.



The *Journal of Horticulture* of June 9 says:—
"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."
The *Garden* of June 11 says:—
"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."
Descriptive Illustrated Price List may be had free on application.
Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice. Galvanized Iron Cisterns, from 4*d.* to 1*s.* 6*d.* per gallon.

The Original and only Genuine Trentham Rivetted Boiler.
Recently Improved and Reduced in Price.
Also Makers of all other kinds of Boilers for Heating.



HOT-WATER PIPES AND FITTING
of every description for Heating Apparatus.
THE LARGEST STOCK IN THE KINGDOM.



HEATING APPARATUS ERECTED & GUARANTEED
ILLUSTRATED SHEETS on application.
FRED. SILVESTER, Castle Hill Foundry, Newcastle, Staffordshire.

WRIGHT'S "CHAMPION" ENDLESS-FLAME-IMPACT BOILERS,
admitted by the entire Trade, after Public and formal challenges, to be *the most economical of fuel, the most powerful, the simplest,* and *the cheapest* in the Trade. Price Lists and particulars from WRIGHT'S BOILER CO., AIRDRIE, N.B.

THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler. Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.



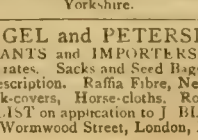
	Long.	Price of Boiler and Heat of 4-in. Pipe.	*set of Fittings.
A,	19 in.	150 feet	£5 10 0
B,	22 in.	300 ,,	6 15 0
C,	24 in.	400 ,,	8 5 0
D,	26 in.	500 ,,	9 10 0
E,	28 in.	600 ,,	10 15 0
F,	32 in.	700 ,,	12 5 0
G,	36 in.	850 ,,	13 15 0
H,	42 in.	1000 ,,	15 10 0
I,	48 in.	1250 ,,	17 5 0
J,	54 in.	1600 ,,	19 10 0
K,	60 in.	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c.
Says a Gardener of great experience:—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite."
Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.
FOR SMALL CONSERVATORIES
for Heating from 50 to 100 feet of pipe.



An Independent Boiler, with furnace front, doors, fire bars and dead plate complete, and 6 feet of funnel. This is called the "LITTLE WONDER." It is fixed in the end or side wall of conservatory by any bricklayer; the funnel running up just outside the glass. It can be applied almost everywhere. It will keep in all night. It is worthy of its name. Price complete, 50 feet size, £4 15; 100 feet size, £5 15*s.*
If cheque is enclosed with order 5 per Cent. discount may be deducted, if not, reference to Banker required.
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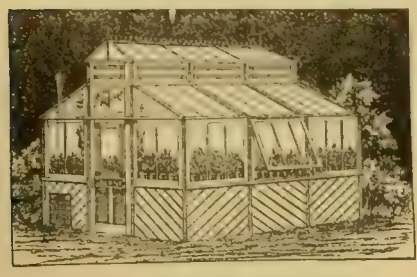
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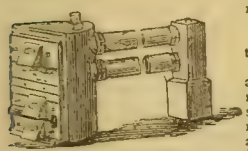
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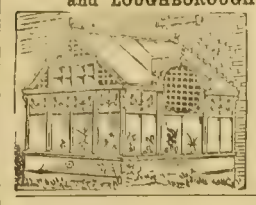
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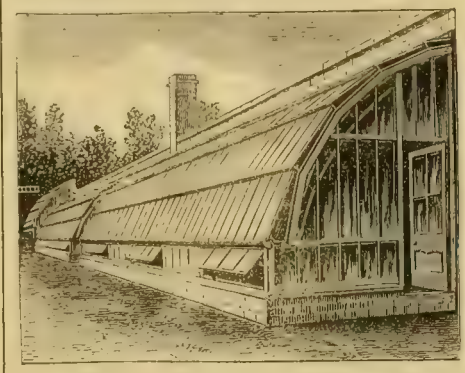
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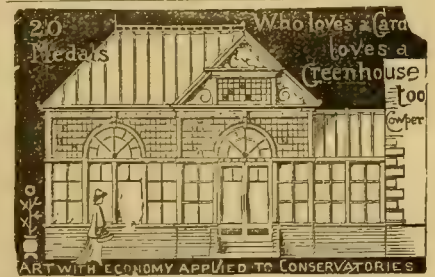
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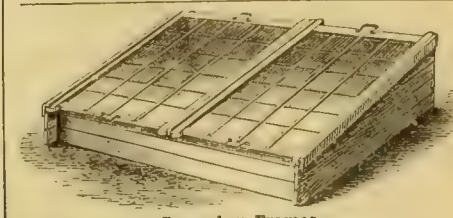
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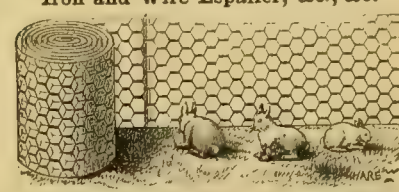
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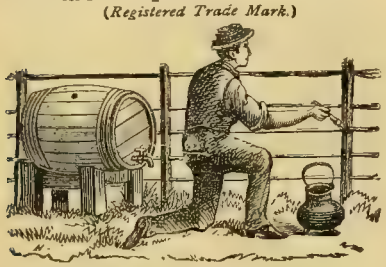
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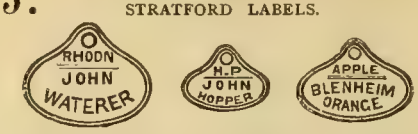
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 27, 1884.
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 562.—Vol. XXII. {New Series.} SATURDAY, OCTOBER 4, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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WANTED, AT ONCE, a few thousand good, well-rooted, 1-yr. old BRIER CUTTINGS. State cash price, with sample, to H. BENNETT, Pedigree Rose Nursery, Shepperton, Middlesex.

WANTED, old Bedding Plants, GERANIUMS, Tricolors, Bronze, Double Scarlet, &c. Price per 100 to MANAGER, Harold Wood Nursery, near Romford,

WANTED, for a Conservatory, a few well established Plants in pots, about three years old, including TACSONIA VAN VOLXEMI, RHODOCHITON VOLUBILE, and CLEMATIS INDIVISA. Address, with particulars, N. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, Two Dozen Charlotte Rothschild, and Two Dozen Smooth Cayenne PINE SUCKERS, true and clean. State price to C. TEA, The Gardens, Haverholme Priory, Sleaford.

WANTED, GOOSEBERRY and CURRANT CUTTINGS—all the best Lancashire Prize and other good sorts. Must be true to name. Send LIST of varieties and price per 1000 to DANIELS BROS., Nurserymen, Norw[illegible]

The Grand New Narcissus Incomparabilis Giganteus, "SIR WATKIN." 3s. 6d. each, 36s per dozen, 250s. per 100. Should be in every collection. A "special" offer of other popular kinds on receipt of list of names and quantities required, JAS. DICKSON and SONS, "Newton" Nurseries, Chester.

TREE CARNATIONS.—All the leading varieties in really good stuff, 100s. to 130s. per 100. THOS. S. WARE, Hale Farm Nurseries, Tottenham, London.

INDIAN LILIES.—Flowering Bulbs of L. neilgherrense, 1s. 6d. each; L. Wallichianum, 2s. 6d. and 3s. 6d. each; L. polyphyllum, 2s. 6d. and 3s. 6d. each. The usual allowance to the Trade. All Orders for 25s. carriage paid to London. Remittance through post office to accompany orders. Bulbs ready to lift in November and December. FRANK GRIFFITH, Kotagiri, Nilgiris, India.

BARR'S DAFFODILS.—A beautiful Illustrated LIST, describing more than 450 varieties, free on application. BARR and SON, 12 and 13, King Street, Covent Garden, W.C.

To the Trade.
J. MOOY, Florist and Seedsman, Haarlem, Holland (established 1830), begs to inform his Commercial Friends that he has arrived in London as usual with a good selection of FLOWER ROOTS, and is staying at 12, Exeter Street, Strand, W.C.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection, Chad Valley Nurseries, Edgbaston, Birmingham.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application. RICHARD SMITH and CO., Nurserymen and Seed Merchants, Worcester.

Dutch and other Bulbs.
CHARLES TURNER'S CATALOGUE is now ready. The first consignment is to hand in excellent condition. The NEW ROSE CATALOGUE is in the Press. The Royal Nurseries, Slough.

KENTIA CANTERBURYANA.—Germinated Seeds. Write for price (carriage and package free), to F. H. DAMMANN, Görlitz, Germany.

Established 1860.
J. V. REES (late Robert Parker), Hardy Herbaceous and Alpine Plants, DELPHINIUMS, IRIS GERMANICA, PHLOXES, POTENTILLAS, PÆONIES, &c. Selections of 100 showy varieties from 50s. The finest collection of Aquatics in the country. Exotic Nursery, Tooting, Surrey, S.W.

Established 20 years.
HERBACEOUS PÆONIES. Now is the time to plant. A very select Collection of about 60 choicest varieties, in various shades of Primrose, Lemon, Pink, Rose, White, Crimson, &c., many of them sweetly scented. Extra strong blooming plants 9s., 12s., and 18s. per dozen. J. J. MARRIOTT, Highfield Nurseries, Matlock.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., Bulb Growers, Hillegom, near Haarlem, Holland. Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

CENTAUREA CANDIDISSIMA.—The most beautiful of white foliaged bedding plants—easily raised from seed, which is the cheapest way to obtain a stock. 1s. per packet (about 100 seeds), 2s 6d. per packet (about 300 seeds). HOOPER and CO., Covent Garden, London, W.C.

FOR SALE, 14 CAMELLIAS (Alba-plena), planted out; must be removed for alterations. Apply to W. G. HAZELL, The Vineries, Nightingale Road, Wood Green, N.

Winter Flowering Tree Carnations.
W. HOWARD, Southgate, N., can supply good strong well furnished Plants, from the open ground, of all the varieties worth growing, including the new ones of this year also:—ADIANTUM cuneatum, in 48's and 32's, very good; do. farleyense, in 48's. CYPERUS alternifolius variegatus. DRACÆNA striata, Green, a fine variety for Conservatory. GARDENIAS in all sizes. STEPHANOTIS in all sizes. ASPIDISTRA lurida variegata.

Birmingham Botanical Gardens.
SPECIMEN HOLLIES for SALE.—A small number of fine well furnished HOLLIES, 10 or 12 feet in height, and of proportionate thickness, are to be disposed of. For particulars apply to W. B. LATHAM, Curator. Birmingham, September 30, 1884.

GREEN HOLLIES.—The present is the best time for Planting Holly Hedges. 1 foot, bushy .. 21s. per 100; 2 feet, with leaders 50s. per 100; 3 feet, with leaders 75s. per 100 } All well rooted. H. LANE and SON, The Nurseries, Berkhamsted, Herts.

SALES BY AUCTION.

Sales Every Monday, Thursday, and Saturday.
DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next, October 7.—(Sale No. 217).
HIGHLY IMPORTANT UNRESERVED SALE of the far-famed COLLECTION of ORCHIDS, formed by Oscar Lamarche, Esq, of Liège, who is giving up their cultivation.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Oscar Lamarche, Esq., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 7, at half-past 12 o'Clock precisely, without the slightest reserve, his entire Collection of ESTABLISHED ORCHIDS, enjoying a reputation probably unequalled on the Continent. Amongst many other fine things, several of which are handsome specimen plants, may be mentioned :—

Vanda Lowii, a most unique specimen 4 ft. 6 in. high, with thirty-two leaves
Dendrobium Shrœderi, true
,, Guiberti
Vanda suavis Veitchi
,, flavescens tricolor
,, tricolor aurea
,, ,, Wioti
,, Cathcarti
Cypripedium caudatum, several fine plants
,, Sedeni, 4ft. through
,, Haynaldianum
,, Stonei
,, Pearcei
,, Dominianum
,, Dayanum
Miltonia Clowesii Lamarcheana
Masdevallia troglodytes
Masdevallia chimæra erecta
Cattleya Gaskelliana, white variety
,, Trianæ alba
,, ,, rubra
,, Warneri
Lælia superbiens
,, Perrini
Cœlogyne Massangeana vera
Anguloa Ruckeriana
Epidendrum prismatocarpum
Oncidium tetracopis
,, macranthum
Odontoglossum Alexandræ, many special varieties
,, Pescatorei, do.
,, mulus
,, constrictum
,, sceptrum
,, nævium majus
Aërides suavissimum

On view morning of Sale. Catalogues are now ready and may be had of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Wednesday and Thursday Next.—Brighton.
By order of the Executors of the late Mr. Thomas Killick.
IMPORTANT CLEARANCE SALE of NURSERY STOCK, PLANTS, HORSES, FURNITURE, and Effects.
To Gentlemen and others intending Planting this season.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Mr. G. Attree) are instructed to SELL by AUCTION, on the Premises, The Nursery, Dyke Road, Brighton, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely each day, the whole of the beautifully grown NURSERY STOCK, which is in capital condition for removal, comprising thousands of Border Shrubs in fine assortment, 4500 Aucubas, about 400 of which are unusually fine plants, from 3 to 4 feet high; 15,000 Dwarf Roses, Standard Roses, Fruit Trees in variety, large quantities of Limes, Poplars, and other Ornamental Trees, the whole of the Greenhouse Plants, sixty unglazed SASHES, AGRICULTURAL IMPLEMENTS, HOTICULTURAL REQUISITES, capital WAGGON, TUMBRIL and Spring CARTS, Bay GELDING, Chestnut PONY, Bay PONY, HARNESS, and the remaining HOUSEHOLD FURNITURE, WARDROBE, CHIMNEY-GLASSES, and other items of the usual description.

May be viewed any day prior to the Sale. Catalogues are now ready, and may be had on the Premises; of Messrs. CLARKE AND HOWLETT, Solicitors, 8, Ship Street, Brighton; at Mr. ATTREE'S Offices, 136, North Street, Brighton; and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C., and Leytonstone.

N.B. To be SOLD, the valuable FREEHOLD BUILDING ESTATE, being that portion of the Nursery situate on the eastern side of Dyke Road, with the Dwelling-house standing thereon, and having an area of about 4 Acres, with a frontage of 300 feet to Dyke Road, particularly eligible for the erection of superior residences. For particulars and terms apply to Mr. ATTREE, or Messrs. PROTHEROE AND MORRIS, as above.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 10, at half-past 12 o'Clock precisely, a magnificent importation of ONCIDIUM PHALÆNOPSIS, the most beautiful of Oncidiums; O. LANCEANUM SUPERBUM, in the finest possible condition; O. KRAMERI, CATTLEYA MAXIMA, the dark variety of this lovely Cattleya; C. GIGAS SANDERIANA, in strong plants; ODONTOGLOSSUM VEXILLARIUM, large-flowering variety; O. ROSEUM and O. ALEXANDRÆ, established and imported; the beautiful GALEANDRA NIVEA and DEVONIANA, and many other choice ORCHIDS.

On view morning of Sale, and Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Established Orchids

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 14, at half-past 12 o'Clock precisely, the COLLECTION of ORCHIDS, formed by J. Bagley, Esq., of Knottingley, Yorks.

On view morning of Sale, and Catalogues had.

Hampton, Middlesex.
IMPORTANT SALE of well-grown FRUIT TREES, true to name.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Will. Tayler to SELL by AUCTION, on the Premises, Osborn Nursery, Hampton, about five minutes' walk from the railway station, on WEDNESDAY, October 15, at 12 o'Clock precisely, a large quantity of unusually well grown FRUIT TREES, of the best varieties and true to name; several thousands of fine SEAKALE for forcing, and other stock. Fuller particulars in next week's advertisement.

May now be viewed. Catalogues may be had on the Premises, or of the Auctioneers, at their Auction Rooms and Estate Offices, 67 and 68, Cheapside, E.C.

Chigwell.—Without Reserve.
CLEARANCE SALE of VALUABLE GREENHOUSE and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Olantigh Nursery, Pudding Lane, Chigwell (two miles from Chigwell Lane Station), on WEDNESDAY, October 15, at 2 o'Clock precisely, without reserve, the whole of the valuable STOVE and GREENHOUSE PLANTS, including 800 Licuala gratissima, 500 Maidenhair Ferns, Asparagus plumosa, Stephanotis, choice Palms, the entire stock of the double white Lapageria, also L. rosea superba, Gardenias, Azaleas, Tea Roses, a quantity of Shrubs, WHEELBARROWS, and other UTENSILS.

May be viewed the day prior to the Sale. Catalogues may be had on the Premises, at the principal local Inns, and of the Auctioneers, 67 and 68 Cheapside, London, E.C.

Lower Norwood.
ANNUAL SALE of CHOICE ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Henry James, to SELL by AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., about two minutes' walk from the Station, on THURSDAY, October 16, at 12 o'Clock precisely, a selection of beautifully-growa ESTABLISHED ORCHIDS, including a very fine lot of Odontoglossums, rare Masdevallias, Cattleyas, Phalænopsis, Dendrobiums, Cypripediums, Oncidiums, &c., an assortment of young and clean-grown STOVE and GREENHOUSE PLANTS, Specimen CAMELLIAS, AZALEAS, and other plants.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, at their Central Auction Rooms and Estate Office, 67 & 68, Cheapside, E.C.

Dorking.
CLEARANCE SALE of thriving young NURSERY STOCK, the land being required immediately by the Burial Board for the extension of the Cemetery.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Ivery & Son to SELL by AUCTION, without reserve, at the branch Nursery known as the Cemetery Nursery, Reigate Road, Dorking ten minutes' walk from the town, and about the same distance from the Box Hill and Dorking Stations, on THURSDAY, October 16, at 12 o'Clock to the minute (in consequence of the number of lots) the whole of the well grown NURSERY STOCK, comprising 6000 fine Laurels, 1 to 3 feet; 1000 Box, 1 to 3 feet; 600 Aucubas, 1 to 2 feet; 1000 Portugal Laurels, 3000 Privet, 2 to 3 feet; a quantity of Austrian, Weymouth and other Pines, Irish and other Yews, Deciduous Shrubs in variety 400 fine Limes, Planes, Poplars, Catalpas, and other ornamental Trees, also a quantity of Pyramid and Dwarf-trained Fruit Trees, together with some large specimen CAMELLIAS, smaller ditto, and AZALEAS.

The stock may now be viewed. Catalogues had of Messrs. J. IVERY AND SON at either of their Dorking or Reigate Establishments; and of the Auctioneers' and Valuers at their Central Sale Rooms and Offices, 67 and 68, Cheapside E.C.

Wimbledon, S.W.
A few minutes' walk from the railway station, whence goods may be transmitted to all parts.
HIGHLY IMPORTANT FOUR DAYS' SALE of beautifully-grown NURSERY STOCK, by order of Messrs. D. S. Thompson & Son, in consequence of the expiration of the Lease of a portion of the Home Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Wimbledon, S.W., on MONDAY, October 20, and three following days, at 12 o'Clock precisely each day, several Acres of remarkably well-grown NURSERY STOCK, including 7000 Laurels, 1½ to 3¼ feet; 10,000 oval-leaved Privet, fine bushy plants, 2 to 4 feet; 8000 Berberis Aquifolia, 1 to 2 feet; 1800 green Euonymus, 3000 Aucuba japonica, 1 to 2½ feet; 3000 Deciduous Shrubs, in variety; Portugal Laurels, green Hollies, English Yews, Planes, Limes, Poplars, Standard Thorns, and other Ornamental Trees, 4000 Standard and Half-standard Roses, 10,000 Fruit Trees, consisting of Standard and Pyramid Pears and Plums, Standard Victoria Plums, Horizontal and Dwarf-trained Apples and Pears, Dwarf-trained Peaches, Nectarines, and Apricots, fine Gooseberries and Currants, Orchard-house Trees in pots, and other stock.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, E.C.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6741.)
IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 9, a grand importation of MASDEVALLIA HARRYANA, ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), PILUMNA FRAGRANS var. nobilis, COMPARETTIA MACROPLECTRON, &c., from Messrs. Shuttleworth, Carder & Co.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6741.)
ARALIA CHABIARII, grand specimen.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 9, a grand specimen of ARALIA CHABIARII, about 16 feet high; also a new ONCIDIUM, which will be in Flower on day of Sale, and now with Professor Reichenbach. Also 50 DRACÆNA TERMINALIS (about 3 feet high), 18 STRICTA GRANDIS, 18 AMABILIS, and 18 BAPTISTI.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6741.)
TREE and OTHER FERNS from New Zealand.
Received direct.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 9, a consignment of TREE and OTHER FERNS, just received from New Zealand direct, in very fine condition, comprising Cyathe adealbata, including one very fine double-stemmed specimen about 8 feet high; Dicksonia squarrosa, Todea hymenophylloides, Lomarias, Aspleniums, Polypodiums, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6741.)
ESTABLISHED ORCHIDS, the Property of a Gentleman.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 9, at half-past 12 o'Clock precisely, a collection of ESTABLISHED ORCHIDS, formed by a Gentleman who is leaving England, all of which were bought in flower or from sales of first-class collections. Amongst other good things will be found a splendid specimen of Dendrobium Maulei (true), Vanda suavis Rollissoni, V. suavis Veitchi, Aërides Warneri, Lælia anceps Dawsoni (two plants), Odontoglossum deltoglossum (rare), O. Coradinei, O. Andersonianum (from the Pilgrim collection), Masdevallias in variety, Angræcum dependia (rare), Cypripedium Spicerianum (grand specimen with 100 leaves), Pescatorei Lehmanni, &c.

On view the morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his next SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, October 15 Gentlemen desirous of entering Plants for this Sale will please send particulars of same not later than Thursday next.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Hawkhurst Lodge, Sussex.
About 5 miles from Billinghurst Railway Station on the Mid-Sussex branch of the L. B. & S. C. Railway.
CHOICE ORCHIDS, FERNS, STOVE and GREENHOUSE PLANTS (some being very fine and fit for Decorations), the property of H. Nicholls, Esq., who is leaving the neighbourhood.

MESSRS. DEATH AND SON will SELL the above by AUCTION, on MONDAY, October 6, at 1 o'Clock.

Descriptive Catalogues of the Auctioneers, Petworth, Sussex.

Haversham Grange, Cambridge Park, Twickenham.
A few minutes' walk from the St. Margaret's and Richmond Stations, and near to Richmond Bridge.
SALE of the COSTLY CONTENTS of the RESIDENCE, 7-octave grand concert Pianoforte, Billiard Table and Fittings by Thurston & Co., quantity of Stove and Greenhouse Plants, Azaleas, Pot Roses, Camellias, Maidenhair Ferns, &c, and outdoor Effects.

MR. CHANCELLOR has been favoured with instructions to SELL by AUCTION, on the premises, Haversham Grange, Cambridge Park, Twickenham, in consequence of expiration of lease, on TUESDAY and WEDNESDAY, October 7 and 8, at 1 o'Clock precisely each day, the elegant and well manufactured FURNITURE and EFFECTS of the residence, a valuable Collection of AZALEAS, CAMELLIAS, Pot ROSES, FERNS, CHRYSANTHEMUMS, &c., and out-door effects, &c.

On view Monday, October 6, from 10 to 5 o'Clock; Catalogues on the premises and at Mr. CHANCELLOR'S Auction and Estate Offices, Richmond; and at his branch offices at Sunningdale and Ascot.

Royal Oak Nursery, Goldsworth, Woking.
Close to Goldsworth Old Nursery. 1 mile from Station of London and South-Western Railway.
EXPIRATION OF LEASE.—CLEARANCE SALE.

MR. H. W. COPUS is favoured with instructions from Mr. Newey, who is giving up Business in consequence of Expiration of Lease, to SELL by AUCTION, on WEDNESDAY and THURSDAY, October 8 and 9, at 12 o'Clock precisely, the whole of the fine grown NURSERY STOCK, comprising 20,000 (6 in. to 2½ ft.) Rhododendrons and Stocks, 2000 Aucuba japonica, 5000 Green and Variegated Holly, 1 to 7 ft.; Perry's Weeping and Golden Holly, 1000 Roses, standard and half-standard, true to name; 5000 Ligustrum ovalifolium, 2 to 4 ft.; Cotoneaster Simonsii, 4000 Spruce Firs, 10,000 Common Laurels, 6 in. to 3 ft.; Laurustinus, 10,000 Chestnut, 2 to 5 ft.; 4000 Yews, 2 to 6 ft.; fine well furnished Green and Variegated Box, Lawsoniana viridis, 2 to 4 ft., Deutzia gracilis, large quantity of well-grown Specimen and Border Plants, Flowering Shrubs, Virginian Creepers, Ivies, Gooseberries, Currants, &c.

Catalogues can be had post-free of the Auctioneer, 16, Friary Street, Guildford, Surrey, or at the Nursery, Woking, Surrey.

Knutsford, Cheshire.
IMPORTANT SALE of NURSERY STOCK, consisting of fine Pyramidal Specimen Coniferæ of all sizes, many from 6 to 12 feet high, and 3 to 6 feet through, including Thuiopsis, Thuias, Pinus, Cedrus, Araucarias, Abies, Juniperus, Silver and other Hollies, 6 to 12 feet; Golden Yews, Retinosporas, &c.; large quantities of 2 to 5 feet sizes of Pinus, Cupressus, Thuiopsis, Cryptomerias, 300 Retinospora plumosa, 100 Retinospora plumosa aurea, 50 Retinospora squarrosa, 1000 Rhododendrons, good bushes, 2 to 3 feet; 1000 Green Hollies, 300 Aucuba japonica, 300 Mahonia Aquifolium, 1000 Dwarf Hybrid Perpetual Roses, 200 Tea Roses, 300 Standard Roses, large quantities of common Colchic, caucasicum and Portugal Laurels; 1000 Apples, 1000 Pears, 20,000 strong Thorn Quicks, several thousand Oval-leaved Privets, 2 to 3 feet; 590 Scarlet and Fancy Thorns, 500 Limes, 500 Horse Chestnuts, 300 Birch Trees, Flowering Shrubs, &c.

MESSRS. ARTINGSTALL AND HIND have received peremptory instructions from Messrs. W. G. Caldwell & Sons, to clear a quantity of land required for further use, and SELL by AUCTION, on WEDNESDAY, October 15, at their Nurseries, Knutsford, Cheshire, about 25,000 of good EVERGREENS and SHRUBS.

Catalogues may be obtained at the Nursery, or from the Auctioneers, 45, Princess Street, Manchester. On view any working day prior to sale.

Whittington Nursery, 2 miles from Lichfield,
SALE of a WELL-GROWN NURSERY STOCK, at the above widely known Nurseries, of several hundred thousands of Trees and Shrubs, consisting of Standard and Pyramid Apples, Pears, Plums, Nuts, and other Fruit Trees, an immense quantity of English Oaks, Ash, Elm, Spruce, Austrian and Laricio Pines, &c. A large variety of Deciduous and Evergreen Shrubs, together with many thousands of transplanted and well-rooted hybrids and other Rhododendrons, and a fine variety of Ivies, &c. In the Coniferæ will be found a very choice assortment of Cedrus, Cypress, Junipers, Pinus, Retinosporas, Thuias, Yews, &c.; a remarkably fine lot of Maréchal Niel, Gloire de Dijon and other Roses; together with an immense variety of Seedling and Bedding Plants.

MR. GEORGE MARSDEN will SELL the above by AUCTION, by order of Mr. Holmes, at Whittington Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, and following day if necessary, commencing at 10 o'Clock each day. Conveyances will meet all the early Trains up to 10 o'Clock each day, at the "Trent Valley" and "City" Stations, Lichfield. For the convenience of Purchasers, any lot or lots can remain on the ground until March 1, 1885.

Catalogues will be ready 14 days prior to the Sale, and can be had at the *Midland Counties Herald* Office, the place of Sale, and the Auctioneer, Wirksworth, Derby.

Abbey Wood Nurseries,
Adjoining Abbey Wood Station, North Kent Line.
IMPORTANT SALE of NURSERY STOCK.
To Noblemen, Gentlemen, Builders, and the Trade.

MR. HARCOURT MILLS will SELL by AUCTION, at the Nurseries as above, on THURSDAY, October 9, the stock of Gold and Silver varieties of HOLLIES, Specimen ARBUTUS in fruit, FRUIT TREES, fine Standard ROSES, &c.
Catalogues at the Nurseries, and at the Auctioneer's Offices at Woolwich and Brighton

Tansley Nurseries, near Matlock.
MR. GEO. MARSDEN has the pleasure to announce that he is again instructed by Messrs. S. and J. Smith to SELL by AUCTION, at the above old-established Nurseries, on TUESDAY and WEDNESDAY, October 28 and 29, commencing at 11 o'Clock each day, the following :—
100,000 RHODODENDRONS, named varieties.
20,000 RETINOSPORAS, in sorts.
5,000 ANDROMEDA FLORIBUNDA.
30,000 IVIES.
12,000 Golden ELDERS, Golden ERICA, HOLLIES in varieties, LAURELS.
80,000 English OAKS, and large quantities of SYCAMORE, BEECH, POPLAR, Scotch PRIVETS, and other TREES and SHRUBS, all of the finest possible growth, and well rooted.
Catalogues will be ready fourteen days prior to the Sale, and may be obtained on application at the Nurseries as above, or from the Auctioneer, Wirksworth.

WANTED, TO LEASE, on the Great Western line, within 30 miles of London, a SMALL VILLA with Stabling for 2 horses, Washhouse, good Garden, with about 150 feet of Glass, and from 3 to 10 acres of Land. The house should contain about 8 rooms, with offices.
Particulars to be sent to Box 267, Office of the *Builder*, Catherine Street, Strand, W.C.

WANTED, to Rent, on Lease or otherwise, a NURSERY, with a number of Glasshouses, well heated by hot-water and conveniently fitted up. Must be within a few miles of Covent Garden.
Full particulars to D. E. F., *Gardeners' Chronicle* Office, Wellington Street, Strand, W.C.

To Market Growers and Florists.
For Sale at Pulling-Down Price, by order of the Mortgagees.
MESSRS. PROTHEROE AND MORRIS are instructed to SELL the whole of the GLASS ERECTIONS, measuring a total length of about 2400 feet, with the LEASE of about eleven years unexpired, 4½ acres of LAND and COTTAGE. Rent £45. Price for the Glass on application at Messrs. PROTHEROE'S AND MORRIS' Offices, 67 and 68, Cheapside, E.C.

SEED BUSINESS for SALE, a thoroughly genuine concern, established upwards of half a century, and now for Disposal in consequence of death of Proprietor. The Premises, which are prominently situate in an important Town, comprise large Residence, Warehouse, Stabling, &c. Long lease and low rent.
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FOR SALE, several acres of FREEHOLD LAND, well adapted for the above Trades, also a 6-Roomed COTTAGE, with Land suitable for the Erection of Glass Houses, within 10 minutes' of Hampton Station.
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POTS made expressly for HYCINTHS can be supplied by
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AUSTIN AND McASLAN have to offer 2 ALSOPHILA AUSTRALIS, with straight stems, 11 feet high, in girth 1 foot 9 inches, handsome symmetrical plants; and 1 DICKSONIA ANTARCTICA (fibrosa var.), stem 5 feet 8 inches high, in girth 3 feet 3 inches—a very fine plant. 16, Buchanan Street, Glasgow.

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FOR SALE, Six splendid Standard Portugal LAURELS, in tubs, stems 4 to 5 feet high and nice round heads, from 5 to 6 feet through, 21*s.* each. Also Hybrid RHODODENDRONS, all colours, mixed, grown on loam, 1½ to 2½ feet high, 30*s.* per 100, £12 per 1000.
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" JAMES VEITCH AND SON, King's Road, Chelsea, S.W.
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FREE
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Dark Blue ..	.. 4 0
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100 in 100 Fine Varieties, delivered free	£3	17 6
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12 in 12 Fine Varieties, delivered free	0	8 0
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12 Superb Varieties for Exhibition, our selection	£1	1 0
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FOREST TREE SEEDLINGS, home grown. One million 1-year LARCH, fine; and a quantity of 1 and 2 year Scotch and SPRUCE will be sold. Moderate prices, &c., on application to
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ERICA HYEMALIS, in 5½-inch pots, 18*s.* per doz.; 7-inch pots, 36*s.* per doz.
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CHRYSANTHEMUMS, grand plants in the best varieties, in 10 and 12-inch pots, 36*s.* and 42*s.* per doz.
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GRAPE VINES in fruit, with six and seven bunches on each plant, 12*s.* 6*d.* and 15*s.* each; for fruiting in pots or planting Vineries, 5*s.*, 7*s.* 6*d.*, 10*s.* 6*d.*, and 12*s.* 6*d.* each, according to strength. Stock in grand condition.
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Messrs. HAYASHI & CO.,

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3 doz.	L. auratum	or at	8s., 12s. & 16s.	per doz.
1 „	L. cordifolium	„	24s. and 36s.	„
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2 „	L. concolor	„	... 12s.	„
2 „	L. Krameri	„	... 12s.	„
1 „	L. Leichtlini	„	... 24s.	„
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¼ „	L. Hansoni	„	... 60s.	„

A Collection for £10, consisting of

Fifty JAPANESE MAPLES, forty different varieties, and including six of our celebrated grafted plants, containing three to seven sorts on one stem. All hardy varieties.

Or at 48s. per dozen; Grafted, 96s. per dozen.

Half of either of the above Collections, £5 5s.
Quarter of either of the above Collections, £2 15s.

Collection of 12 rare vars. of Japanese Iris,
Two of each sort, 30s.

Any JAPANESE SEEDS, PLANTS, &c., obtained, to order, direct from our Nurseries.

Speciality of Miniature Firs and Cedars.

Free delivered to any Railway Station in England. Orders now booked for Collections to arrive in December and January. Early application necessary. Terms: — Cash on delivery. All Bulbs and Plants guaranteed true to name and in good condition.

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FREE BY POST OR RAIL

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Seedlings from three best whites, large tubers, per dozen 12s. Producing fine decorative plants. Most useful for cutting. Free by Parcels Post.

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Probably the Best and Cheapest Offer of

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30,000 left for Sale.

8 to 12 Buds, £1 10s.; *10 to 15 Buds,* £1 15s.

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1884—1885.

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Wholesale Prices in German Marks.

	When Ripe.	100 Seeds.	1000 Seeds.
		Marks.	Marks.
Acrocomia cubensis	Sept.	20	..
„ sclerocarpa	Sept.	10	80
Areca lutescens	April	4	25
„ 5,000 Seeds, 100 marks			
„ 10,000 Seeds, 160 marks			
„ madagascariensis	June	4	20
„ rubra	Jan.	2	15
„ 5,000 Seeds, 50 marks			
Astrocaryum Airi	Nov.	15	120
Attalea speciosa	May	30	..
Ractris maraja	Nov.	6	40
Copernicia cerifera	Jan.	10	80
Desmoncus sp. Rio	May	10	..
Diplothemium candescens ..	March	15	130
„ maritimum	March	12	100
Elaëis guineensis	May	12	100
Euterpe edulis	May	6	50
Geonoma gracilis	March	5	30
„ 5000 Seeds, 120 marks			
„ Schottiana	June	5	30
„ sp. Quéluz	June	8	60
Caryota sobolifera	irregular	6	40
„ urens	irregular	6	40
Cocos campestris	Jan	7	50
„ flexuosa	March	5	30
„ oleracea	Jan.	10	80
„ plumosa	irregular	5	30
„ 5 00 Seeds, 250 marks			
Cocos procopiana	Nov.	20	180
„ Weddelliana	Dec.	7	55
„ 5,000 Seeds, 250 marks			
„ 10 000 Seeds, 450 marks			
Coffea arabica	May	2	15
„ yellow fruited variety ..	May	3	25
„ var. MARAGOGIPE ..	May	5	40
„ per bushel, 200 marks			
„ var. MURTA	May	5	40
„ per bushel, 160 marks			
Glazovia insiguis	Dec	8	60
Livistonia sinensis	Aug.	2	12
„ 5000 Seeds, 50 marks			
Maximiliana regia	Aug.	20	..
Oreodoxa oleracea	March	2	10
Pandanus utilis	irregular	3	20
„ 5,000 Seeds, 80 marks			
„ 10,000 Seeds, 150 marks			
Ravenala madagascariensis .	irregular	8	50
Philodendron bipinnatifidum ..	April	3	20
„ speciosum	April	3	20
„ 5,000 Seeds, 75 marks			
„ 10,000 Seeds, 120 marks			
Vriesia hieroglyphica	June	5	30

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ALOCASIA PORTEI, extra strong plants, a-piece, 20 to 40 marks.
„ PLUMBEA, strong plants, a-piece, 2 to 5 marks.
ALSOPHILA ELEGANS and EXCELSA, ½ to 1 yard high, each 10 marks. Stems without fronds.
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„ HARRISONI, fresh collected, 220 to 400 marks per 100.
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GRIFFINIA HYACINTHINA, strong bulbs, 45 marks per 100.

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ACACIAS, 18s. to 30s. per dozen.
AZALEA INDICA, 18s. to 6 s. per dozen.
BOUVARDIAS, distinct, singles and doubles, 18s. per dozen.
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GARDENIAS, 18s. to 30s. per dozen.
LAPAGERIA ALBA, 7s. 6d. to 42s. each.
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FERNS, MAIDENHAIR, &c., in great variety; also STOVE and GREENHOUSE PLANTS.

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RHODODENDRONS, Standard, 4000 to select from, of finest named kinds, perfect specimens, from 1½ to 5 feet through the head	105/-	10/6	31/5	5/-
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ANDROMEDA FLORIBUNDA; fine plants, well set with bloom, 1 to 3 feet high	1./5	2/0	5/-	1/-
AZALEAS, 1 to 3 feet high	2/5	..	1/5	..
A fine lot of P. NORDMANNIANA, T. LOBBII, WELLINGTONIA, CUPRESSUS, RETINOSPORAS, THUIOPSIS DOLABRATA, and manyothers in fine condition for removal	1e/6	5/-	5/-	
ORNAMENTAL TREES—Fine specimens of Limes, Laburnums in vars., Horse Chestnut, Scarlet Chestnut, Sorbus, Thorns of sorts, Maples, Fraxinus aucubæfolia, Scarlet Oak; also Weeping Birch, Elm, Ash, and Poplar, 6 to 15 feet high	10/5	3/6	5/-	1/6
LIGUSTRUM OVALIFOLIUM, 2 to 4 feet, per 100	2./-	..	1e/-	..
„ common, 1 to 2½ feet				
LAUREL, common, 1 to 3 feet ..				
„ Caucasica, 1 to 2½ feet				
„ Portugal, 2½ to 3 feet				
MAHONIA AQUIFOLIA				
BROOM, White				
YEWS, Irish				
ROSES, Dwarf, Moss, Teas, and Climbers				
CLEMATIS, fine stuff, in great variety; Virginia Creepers, Ampelopsis Veitchii	No reasonable offer refused, or quotations will be given.			
ILEX SHEPHERDI, a fine lot of perfect specimens, 6 to 9 feet; smaller, 1 to 3 feet.				
THUIA LOBBII, 3 to 4 feet ..				
RETINOSPORA AUREA, 6 to 15 inches				
CUPRESSUS ERECTA VIRIDIS, 1 to 3 feet				
WELLINGIONIA GIGANTEA, 3 to 5 feet				
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COB NUT, Webb's, 3 to 6 feet ..	25s. per 100			

Collections of SHRUBS and TREES for general planting, 2 to 6 feet high, 25s to 75s. per 100

Extra large Fruiting APPLES, PEARS, and CHERRIES, to clear, 1s each.

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BOUVARDIAS, leading kinds.
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EPACRIS, leading kinds.
ERICAS, leading kinds.
KALMIAS.
LILACS, Chas. X., and other leading sorts.
PRIMULA SINENSIS ALBA-PLENA.
„ double, leading kinds.
SOLANUMS, Williams' hybrid.
STAPHYLEA COLCHICA.

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The WHITE Jackman's Clematis,

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 4, 1884.

KNAP HILL.

THE geological maps mark Woking as situate on the London Clay; if so, it is London Clay with a difference, tending more to the Bagshot Sands above or the Woolwich beds below than to the genuine cheesy article familiar to dwellers in the northern suburbs of London. In any case, no sooner does the traveller alight at Woking than he is made conscious of a different atmosphere, a different climate, and a different vegetation from that of the London Clay district proper. Turf walls, Pine woods, and stretches of Heather, Gorse bushes—the dwarf variety predominating, and Genista tinctoria—these are not what one finds where London Clay pure and simple predominates. There is another feature which strikes one in this locality—the worship of the "Golden Queen." In many a hedgerow, in most cottage gardens, on the front lawns of the rural villas, there is set the emblem of the "Golden Queen." Let us pay our homage, for it is due, and pass on, for we are bound to the Court of the Queen, and what we now see are merely scouts and skirmishers of the great army of Golden Queens—Hollies, we mean—which we shall see at Knap Hill. A wonderful place, Knap Hill—less so, perhaps, for the prodigious quantities of hardy stuff—trees, evergreens, deciduous shrubs, &c.—for prodigious quantities of these may be found in many an establishment—than for the immense size to which some of the "specimens," wisely reserved as show-cards, have obtained. Where in the whole country is there to be found such an astonishing Weeping Beech as this, which sends its snaky arms meandering hither and thither, calling to mind the Banyans in India that we hear so much of? The bole of the tree, all hidden by the cascade of falling branches, is of very respectable girth, and might be measured without difficulty, but it would tax all the resources of the Forestry Exhibition, and all the cunning of a mensurator, to do more than form an approximation as to the true circumference of the branches. Then there are the historic Rhododendrons of huge size, but even more worthy of homage from their history as the progenitors of the bright throng which have emanated from these nurseries. Then the Conifers, the huge Redwoods with their boles covered with thick red fur rather than bark—surely these must give no very inadequate idea of what the trees are like in the Californian sierras. Then there is the graceful Taxodium distichum or deciduous Cypress, represented by huge specimens and the rarer pendulous variety. Huge pyramids of Abies nobilis tower into the skies and yield seed by the bushel. Boys were gathering the cones with the aid of ladders just as if they were Apples, only the boys didn't eat the cones! Abies cephalonica is here equally a forest tree of the first magnitude, its spiry top also crowded with cones cylindric in form and of the richest golden-bronze colour. There is the Douglas Fir, one specimen of which is a singular mixture of majesty and grace—a per-

ect specimen. Not so much praise can be given to the Araucaria, which do not thrive here. Pinus macrocarpa has attained proportions fairly to be called gigantic. P. monticola is laden with cones. P. Pinsapo forms very handsome specimens. The Weeping Larch is a much finer thing than small specimens would allow one to imagine. Sophora japonica pendula is so striking that one wonders why it is not more frequently met with, till the matter is explained by the gruesome phrase, "spring tender." Here, too, are fine specimens of the American Liquidambar, just beginning to glow with crimson; but these be giants, and there is an army of them. Few, if any, planters can hope to see such results for their labours; they have their reward, nevertheless, for while they have the satisfaction of entertaining disinterested feelings to the advantage of posterity, it must be admitted that for mere beauty (apart from the majesty which bulk conveys) the smaller specimens, such as any one can enjoy, bear the palm over the larger ones.

The collection here is so vast and so varied that it is impossible to give any adequate account of it in the narrow compass of a newspaper article; the only thing we can do is to jot down a few notes concerning some of the many things of interest which struck us on the occasion of a recent visit. Fortunately for us, the season is a valid excuse for not saying anything about the miles of Azaleas and Rhododendrons to be seen here, so that the task of disentangling our hurried notes is, in so far, lightened; nevertheless, it is difficult to know where to begin or how to arrange matters. We have been talking of giants, let us go to the other extreme and deal with the dwarfs. This done, we shall get a clue to what to do next. To the dwarfs, then! The dwarfs have their places in the garden, which none but they can fill so well; such, for instance, as the corners and angles of beds and shrubberies, and many a nook or pinnacle of the rockery.

First on our list comes a plant we rarely see, but whose compact habit and deep rich green colour render it very desirable in such situations as we have alluded to—Abies Hudsonica (Hort.) Gordon refers this to A. (Picea) Fraseri, of which it forms, according to him, a "very dwarf variety, not growing more than 3—4 feet high, but forming a dense close bush with a flat top." It is found, he says, in the Hudson's Bay Territory, whence the name. The leaves, we find, have no thickening cells, and the resin canals are just above the lower epidermis. Veitch, copying from Engelmann, refers this to A. balsamea, and calls it "A. balsamea Hudsonica, a sterile dwarf variety, found in the White Mountains of New Hampshire, above the timber line" (Engelmann, in *Transactions of the Academy of St. Louis*, 1878). Parlatore makes no mention of it, but Sargent classes it under A. balsamea as a variety which "at high elevations is reduced to a prostrate shrub, A. Hudsoniana, Hort." (Sargent, *Catalogue of Forest Trees*, 1880, p. 66.) Koch, *Dendrologie*, t. ii., part 2, p. 216, 1873, speaks of it under A. Fraseri, and mentions two forms of it, one raised from seed, the other from a layer (*ableger*). Of the former he says that when grafted on the Silver Fir it loses its dwarf habit. A nice little digression of two hours research among books this little plant has led us into!—one that we did not contemplate when we began this article. But even now we do not know whether Gordon is right in referring it to A. Fraseri and to the Hudson's Bay Territory, whether it is a variety of balsamea or something different from either. In the absence of strengthening cells (hypoderm) it agrees with balsamea. Gordon gives us no means of checking his assertions or references, so that we look upon him as a less trustworthy witness than the others. But be all this as it may, it forms a nice compact bright bush for the purposes indicated, and only those who "want to know, don't you know?" will trouble themselves about other matters. Of similar habit are the dwarf Weymouth Pine, P. Strobus, the delicate leaves of which are relieved by a flush of silver; and P. silvestris nana, the dwarf Scotch, a compact dwarf form, originally found, we believe, on the adjacen common. At any rate, this plant when grafted does not lose its character, for here is one grafted on a standard like a standard Rose, and with a droll-looking mop-head on the top. Somehow cushions and foot-stools look best on the ground! Two varieties of the common Spruce, Picea excelsa, answer to this cushion character very well. P. Remonti, and P. Gregori—these are forms so closely resembling the Clanbrassil variety, that although the difference is apparent enough when one sees them altogether, yet it would tax the skifullest word-painter to make the differences intelligible to those who have not the opportunity of seeing the plants. Of the Retinosporas and Junipers, which form such beautiful objects for winter beds or rockeries, nothing need be said here, because they are not true dwarfs, but speedily outgrow their stunted proportions when they get a chance. Thuia obtusa pygmæa (Retinospora), however, retains its dwarf character; and its lace-like foliage, partly turning a rich red colour in autumn, renders it very attractive. It is sometimes treated as a greenhouse plant, and is very pretty in such a position, but it is quite able to do without any such luxury.

Talking of Retinosporas—they will be Retinosporas in gardens for some time to come, in spite of their origin as Thuias—our attention is called to a branch of Retinospora plumosa aurea which has reverted—or has it gone forward?—to the condition of R. pisifera aurea. A little quicker freer growth and the change is made. It is very slight really, and yet the general effect is surprisingly different. As we are among the Conifers it may be well to finish up our notes concerning them. Cedrus atlantica glauca: this is of a very lovely lavender-blue, a tint that is the more interesting in that it prevails in some forms of the Lebanon also.

Picea pungens—a pungent subject in many ways—but we have settled in our own minds (being still open to conviction!) that the Parryana glauca of the nurseries is the form which our late correspondent Dr. Engelmann, who ought to have known, and who did know, called Picea pungens, and a very lovely thing it is, only mind and ask for pungens glauca, for there is a green form of the same which is not so remarkable. P. pungens, whether green or glaucous, is a hardier, more robust-looking, broader leaved plant than P. Engelmanni, with which it is often confounded. It grows later in the spring, and so escapes the spring frosts, which materially injure the P. Engelmanni. P. pungens is a native of the Rocky Mountains of Colorado, growing at an elevation of 6000—8000 feet, never forming forests but scattered along streams in damp moist soil. P. Engelmanni, *alias* P. commutata, has also a green and a glaucous variety. The latter is very pretty but its comparative want of vigour and its liability to injury from spring frosts render it in every way inferior to P. pungens. P. Engelmanni occurs along the Rocky Mountains from British Columbia and Oregon to Arizona, and eastward to Dakota. In Colorado it forms extensive forests at 8500—11,500 feet elevation, furnishing, according to Sargent, the most valuable timber of the Central Rocky Mountain region.

Juniperus Chamberlaini, a variety of virginiana, forms an elegant pyramid or column of fine-leaved foliage, frosted with silver. Equally effective and very similar is another silvery-leaved form called J. virginiana var. Burkei. J. drupacea is of much bolder character, its broad leaves being very different from those which we usually associate with Junipers. The golden Chinese Juniper is also highly to be commended for its brilliant golden tint, and the golden Japanese variety is entitled to the same praise. Juniperus virginiana Schotti is a very lovely form with the most delicately fine foliage of a rich grass green. J. neoboracensis is another very beautiful silver-leaved pyramidal form. Messrs. Veitch speak of it as J. neaboriensis, and refer it to a variety of the common Juniper, J. communis, but the name would seem to indicate an American origin. The Colorado form of A. Douglasii is of closer habit, and the branches have, in the young state at least, a marked tendency to ascend. But there are many forms of this Conifer yet to be introduced. Picea sitchensis or Menziesii is very beautiful, from the silver under-side of the leaves. It is like the Japanese ajanensis, but the leaves are not so flat. P. Maximowiczii here, as elsewhere, is an ugly scrub of a tree, of no use for ornamental purposes, but which should be grown on till it shows its true characters and tells us more about itself than we know at present. Tsuga Hookeriana is a handsome Hemlock Spruce, with broadish leaves of a deep blue colour. Picea concolor—ah! here is another pungent business. Is P. concolor distinct from P. lasiocarpa (*alias* Parsonsi, *alias* Lowii)? and is that again distinct from grandis? We have read and written too a good deal on this subject, and we come to the conclusion that for garden purposes concolor (true) is, as Mr. Barron maintains, different from lasiocarpa, and that from grandis. P. concolor does, indeed, run very nearly into lasiocarpa, so that in a large seed-bed it is difficult to fix any definite line between them, but if you consider the plants as a chain—the link at one end being concolor, that at the other being lasiocarpa—there is no difficulty in recognising the two end links. The form known as P. concolor violacea is by far the most beautiful; its lovely tint of glaucous blue should secure it a place in every collection.

Our notes have grown so much in the transcribing that we must break off here, and defer our remarks on some other classes of plants till another occasion.

New Garden Plants.

CLERODENDRON ILLUSTRE, *N. E. Brown.*

This is a close ally of C. squamatum, and about equal to it in point of beauty, both being handsome and showy plants. Our new species differs from C. squamatum in its glabrous and distinctly repand-dentate leaves; the corolla also appears to be more nearly regular, the lobes not being directed so much to one side, as shown in the drawings of C. squamatum. It was introduced into Messrs. Veitch's nursery by Mr. Curtis, who discovered it in Celebes, and it appears to be easily manageable and free-flowering, producing its large panicles of bright scarlet flowers when only about 18 inches high. The leaves have terete petioles, 4—5 inches long, and a cordate acute blade 7—8 inches long, 6—6½ inches broad, distinctly repand-dentate on the margin, glabrous above (or with a few scattered, exceedingly minute hairs, only visible under a lens), thickly covered beneath with very small peltate scales, otherwise glabrous, upper leaves rapidly reduced to small petiolate, ovate, or spathulate, or almost linear bracts. The branches of the panicle are red, and as well as the linear bracteoles, calyx, and outside of the corolla, minutely puberulous. Pedicels 4—5 lines long, scarlet-red. Calyx subglobose, obconic at the base, 4 lines long, 3 lines in diameter, scarlet-red; the lobes are ovate-lanceolate, acute, and connivent around the tube of the corolla. The corolla is bright scarlet, having a tube 9 lines long, and a subregular limb 8—9 lines in diameter, with elliptic-oblong obtuse lobes. The stamens are exserted for about an inch, and at first are straight, afterwards curving downwards nearly at right angles; filaments vermilion; anthers brown.

As a stove decorative plant this is a valuable acquisition, for, as already stated, it flowers freely, is very showy, and not difficult to cultivate. *N. E. Brown.*

PIPER ORNATUM, *N. E. Brown.*

This is a very pretty novelty, and although somewhat resembling the following species (P. porphyrophyllum) in the coloration of its leaves, it is still a very distinct plant, being more slender, and having smaller, most distinctly peltate leaves. It is a stove plant, of climbing habit, and well adapted for covering trelliswork, the trunks of tree Ferns, &c. The stems are trailing, growing 10—15 feet or more long, rather slender, glabrous, terete, and rooting at the nodes, which are 1—3 inches distant. The leaves are glabrous and directed to one side, the petioles are 2½—3½ inches long, terete, slightly channelled down the face, reddish tinted when young; the blade is peltate, 2½—5 inches long, 2—4 inches broad, ovate-orbicular, rather abruptly contracted into a deltoid, rather obtuse point about half an inch long, 7-nerved, the nerves not prominent above and but slightly so beneath, uniting with each other in a series of loops at a short distance within the margin, upper surface of the young leaves bright shining green, everywhere thickly covered with small irregular pinkish-white spots and dots, the old leaves duller and darker green with the spots whitish, under-surface green, unspotted. The stipules are about half an inch long, the free part terete-acuminate, caducous. The inflorescence is unknown to me. *N. E. Brown.*

GARRYA ELLIPTICA.

The female plant of this elegant hardy shrub is so scarce in cultivation that we gladly avail ourselves of the opportunity of giving an illustration of it (fig. 75). Hitherto we have seen it only at Sir William Miles', at Bristol, and from the neighbourhood of Clevedon. Our present specimen comes from the gardens of Mr. Pochin, Bodnant, near Llandudno. Though by no means so handsome as the male plant, with its elegant pendulous catkins, yet it is not devoid of beauty, while the chance of obtaining seeds, and possibly new varieties, is an opportunity no true gardener will miss. The berries have a brittle shell, the fracture of which reveals a dark blood-red pulp full of juice, and surrounding two pendulous seeds. It was a happy inspiration that led Messrs. Bentham and Hooker to place it among the Cornaceæ, an allocation the propriety of which becomes more evident as our knowledge increases. Garrya is a plant that should be much more widely known than it is, for it is hardy, evergreen, and when in full bloom most elegant and distinct. Moreover, it is a capital seaside plant.

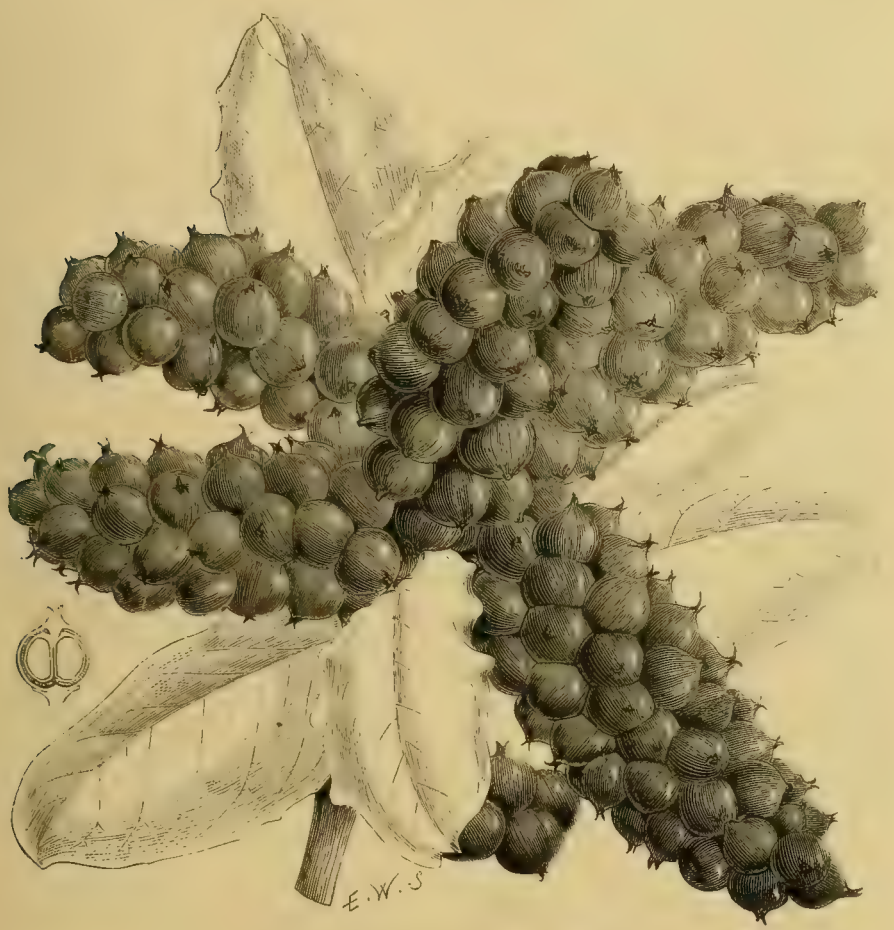


Fig. 75.—Garrya elliptica: berries.

THE NEPENTHES.

This genus of tropical plants is not widely cultivated in our gardens. The species and varieties are, however, not only interesting as a class, but are also extremely beautiful. They are not often seen in flower, nor is it for the beauty of the flowers that they are cultivated, but rather for their singular appearance. It may be worth observing that the Nepenthes are dicœcious, the seed-bearing flowers being produced upon one plant, the pollen bearers on another. Owing to this characteristic, it is not easy to obtain flowers to cross one species with another, but in large collections the conditions are sometimes favourable, and some very gratifying results have occasionally been obtained. The Nepenthes are propagated either by seeds or cuttings. As the seeds are so difficult to obtain, but few persons have an opportunity to raise plants in that way. They vegetate best in a close frame, such as is in use for propagating purposes. The frame is fixed in a corner of the stove over the hot-water pipes so as to secure a moist bottom-heat of about 85° or 90°, and the siftings of sand, peat, and sphagnum from the Orchid compost answer well to grow them in. The material is very light, and if the seeds are merely laid on the surface the watering will cause them to be sufficiently covered. As soon as the little plants, which usually appear in a few weeks, are large enough they must be potted off singly in small pots, using a compost of turf, peat, sphagnum, and broken potsherds. Cuttings put in under the same conditions as the seeds will form roots; indeed, I have managed to propagate the Nepenthes from cuttings by putting them in under the plants in a warm stove, using some cocoa-nut fibre kept in a moist state to root them in. The plants prefer a moist warm atmosphere, and when they are well established, whether raised from seeds or cuttings, a position close to the glass is most conducive to their well-doing. I have been tempted to make a few remarks on this genus of plants, not because they are popular, but to draw attention to the excellence of the additions that have been made to them during the last few years. The houses where the Pitcher-plants are grown in Messrs. Veitch's nursery, at Chelsea, are at present a sight to gladden the eyes of all who are interested in these wonderful productions of the vegetable kingdom. Some eight or ten years ago N. sanguinea held the highest position in the genus. Plants of it were rare; a good specimen of it put up for sale would easily have brought fifty guineas. With the advent of N. Mastersiana × the anxiety to obtain N. sanguinea has ceased. This new hybird, raised in Messrs. Veitch's nursery, is one of the most wonderful productions of modern times. It has already been fully described and figured in these columns, but there seems to be a dark and a lighter coloured form of it. The dark form is a deep crimson, as dark as N. sanguinea; but the characteristic lid and blotches of the pollen parent, N. distillatoria, are evident in the hybrid. The plants are furnished with six to a dozen pitchers on each, and one that I measured was 9½ inches long and 3 inches across. The great value of this plant is its free-growing character. N. Northiana is also developing its high-class qualities and its distinct character. The pitchers are densely blotched, and spotted internally with deep reddish-crimson, the mouth deep yellow, marked with crimson bars and lines. There are several varieties of Northiana itself, and also a very distinct kind which has been given the specific name of N. cincta (see *Gardeners' Chronicle*, vol. xxi., p. 576, fig. 110); one plant of this had seven pitchers, some of them 10 inches by 2¾; it is presumably a cross between albo-marginata and Northiana: the reddish-brown pitchers are streaked and mottled with dark brown or chocolate colour—a very free-growing species. N. Morganiæ is a distinct free-growing and very pretty species—a hybrid form of American origin. The full-grown pitchers are 7 inches long, and of a bright red colour. N. sanguinea is to be seen in the form of a small plant with three pitchers. This species when well grown is very handsome; the pitchers have been grown 13 inches in length, but it is very slow in growth, and does not always succeed. The full-grown pitchers of N. Raffiesiana hold a pint of water, and it will always be valued for its free-growing habit and handsomely marked pitchers. N. Veitchii is a remarkably distinct species, and very handsome; the pitchers are of great substance, greenish, with a decided brown tinge. When full grown they are of the largest size. N. Rajah has not started to grow with so much freedom as some others. Introduced from the cool mountainous district of Borneo, near the summit of Kinu Balu, it was thought well to try it in a cool house—indeed, I saw it doing well in a cool Orchid-house in the Glasnevin Botanic Gardens; others have tried it in a cool moist atmosphere, succeeding fairly well with it; but the credit is due to Mr. Tivey, who has charge of the Nepenthes here, and grows them so well, of producing the largest pitchers of this variety yet seen in cultivation. The plant is in the warmest house, and it has started to grow with renewed vigour since some sphagnum moss has been wrapped round the stem. The largest pitcher is 9¾ inches long, and 5 inches by 3 inches across the mouth. The pitchers are of peculiar formation, greenish on the outer surface, and blotched with brownish-red; the internal spots and blotches are red.

The above species and varieties are of recent introduction, and it may safely be said that they have caused quite a revolution in the Nepenthes world. With the exception of N. Rajah they are all free growers, and make handsome ornaments for the decoration of the plant stove. Many of them may be grown in pots, but they take best to teak baskets, which should be suspended from the rafters, the pitchers to be allowed to hang down amongst the plants on the stage beneath. A well grown plant of this genus is a strong point in a collection of foliage plants staged for exhibition. *J. Douglas.*

PERPETUAL FLOWERING CARNATIONS.

Much as these Carnations have been prized by all lovers of sweet-scented and handsome flowers, it is somewhat strange that they are so slow in making their way into general cultivation, especially now that a race so much superior to the old varieties in vogue in times past has come into existence. If their many desirable properties are taken into account, it will be seen that there are few winter flowers that can be cultivated with so much advantage in private gardens, where flowers are continually in demand through the winter and early spring. Not the least of their merits is that, unlike many forced plants, they never come crowding in in such quantities as to give a glut for awhile, with a corresponding scarcity at others; and the enduring character of the individual flowers is not the least that may be said in their favour. If it should happen that the flowers are not wanted when they open they will keep for a week or two, which cannot be said of most things. The comparatively little space required by a sufficient number of plants to give a succession of flowers for months, and the little warmth they need to bring

them into bloom, are both much in their favour; added to which, different from winter flowering Roses, they are little subject to the attacks of mildew and aphides—the two pests which Rose-growers have ever to contend with. Much of the disappointment which beginners in the cultivation of Carnations for winter flowering often experience is traceable to the plants not getting all the attention they require during the previous summer, and upon which so much of their ability to flower properly depends. They are not plants that show any neglect so quickly or decidedly as many things; hence in the press of other matters that ever present themselves during the busy season, such plants often do not get all they require.

There are two ways of growing them through the summer—in pots, or planted out in prepared beds, and in autumn either transferring them to pots or planting out in the houses or pits where they are to flower. The planting out method during the summer has many advantages. So treated they require less attention, and there is not much danger of their suffering from want of water; added to which, with stock equal in spring the turned out plants will be much the best by autumn, and strongest, except where those grown in pots have been over-stimulated by liquid or artificial manures.

Mr. Howard, of Southgate, has long been one of the most successful growers of these Carnations. A good many years back, when living at Balham, at a time when comparatively few gardeners took them in hand, he went largely in for them, and he now grows and forces them in very large quantities. His largest house, in which he grows those for winter flowering, is about 100 feet long by nearly 30 feet wide. He now adopts the planting-out system in summer wholly, finding the advantages that follow in the ability of the plants to yield a larger crop of fine flowers. His stock this season has occupied quite half an acre, and consists of all the best of the old varieties, with many new ones, including the favourite yellow and yellow ground sorts. The planting-out method is followed by the American growers of perpetual Carnations, with whom they are amongst the most prized of all forced flowers.

Cuttings that have been put in during the latter end of summer, and are now well rooted, will be in fine condition for planting-out next spring. They root amazingly in good strong holding soil, and make top growth in proportion. During the summer they require to have the points of the shoots pinched out, varying the time this is repeated according to when the plants are wanted to be in flower. *T. B.*

GARDEN PALMS.

The publication of a list of the Palms cultivated at Kew, which accompanied the report on the Royal gardens for 1882, affords a favourable opportunity for a few notes, both descriptive and cultural, on those species of Palms which are the most useful in a garden sense. As the Kew collection of Palms comprises all, or nearly all, the species that are known to be in cultivation in European gardens, this list will prove a valuable aid towards reducing to something like order the very confused state of the nomenclature of garden Palms, which is in some cases so hopelessly mixed as to render it often impossible to know what Palm is meant by this or that name. That such a difficulty existed Sir Joseph Hooker pointed out in his notes which accompanied the list of Kew Palms. He says: "The compilation of an accurate catalogue of Palms under cultivation is a matter of great difficulty, owing partly to the impossibility of determining them till they flower, and partly to the practice that prevails in the nursery trade of attaching provisional names to seedlings of Palms, which though unrecognisable as to genus and species when in that state, are as full grown plants well known under older names." It may, therefore, be useful if under the cultural notes on each genus a list of the species and their synonyms is added, and as the names adopted by the Kew authorities for their cultivated Palms are in accordance with the *Genera Plantarum*, it may be hoped they will in due course become recognised and used in all nurseries and gardens where Palms are grown. As pointed out by Sir J. Hooker, the characters of the foliage of young Palms are, in many cases, totally useless for purposes of distinction, but in the seeds of a large proportion of the species there are good characters by which the species may be recognised. At Kew, in the museums, there is a very large and rich collection of Palm seeds, and to those who are interested in the introduction of seeds of new Palms, may make use of this collection for the correct naming of unknown or doubtful kinds. By submitting the seeds to the Kew authorities for identification many errors in names might be avoided, and we might hope in time to see garden Palms as accurately named, as for instance Orchids are, which few nurserymen venture to name for themselves, but submit them to one authority, Prof. Reichenbach, who has consequently been able to keep the myriads of Orchids now in cultivation in admirable order. Even in the case of newly imported plants of Palms it would be wise to send specimens of them to Kew for naming.

The number of species enumerated in the Kew Palm-list is 420, and of these a large proportion are sufficiently ornamental to become useful as garden plants. Some of the kinds, such as the Sabals, some of the Coryphas, and others are not particularly ornamental until they have attained to a large size, so that it is only where ample room can be afforded them that these prove really of service in horticulture. In the Palm-house at Kew these larger growing Palms are special features because of their size and nobleness of appearance in a mature state. A few others are so unsatisfactory when under cultivation in this country as to be scarcely worthy of attention unless it be from the specialist. With these exceptions almost all the known Palms are deserving of a place in gardens—gracefulness of foliage, a noble habit, and in most cases easy of cultivation, being characteristic of the Palm family. Many of the species assume a pretty graceful appearance, even when very young, and these have become popular for purposes of table-decoration, and for cultivation in small plant-houses, as well as for the many other uses for which such plants are now largely employed. Indeed, it may be said that Palms are useful in gardens only when in a juvenile state, the large glass structures necessary for them when fully developed being too costly to be other than exceptional.

Palms are nearly all natives of tropical countries, and therefore require the treatment necessary for stove plants. In some parts of Southern Europe, where the temperature is sufficiently warm, and the atmosphere humid, some of them are found to thrive out-of-doors, but in the more northern countries they require to be grown under glass. Fortune's Palm (Chamærops Fortunei), although now and then met with planted out-of-doors in this country, is not hardy enough to withstand our winters unprotected, and even when screened from cold winds and frosts it is rather as a curiosity than an ornament that it finds a place outside. Under glass, in a temperate-house, this Palm assumes a noble appearance. C. humilis, a native of South Europe, is equally unsatisfactory when allowed to remain out-of-doors altogether. Besides a tropical temperature, all Palms seem to thrive best in an atmosphere well laden with moisture, and to enjoy plenty of water at the root. It is stated by Seemann, in his *Popular History of Palms*, p. 30, that "the localities in which Palms grow are as diversified as everything else connected with these plants. While some are closely confined in the hotter regions of the tropics to the shores of the ocean, and are scarcely able to extend their range beyond the limits of the sea breeze, others flourish far inland on the tops of mountains 14,000 feet high, and in the immediate neighbourhood of perpetual snow; while some seek the moisture, shade, and gloom of the virgin forest, others take up their abode in arid deserts, where they are exposed to the full influence of the scorching rays of the equinoctial sun; while some luxuriate in swamps, others only live in well-drained soil." On the preceding page, however, he states that "the true Palm climate has a mean annual temperature of 70° to 81° Fahr." Whatever may be the natural conditions under which Palms are found growing, almost every one of those introduced thrives best in a moist, warm stove, and shaded from very bright sunshine. The reproduction of the natural conditions of plant life is so often beyond our means, that any attempt at it too often results in failure, and consequent injury to the plants operated upon. The cultivation of plants under glass is so very artificial in its details that it is found better to rely upon the plant's ability to adapt itself to altered circumstances than to attempt to copy Nature exactly. In considering the requirements of Palms we must perforce be guided by those of other plants along with which they are to grow; and so if the usual treatment for stove plants proves suitable for the majority of introduced Palms, its adoption should be preferable to treatment of a special kind. Whatever moisture these plants enjoy under natural conditions they all, without a single exception, require an abundant supply under cultivation. The roots should never be allowed to become dry; on the contrary, a good soaking at least once a day is necessary during their most active growth, whilst in the winter the soil should be kept always moist. Every one of the species thrives best in a strong adhesive soil, which should be principally loam.

It is now and then recommended that, in order to keep the roots in as small a compass as possible, and at the same time to afford them sufficient food to keep the plant in healthy growth, the roots should be periodically cut away for several inches all round the ball and new soil added. Our experience in Palm cultivation would seem to condemn this [barbarous] practice as one likely to destroy Palms rather than improve them. Whenever the roots are much interfered with long sickness and often death are the inevitable results. From the seedling up to the mature stage we are always careful to injure the roots as little as possible. If the pot in which a Palm is growing is filled with roots and the whole of the soil exhausted, then, if it it is not convenient to remove it into a larger pot, frequent waterings with liquid manure will be found sufficient to maintain health and growth.

The propagation of Palms is effected only by means of seeds, although the species of Rhapis and one or two other kinds which form a number of stems, may be increased by a division of the stock. Nearly all Palm seeds will retain their vitality for several months, so that their importation from the most distant countries may be accomplished without much difficulty. It will be found safest to import the seeds either in ordinary bags or in boxes without any soil or moist packing material about them. If they are kept dry and care has been taken to collect them only when ripe and to preserve them from damp, there is little danger of their failing to germinate on reaching here. They should be sown in pans or boxes, covering the seeds with soil equal in depth to their own thickness. A bottom-heat of 80°, or even a place under the stage in a warm house, should induce them to germinate in due time.

Some of the species, such as Lodoicea, Nipa, and several others, require exceptional treatment for the germination of their seeds, but as it is intended to treat only of those kinds suitable for general cultivation, they need not be mentioned here.

Acanthophœnix, Wendl.—A small genus of Palms, found only in Mauritius and Bourbon. Like all the Palms which have been introduced from the group of islands of which Mauritius is one of the principal, the two species belonging to this genus are exceedingly ornamental, both when young and when grown into large plants. They require a very warm and humid atmosphere at all times of the year, and are impatient of any disturbance at the root. They thrive best when allowed plenty of root-room, and if large specimens are required they should be planted out when they have attained a height of about 6 feet. When fully developed they are about 60 feet high, with leaves from 6 to 12 feet long. The seeds are as large again as a grain of Wheat, oblong, black when ripe, with irregular striæ running longitudinally from the top to the bottom. The seed-leaf is split into two divisions, all the others being pinnate, gracefully curved, the pinnæ clothed on both sides with long thin spines, as also is the leaf-stalk and sheath, the spines on the latter being long and needle-like. Both species are more or less glaucous on the under-side of the leaf, A. crinita more so than the other. They also differ in the colour of the sheath-spines, A. rubra having black and A. crinita brown ones.

A. crinita, Wendl. (syn. Areca crinita, Bory and Hort.; Areca Herbstii, Hort.)—Mauritius and Bourbon.

A. rubra, Wendl. (Areca rubra, Bory; Calamus Verschaffeltii, Hort.)—Mauritius and Bourbon.

Acanthorhiza, Wendl.—Two out of the three cultivated species of this genus are generally known in gardens as Thrinaxes, to which they bear a close resemblance in habit and foliage. They are, however, easily separated by the dull green of the upper surface of the leaf-blade and the glaucous under-surface, by the blade being split down to the rachis, and by the cluster of spine-like roots which is developed round the base of the stem, and which grow in an upward

direction. The characters of the seeds are unknown to me. The plants in the Kew collection are some of them about 6 feet in height, and have a distinct and graceful habit. An ordinary stove or warm greenhouse suit the Acanthorhizas.

A. aculeata, Wendl. (Chamærops stauracantha, Thrinax aculeata, Hort.).—Central America.

A. arborea, Drude (Thrinax arborea, Hort.)—Habitat unknown.

A. Mocinni, Wendl. (Chamærops Mocinni, Kth.)—Central America.

Acrocomia, Mart.—A genus of Palms which has long held an important place among the useful trees of the New World, because of the value of the fruits of several of the species, and especially those of A. sclerocarpa, from which an oil is obtained, known in commerce as "Palm-oil," and the sweet odour of which renders it useful in the manufacture of toilet soaps. As decorative plants none of them are worth cultivation, being rather difficult to keep healthy when young, and rather too ragged in appearance. The seeds are as large as an Apricot, almost round, brown when dry, the outer covering or shell being smooth, shining, and of woody texture. The stem, leaf-stalks, and sheaths are covered with dark spines, and the leaf is pinnate, with the pinnæ arranged irregularly along the rachis.

A. lasiospatha, Mart. ("Great Macau Palm.")—New Grenada, Venezuela, Jamaica.

A. sclerocarpa, Mart. ("Macau Palm").—Brazil and West Indies.

Aiphanes, Willd. = Martinesia.

Ancistrophyllum, Mann.—A genus of several species of climbing Palms, natives of West Africa; of which A. secundiflorum is in cultivation at Kew. None of them is of any value for garden purposes.

Archontophœnix, Wendl. — Two well known garden Palms are the only known representatives of this genus, viz., what are commonly known as Seaforthia elegans and Ptychosperma Alexandræ. Both these plants are extensively grown in this country, as well as on the Continent, for decorative work, their robust hardy nature and graceful habit, even when very young, favouring their employment for purposes of this kind. Large quantities of seeds are annually imported both from their native country, Australia, and from various other tropical countries in which these Palms have become established and produce fruit. In the Palm-house at Kew there is a specimen of A. Cunninghamii, 45 feet high, with a fine head of foliage, and which produces annually a large inflorescence of very ornamental appearance. Young plants of the two kinds may be distinguished from each other by the one, A. Cunninghamii, being green on the underside of the pinnæ, whilst A. Alexandræ is distinctly glaucous. The seeds are a little larger than Peas, round or slightly hemispherical, with an outer covering resembling mace. The seed-leaf and several of the youngest leaves are simply divided, or bipartite, those which follow being pinnate. When large the stem is smooth and ringed. A. Cunninghamii, W. and D. (Seaforthia elegans, Hook., *Bot. Mag.*, t. 4961; Ptychosperma Cunninghamii, Wendl.), Queensland and New South Wales; A. Alexandræ, W. and D. (Ptychosperma Alexandræ, F. Muell., Queensland).

Areca, L.—A large number of the plants known in gardens as Arecas belong to other genera, the cultivated Arecas, at least in English gardens, numbering only five true species, and of these only the "Betel-nut" (A. Catechu) is at all common. A. Aliciæ, a recent introduction from Australia, is likely to prove a useful garden Palm, its free habit and graceful healthy appearance being rather exceptional amongst true Arecas. All of the species are natives of very hot moist countries, so that only distinctly tropical treatment in our houses here proves suitable for them. A. Catechu is very largely cultivated in the tropics of the Old World for the sake of its seeds, which in conjunction with unslaked lime and the leaves of Chavica form the celebrated masticatory of the East, called "betel." They are also used in this country in the preparation of a tooth powder, and for various medicinal purposes. Under conditions favourable to its health A. Catechu is said to form the most elegant Palm in the tropics. Mr. Markham says (*Travels in Peru and India*):—"I have seen Palm trees in the South Sea Islands, in the forests of South America, and in India; but of the whole tribe the Betel-nut Palm is certainly the most elegant and beautiful." At Kew there are several handsome young specimens of this species. Areca seeds are about the size of a Nutmeg, which they also resemble in the markings of the kernel. They are enclosed in a fibry covering or husk, which is pointed at both ends. Seedling leaves bi-partite, as also are the succeeding ones, until the plant is several years old, when the leaves split up into several broad pinnæ. The plants form a walking-stick-like stem at an early age.

A. Aliciæ, F. Muell.—Tropical Australia.

A. Catechu, L. ("Betel-nut Palm").—Tropical Asia.

A. concinna, Thw.—Ceylon.

A. glandiformis, Giseke.—Moluccas.

A. triandra, Roxb.—Bengal and Assam. *W. W.*

A BRITISH ASSOCIATE ON HIS TRAVELS.

(*Continued from p.* 339.)

Ottawa: *September* 1.—I have come over from Montreal to this "city of palaces" for two days' rest and botanising, and have been fortunate enough to get an afternoon's walk with two excellent botanists, Prof. Macoun, the botanist to the Geological Survey, and Mr. Fletcher, the sub-librarian to the Parliament Library and to an English botanist it has been a rare treat. One of the principal features that strikes a European botanist in coming to this country is the great wealth of forest trees in species. These I will not at present attempt to enumerate. Of Conifers we have seen, within a mile of the city, Pinus Strobus, the Hemlock Spruce (Abies canadensis), and the white Spruce (Abies alba), the American Larch (Larix americana), two Junipers (Juniperus communis and J. virginiana, also known as the Red Cedar), and one well-known Arbor-vitæ (Thuia occidentalis). This last is a most beautiful feature of the country, covering the ground with dense thickets, especially on swampy soil. Of Poplars we have also seen three species, Populus tremuloides, the American aspen; P. grandidentata, and the familiar P. balsamifera.

A magnificent hunting ground was furnished by a swamp, within a mile of the city, where literally every step introduced us to some interesting novelty, even at this time of the year. Here we first saw Sarracenia purpurea, literally covering the ground in places. So vivacious are its predatory habits that the President of the Biological Section suggested it might have a useful function in perceptibly thinning the mosquitoes. In the spring this swamp must be literally gorgeous with ericaceous plants, now, of course, long past blossom. Here were pointed out to us two Kalmias, glauca and angustifolia, Arctostaphylos Uva-ursi, Gaultheria procumbens, Andromeda polifolia, Cassandra calyculata, Ledum latifolium, Vaccinium canadense, two Cranberries (Oxycoccus palustris and macrocarpus), Chiogenes hispidula, with its exqusite snow-white berries, and Pyrola rotundifolia. There are also two or three Cypripediums, of which we saw only C. acaule in fruit. Of Ferns, Osmunda regalis, much smaller and slenderer than our form; O. cinnamomea, Pteris aquilina—also hardly recognisable as our Bracken; Struthiopteris germanica, Onoclea sensibilis, and Lastrea cristata and thelypteris; and on the limestone "screes," at a short distance, the rare Camptosorus rhizophyllus, rooting by the ends of its fronds. Of other beautiful and interesting plants I must not stop to speak, but cannot omit mentioning the exquisite fumariaceous climber, Adlumia cirrhosa, scrambling among the bushes. Of shrubs, Cornuses, Cratæguses, Viburnums and others abound; but the collector must beware of carrying in his hand the extremely poisonous "poisoning" Rhus toxicodendron.

Manitoba: *September* 15.—We are now on our way back from the Rocky Mountains. I was fortunate in getting a ticket with the special party of 150, which, however, dwindled down to about 100, in consequence of the inefficient arrangements at starting and rumours as to the great fatigue of the journey. Those who persevered are amply repaid by the variety and magnificence of the scenery, and the addition to their scientific knowledge under the able guidance of Dr. Selwyn, the head of the Geological Survey, and Professor Macoun, the botanist to the same, who have been most indefatigable in adding to the interest and enjoyment of the trip. The Canadian Pacific Railroad Company have also been most munificent in placing at the disposal of the excursion a special train of sleeping cars and steamers on Lake Superior, without charge of any kind, and arranging for it to stop at whatever points of interest were decided on by the party. The only expense has been for meals, which cost about 6*s.* per day. I must, however, confine myself to the botanical features of the country, and propose in the present communication to refer to the distribution of the trees, speaking only of those which have been actually seen by myself or some other member of my immediate party, under the guidance of Professor Macoun. Another communication will be reserved for the herbaceous plants and edible fruits. Perhaps the most convenient plan will be to take the trees under their natural orders:—

Tiliaceæ.—The only Canadian Lime is the magnificent Bass-wood, Tilia americana, which disappears in the west. This is the wood universally used in America for trunk-making.

Aceraceæ.—The common Maples of Eastern Canada are the hard Maple or Sugar Maple, Acer saccharinum, which ceases about 6 miles west of Lake Superior; and the soft Maple, A. rubrum. In the more hilly districts we get also A. spicatum, the pink-limbed samaræ of which are very beautiful. A. dasycarpum, the white or silver Maple, is also not uncommon. From the Red River westwards the most common species is the Ash-Maple, Negundo aceroides, so familiar to us as an ornamental tree. All these species colour beautifully in the autumn, but we were too early for the finest effect.

Rosaceæ.—The commonest wild Plum is Prunus americana, with a pleasant sweet fruit. P. virginiana, known as the Choke Cherry, has its flowers in racemes, and a very astringent drupe; P. pennsylvanica, a very acid red fruit, known here as the Bird Cherry; P. serotina is the black Cherry, rough but edible, a large handsome tree, largely used for cabinet work. The two common Cratægi, C. coccinea and tomentosa, I have already mentioned. The common Mountain Ash is Pyrus americana, very much like ours, but with rather smaller fruit; P. arbutifolia, the Choke Berry, grows especially in swamps. In the west a very pleasant edible red fruit is obtained from P. rivularis. Amelanchier canadensis, and our snowy Medlar, A. Botryapium, are natives of Canada.

Aquifoliaceæ.—The only Holly we have seen is Ilex verticillata, growing in swamps, with ovate serrate leaves.

Oleaceæ.—The common Canadian Ash is Fraxinus americana, a good-sized tree, of rather more slender growth than ours. F. sambucifolia, the Black Ash, is also common in swamps.

Ulmaceæ.—The common American Elm, Ulmus americana, is remarkably different in habit from ours, more slender, and with more drooping branches. U. fulva, the Red Elm, is a much smaller tree.

Platanaceæ.—The western Plane, Platanus occidentalis—called here the Button-wood, or Sycamore—is one of the largest trees of the American forest.

Juglandaceæ.—The common Walnut of the Northern States is Juglans nigra: but it does not go far north in Canada. Easily distingnished from it by its spiny but also edible fruit is J. cinerea, the Butter-nut, seen everywhere in Eastern Canada. Carya alba, the Hickory, with a sweet edible kernel, is one of the most remarkable of American trees; the fruit of C. amara, the Bitter Nut, is too bitter to be eaten. None of these so far West.

Cupuliferæ.—The commonest Oak of the Northern States and Canada is the Red Oak, Quercus rubra, with large handsome leaves and red petioles. A still larger tree is the White Oak, Q. alba, and equally fine is the Swamp Oak, Q. bicolor, with a white undersurface to its leaves. All these Oaks yield valuable timber. The sweet Chestnut, Castanea vesca, is indigenous only in the southern districts of Canada. The American Beech, F. ferruginea, scarcely differs from ours. The Hop Hornbeam, or Ironwood, Ostrya virginica, is a small tree readily distinguished by its narrowly lanceolate serrrated leaves. The American Hornbeam, Carpinus americana, also known as the Blue Beech, is widely distributed through the States and Eastern Canada.

Betulaceæ.—The Paper Birch, Betula papyracea, the tree of which the Indian canoes are made, is a most beautiful tree, sometimes attaining a height of 60 or 70 feet. B. lenta, the Cherry Birch, with dusky bark, does not extend westward beyond the eastern shores of Lake Superior. B. pumila is a beautiful dwarf tree in swamps, of western distribution. In the Rocky Mountains these are replaced by B. glandulosa. The common Alder of the swamps is Alnus incana, with leaves not nearly so dark as ours.

Salicaceæ.—I have already spoken of three Poplars, Populus tremuloides, balsamifera, and grandidentata. One of the grandest trees of Western Canada, as far as the foot of the Rocky Mountains, is the Cottonwood, P. monilifera, growing chiefly by rivers and lakes.

Coniferæ.—The wealth in species of Conifers is one of the glories of American forests. In Eastern Canada the most abundant species is the White Spruce, Abies alba; next to it come the Black Spruce, Abies nigra; the Pitch or Norway Pine, Pinus resinosa; and the American Larch, Larix americana. The majestic Weymouth Pine, P. Strobus, with its magnificent head, is not uncommon. The fragrant Balsam Fir, A. balsamea, the source of the well known Canada Balsam, abounds in swamps; and in more hilly rocky situations the beautiful Hemlock Spruce, A. canadensis, with its graceful Cedar-like growth. From Lake Superior westwards we meet with P. Banksiana, a smaller Pine, with long, spreading, flexible branches. Far westwards, in the Rocky Mountains, several new species present themselves—P. contorta, with a cone very much like that of P. Banksiana, but almost always more or less twisted when mature; P. albicaulis, the magnificent Douglas Pine, A. Douglasii, P. Engelmanni, with its remarkable erect, very narrow habit, which clothes the slopes of the mountains, and a small Larch, Larix Lyallii, not found below an elevation of 7000 feet. The Juniper of Canada is Juniperus communis; on the Rocky Mountains is a procumbent variety, J. alpina; and on the Rocky Mountains we get also a procumbent variety of the Savin, J. procumbens. Juniperus virginiana, the Red Cedar, grows to a considerable height, chiefly in dry, rocky situations. The swamps in the Northern States and Canada are covered with thick growths of the beautiful Arbor-vitæ, Thuia occidentalis. The true White Cedar, or Cypress, Cupressus thyoides, is a native of Canada. *A. W. B.*

Orchid Notes and Gleanings.

Orchids at Messrs. Veitch's Nursery, Chelsea.—I was fortunate in calling at this nursery the other day to see the large specimen of Vanda Sanderiana which flowered in Messrs. Backhouse's nursery at York. It has passed into the hands of Messrs. Veitch on its way to America. The flowers were mostly fading, but when they were in full beauty they must have been a sight to command admiration. There were sixty-seven flowers, each of them 4¾ inches by 4 inches. A remarkable and truly handsome Orchid in flower is Oncidium Jonesianum, it has very peculiar lanceolate leaves; the flowers, thirteen on a spike, are very pretty, and are 2½ inches across, sepals and petals cream, thickly spotted with reddish-brown; the prominent lip is pure white, with a few crimson spots at the base. What a contrast, too, between the compact little Zygopetalum rostratum with its large handsome flowers, remarkable for their pointed heart-shaped lip, which is white, with a few pink streaks; and the very beautiful Z. maxillare in two varieties, one with the lip rich deep blue, and the other with a paler lip. These Orchids are very useful to flower now and later. There are three distinct species of Miltonias in flower, all of them handsome autumn flowering species; the most striking is M. Moreliana—it is so distinct with its large rich purple flowers. M. spectabilis is very pretty and freely flowered, the sepals and petals white with a large purplish and white lip. Miltonia Clowesii is distinct from any of the others in its long spikes, well furnished with flowers, the sepals and petals yellowish, spotted dark brown, the ground colour becomes darker as the flower gets older. Most of the Miltonias grow freely enough in the Cattleya-house, and the three named are amongst the best of them. Phalænopsis violacea is now finely in flower, and is so distinct and pretty that no collection should be without it, although it is surpassed by P. violacea splendens, which is more richly coloured and quite distinct. Perhaps the finest specimen in the country of P. Schilleriana is to be found here; there are two growths, well furnished with large thick leathery-looking leaves and throwing up two flower-spikes. Amongst several forms of Vanda tricolor, the Chatsworth variety is prominent by its beautifully spotted sepals and petals; there is a large plant of it with a good spike. Aërides Huttoni is very distinct from any other of this genus in its peculiarly formed flowers, which are also placed in a unique way on the spikes; they are of a rich purplish-rose colour. A neat little plant beautifully in flower is Cycnoches barbatum; the lip is thickly studded with fine hairs, the flowers whitish, densely spotted with maroon-crimson.

There is rather a dearth of Cattleyas in flower at present. The pale-coloured form of C. labiata is in flower, also the distinct and beautiful C. speciosissima; the flowers, large, are of a delicate lilac-rose colour. C. Wallisi is a gem amongst Cattleyas; the flowers, pure white, are of good form and substance, while the rich orange blotch on the throat is very effective. C. Eldorado is very desirable, some of the varieties have a richer orange blotch at the base of the labellum than others; it is also very sweet. C. bicolor, distinct and pretty, with its distinct rich purple lip, and a variety with a white margin to the lip, is designated C. bicolor alba. C. devoniana, a hybrid raised by the firm, is always in flower in September; it is of the Lælia elegans type, its sepals and petals brownish, flushed with purple, and the richly coloured purplish lips are very effective. C. gigas is very fine at this season. Lælias comprise a good form of L. purpurata and a splendid variety of L. Schilleriana, in growth and flower so like the best forms of L. elegans; the sepals and petals are white, with a handsome crimson lip. L. elegans prasiata, one of the dark-sepalled varieties, is very handsome, the lip rich crimson. It is interesting to see so many species and varieties of Cypripedium in flower; their name is legion. Of the charming little C. Fairrieanum there are three plants in flower, doing well in a Cattleya-house temperature. The true C. purpuratum is a distinct species. The dorsal sepal is white and pointed, marked with purplish lines; the lip and lateral sepals are dark brown. C. œnanthum superbum, remarkable for its brown spotted dorsal sepal, shaded with purple, and margined white. C. grande is a noble-growing plant, the flowers large and striking in form. C. cardinale, C. Schrœderæ is certainly the finest hybrid yet raised. C. Ashburtoniæ is in the form of a fine variety; the upper part of dorsal sepal is pure white, the lower prettily spotted. The others in flowers are C. Dominianum, C. calurum, C. Sedeni, C. Hookeræ, C. insigne Maulei, C. Harrisianum, C. Lawrenceanum, C. selligerum, and the lovely C. niveum. The above list of Cypripediums in bloom shows how well adapted they are for decorative purposes at this season of the year, as they are not in the form of solitary specimens, but in most instances in plenty.

Phaius Robertsii.—Baron von Mueller describes in Wing's *Southern Record* a new species, under the above name. It is a native of New Caledonia, and is described as lovely. It was discovered by Consul Layard in one locality only, and a specimen is in cultivation in Melbourne under the care of Mr. James Roberts. The flowers are brownish-yellow streaked with red. The lip is destitute of spur, and the column projects beyond the anther. The capsules are freely produced in cultivation, which leads the author to infer that insects are not necessary for the fertilisation of the flower.

Eria Corneri, Rchb. f.—A plant of what I take to be this species has just flowered at Kew. It is a rather pretty and neat species, with tetragonous bulbs, oblong-lanceolate, acute, thin, 5-nerved leaves, and erect many-flowered racemes of very pale greenish-white flowers, having the tips of the lips mauve-purple; the side lobes of the lip are also faintly tinted with the same purple. The racemes arise from the top of the bulbs, just at the outside of the bases of the two leaves. Professor Reichenbach describes the plant as coming from Formosa; the Kew plant came from Lo-Fau-Shan. *N. E. B.*

Phaius bicolor.—A a summer-flowering Orchid for the intermediate-house this Phaius is a useful addition to the popular P. grandifolius and P. Wallichii. Like these, P. bicolor is very easily grown and flowered, whereas P. tuberculosus, P. Humblotii, and several other species are exceptionally hard to manage successfully. P. bicolor resembles P. grandifolius in habit, in the strength of its bulbs, and in the form of its flowers. The colour of the flowers is, however, quite different from that of any other Phaius, the lip being white, yellow, and deep rose, and the sepals and petals a brownish-red. In the Orchid-house at Kew there are several plants of this Phaius, and one of them has been in flower for several months, so that in addition to its distinct floral character this species has the useful character of flowering freely and lasting in bloom a much longer time than any other Phaius. We find it a wise plan to rest the stronger growing Phaiuses quite as long as is generally practised for their allies, the Thunias. After a good rest in a low temperature, by repotting the bulbs in a strong loamy soil to which a little charcoal and rough sand has been added, and placing them in a warm moist house, we find these plants make good strong growth and seldom fail to produce flowers. Although old and in a manner despised by some orchidists, these fine terrestrial Orchids are still worthy of a place in all Orchid collections. *W. K. R.*

Dendrobium Phalænopsis.—If we imagine for the time being the pretty D. bigibbum we obtain a pretty fair idea of the habit and general appearance of this conspicuous and showy Orchid. The flower, however, is several times larger than that, but exhibits a close affinity in the construction. It comes from Timor, in the East Indian Archipelago, occupying the same parallel of latitude as the Torres Straigts, the home of the latter. The sepals are very pale, but the large rhomboid-obovate petals are of a warm rosy-purple, while the labellum is dark purple and deeply three-lobed. Both are characterised by a crest or band of papillose hairs on the labellum, but in D. bigibbum the latter organ is obscurely lobed, and the petals are transversely oval. The large and showy petals of the species under consideration, together with their shape, had doubtless suggested the specific name. It has been flowering for some time in the East Indian-house at Kew, and undoubtedly calls for consideration as a decided acquisition to a genus long ago numerously represented in gardens. *J. F.*

Cattleya Whitei.—A flower of this, taken from the original plant in his possession, has been forwarded to us by Holbrook Gaskell, Esq., of Woolton Wood, near Liverpool, and presents to our view another botanical puzzle. The plant was found by Mr. White, Messrs. Hugh Low & Co.'s collector, growing on a tree in company with C. labiata and C. Schilleriana. In due course it flowered, and proved to be a very lovely and quite new kind, and as such it was awarded a First-class Certificate at the Royal Horticultural Society on July 25, 1882. The flower before us has just the aspect one would expect to find in those of a plant intermediate between C. labiata and C. Schilleriana, except that in such a plant the floral segments would be supposed to exhibit more of the colouring of C. Schilleriana. Our knowledge of these hybrids, however, proves that they often adhere closely to the characteristics of one of the parents in some of their points, not seeming to be affected by the influence of the other in those particulars. The petals are of great substance, light rose tinted with mauve in colour, with a pure white ray extending up each from the column. Across the expanded petals the flower measures 6 inches, and they are each 1 inch in width. The labellum is 2½ to 3 inches in length, arched over, as in C. Harrisoniæ, for the upper 2 inches, and then expanding into a flat, almost circular lip about 1½ inch in diameter, and beautifully crimped at the edge. The tubular upper part of the labellum is white tinged and veined with rose, throat white veined with orange, the flat, circular, lower portion of the labellum is bright rose tinted and lined with mauve. C. Whitei is a most extraordinary and desirable kind, unlike any other known Cattleya.

NEW SINGLE DAHLIAS.

Not many years ago any one who had given place in their garden to a single form of this flower might have expected to be reminded that he was making a retrograde movement, for, had not every one who had turned his attention to the raising of new varieties, during more than half a century, been steadily striving all he could to get as far away from the single form as possible, and had so far succeeded that it would have been a difficult task to have discovered a really single variety if one had ransacked a whole county in the search. Neither was this to be wondered at, for not only were the florists following their own ideas of what constituted the perfection of form in the flower, but in thus striving at a perfectly globular shape they were simply meeting the demand of the public, who would have nothing else. True there always were a few isolated individuals who voted the Dahlia of the florists a dumpy flower, which they would not have; yet for a long time those who held such notions were so few in number that they were taken little notice of. But a

change came about, and a few of those who have an eye for simple beauty, and who look on many double flowers as flowers spoilt, had the courage to not only grow single Dahlias, but also to exhibit them; and in this, as in a good many other things, fashion turned round on itself, and, so far as the general public go, it may be safely said that single Dahlias promise soon to be looked on with more favour than the double ones. The greatly increased demand for flowers for cutting has had a good deal to do with the change; few flowers are so inelegant in appearance, or so ill adapted for ordinary cut purposes as the large double show Dahlias. The small pompon forms are less objectionable in this way than the large kinds, but they, in common with all double flowers, lack the elegance of the single ones.

As might have been expected, the supply of new varieties has kept up with the demand, considerable numbers of distinct looking sorts yearly making their appearance, many of which have been seen at the leading shows. But with them, as it ever has been with the large varieties, everything relating to their merits or defects cannot be judged by a sight of the flowers alone, which give no clue to the habit of growth in the plants, or their freedom of flowering; both matters of the first importance in estimating the value of any particular variety as a decorative plant. The low-growing, comparatively slender, free-branching sorts, usually produce double the quantity of flowers that the taller, more robust-habited varieties will. Mr. Ware, of the Hale Farm Nurseries, Tottenham, has gone largely into their cultivation, and has raised many fine varieties; last year the seedlings occupied something like 5 or 6 acres.

There is one thing connected with these single Dahlias that most people are agreed upon, which is, that the flowers should not attain a large size, the big, coarse-flowered varieties are quite unsuited for cutting, and not so effective on the plants, as what they gain in individual size they lose in numbers.

The following notes, which were taken at the Hale Farm Nurseries about the middle of September, are confined to a description of the new sorts, with the habit of growth of the plants:—

Admiration.—A distinct-looking, small flower of the Paragon character, but the outer crimson edge of the petals is not quite of so vivid a shade as in Paragon; anthers deep golden-yellow; a dwarf compact grower and profuse bloomer.

Beauty of Uplands.—Glowing deep scarlet, the petals tipped with golden-yellow; flowers not too large.

Cetewayo.—Deep blackish-maroon; a very free bloomer, of dwarf, bushy habit.

Henry Irving.—Deep plum colour; dwarf, and exceedingly free; a beautiful sort.

Indian Yellow.—Yellow shaded with red, medium in size, broad petals, giving the flower a circular outline; a distinct sort; a somewhat tall grower.

Mrs. Bowman. — This sort has moderate-sized flowers of a distinct rosy-purple colour, the petals reflexing a little.

Mrs. Castle.—Lake shaded with rose; a beautiful effective sort and a free flowerer.

Silver King. — Flower cinnamon, edged with lemon-yellow; a distinct-looking attractive sort, a medium grower with medium-sized flowers.

Freedom.—This is one of the stellate section, with narrower segments than the reflexed petalled sorts; the colour is scarlet-lake; a dwarf bushy grower and free flowerer.

Ingomar. — Flowers star-shaped, bright magenta in colour, of dwarf habit and very free.

B. Barkway.—A remarkably distinct and effective variety; the flowers are of medium size, deep scarlet, edged with orange-red.

Dr. Moffat.—A good-sized flower, petals broad, blackish-maroon in colour, edged with crimson; a beautiful sort.

Elise.—A dwarf-growing sort, bearing quantities of flowers, bright scarlet in colour.

Mary Anderson. — Intense orange-scarlet, petals narrow; a dwarf grower and profuse bloomer.

Pauline.—A distinct and pleasing sort, with dwarf bushy habit of growth; petals mauve, with yellow base.

Invincible.—A striking variety, with red flowers.

Illustration.—The best of the yellows; a small-flowered sort, dwarf, and an immensely free bloomer.

Cannell's Midget.—A very small-flowered sort, dwarf and bushy in habit; the flowers are deep scarlet.

Out of a large number the above were the most desirable varieties, taking all properties together, but especially on account of the distinct, effective character of the individual flowers and the freedom with which they were produced. *T. B.*

DISEASE IN PALMS.

Pestalozzia phœnicis, Vize. — In the *Gardeners' Chronicle* for June 21, 1884, p. 799, a short article is printed on a "Disease of Palms." It is stated that during the previous summer different persons had forwarded plants of Corypha and Phœnix,



Fig. 76.—Pestalozzia macrospora, Ces.
A fungus which causes disease in Ferns. Enlarged 1000 diam.

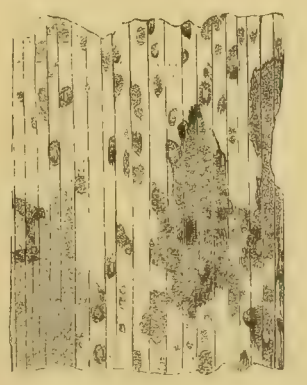


Fig. 77.—Fragment of leaf of diseased palm: nat. size.



Fig. 78.—Pestalozzia phœnicis, Vize.
A fungus which causes disease in Palms. Enlarged 1000 diam.

the leaves of which were covered with black patches. The article then states that "Herr Professor De Bary, of Strasburg, had the kindness to examine them," and the result of the examination is given. The Professor saw a fungus, named Pestalozzia, which he does not name, favouring the inference that the pest was unknown to him. At the end of the article the Professor says, "What concerns us most is the destruction of the fungus;" but, strange to say, not a word is printed as to any mode of destruction.

This disease of Palms is perfectly well known in England, the fungus which causes it was described eight years ago by the Rev. J. E. Vize, under the name of Pestalozzia phœnicis, in *Grevillea*, vol. v., p. 14. At fig. 77 we have engraved a fragment of a leaf of Phœnix showing the disease spots, and at fig. 78, enlarged 1000 diameters, a group of three spores of the parasite. The spotted leaf speaks for itself, the spores are very beautiful and remarkable. Each spore is supported on an extremely slender transparent stalk, is furnished with four joints or septa, and so is composed of five cells, the three central cells being brown, and the upper and lower quite colourless. The upper cell of each spore is crowned with from one to five highly attenuated hairs or setæ, as shown; in rare instances the hairs are once forked This crest of slender hairs somewhat resembles the pappus belonging to the seeds of the Dandelion and other Composite plants. What the use of this crest may be is unknown, but it may possibly aid the distribution of the spores by helping them to sail in the air, or the threads may get entangled on to the legs and bodies of insects, and so be readily carried from one position to another. The three central cells of each spore are persistent, and each one germinates and reproduces the Pestalozzia, whilst the basal transparent cell and the upper cell, with its crown of threads, speedily collapse and perish. The spores are extremely small in size, and require very powerful glasses for their magnification; twenty or thirty of these minute reproductive bodies would go easily inside one spore of the fungus of Onion mildew, Peronospora Schleideniana, Ung.

There is perhaps a shade of doubt as to whether Pestalozzia phœnicis, Vize, is capable of directly causing disease in Palms, still the evidence seems to point in the direction that the pest is really able to do this.

Professor De Bary says the Palm Pestalozzia is related to, but not identical with, P. macrocarpa, Ces. The latter fungus, which is common in the South of Europe and America, attacks Ferns, and we have engraved a single spore belonging to it in fig. 76. A much nearer ally, however, to the Palm Pestalozzia is found in P. Guepini, Desm.; in this the spores are very small, though larger than in P. phœnicis, Vize; this pest is often very destructive to Camellias. Another species, P. funerea, Desm., attacks Cypresses; and P. lignicola, Cke., grows on chips.

If this injurious Palm fungus is really spreading in this country, as the original communication to the *Gardeners' Chronicle* seems to indicate, gardeners should be on the look-out for it. As soon as the bright, dark brown disease spots are seen, the infected places should be carefully cut away and burnt. *W. G. Smith.*

BOUVARDIAS AT ASKE HALL.

From the nature of the pursuit, those engaged in gardening are liable to become fixed in a kind of routine course of treating the various plants they cultivate. Hence it is that when an improved method of growing any particular kind of plant happens to be hit upon, it is much longer in becoming generally adopted than might have been expected; thus it is with Bouvardias, which are amongst the most useful of all plants for the production of flowers for cutting, blooming as they do almost continuously so long as the plants have strength enough in them, and the temperature they are kept in is sufficient to induce the development of flowers. The ordinary way of managing them is to grow the plants in pots continuously through their various stages from cuttings onwards, under which treatment they thrive and bloom fairly; but, as has before been urged in our columns, with the best attention in this way the quantity of flowers they yield is much less, and the trusses much smaller than where the plants are turned out in a bed in spring and grown in this manner through the summer. This is the way Mr. Letts manages his Bouvardias; in the case of old plants that have been forced during the winter they are headed well back, and as soon as they have broken into growth are turned out in pits and frames in beds made up of loam, leaf-mould, sand, and manure. Comparatively little attention is required under this method of treatment, as the plants do not so often need water, and are not liable to get a check for want of it. In this way each plant produces six or eight shoots, 15 or 18 inches long and nearly as thick

as an ordinary Cedar pencil, flowering at almost every joint. They are taken up and potted about the middle of September, and kept a little close and shaded for a few days until their roots begin to move, when they are treated as to warmth so as to give a succession of bloom. Young plants when well rooted are turned out in this way and subsequently treated as the older ones. *T. Baines.*

INTERNATIONAL EXHIBITION, 1885.

It is intended to hold at the Alexandra Palace next year an Exhibition of Arts, Manufactures, Scientific, Agricultural and Industrial Products. A special feature will be "The World's Forestry Exhibition," under the management of Mr. J. Forsyth Johnson, and intended "to show forth the Productions of the Forests of the World, from the Pine Forests of the Far North to the Palm Forests of the Tropics." The Exhibition of Forestry comprises the following classes :—

Class I.—*Practical Forestry.*

Section 1.—Implements and tools used in forestry; draining, enclosing and surveying instruments, chains, dendrometers, &c.
,, 2.—Models of foresters' huts, drying sheds, charcoal kilns, timber slips, sluices, bridges and weirs.
,, 3.—Plans of river embankments, rafts and appliances for floating timber.
,, 4.—Machinery or models for transporting timber and transplanting trees.
,, 5.—Saw mills, wood-working machinery of every description, and pulping apparatus in motion or otherwise.
,, 6.—Fencing materials of all kinds, including gates and stiles.

Class II.—*Forest Produce, Raw and Manufactured.*

Section 1. Collections of timber specimens and ornamental woods :—
A.—Indigenous or naturalised.
B.—Exotic.
,, 2.—Wood used for ordnance, as gun-carriages, &c.
,, 3.—Wood used for railway purposes, natural or prepared; carriages, improved waggons, sleepers, &c.
,, 4.—Wood pavements.
,, 5.—Cooperage; tubs, barrels, &c., back and vat makers, &c.
,, 6.—Wood carving and turnery with tools used.
,, 7.—Basket and wicker-work.
,, 8.—Fancy woodwork, including veneers, parquetry, bog Oak articles, stained and coloured woods, &c., bent wood, fret-work, cabinet-work.
,, 9.—Wood engraving, with samples of wood, wood letters, &c.
,, 10.—Bamboos, canes, and reeds, and manufactures therefrom; clarinettes, basoons, &c.; chairs, screens, mats, blinds.
,, 11.—Farming substances; barks, extracts, &c.
,, 12.—Dyeing substances; woods, roots, flowers, &c.
,, 13.—Barks, including cork; kamptulicon, virgin cork, cork cutters.
,, 14.—Fibres and fibrous substances; straws, bonnets, &c.; linen and cotton, mats, sails, bee-hives, brushes, tents, cocoa-nut fibre, hemp, flax, &c.
,, 15.—Materials for paper manufacture, and specimens of papers.
,, 16.—Gums, resins, and gum elastics; india-rubber goods, pouches.
,, 17.—Wood oils and varnishes, including lac of sorts.
,, 18.—Drugs, foods, spices.
,, 19.—Charcoal for gunpowder, tinder, &c.; filters, vegetable charcoal (medicinal), deodorisers, &c.
,, 20.—Peat and its products.
,, 21.—Cones, seeds, and fruits of trees and shrubs.
,, 22.—Wood used for land and water transport; carriages, carts, barrows, omnibuses and cabs; yachts, boats, rafts, models of ships, barges, masts, &c.
,, 23.—Building woods; Pines, Deals, Mahogany, Sequoia, Oak, &c.; portable houses, conservatories, blinds (Venetian), revolving shutters, &c.
,, 24.—Wood used for surgical appliances, &c.; wooden legs and arms, stretchers, invalid bedsteads, invalid chairs, ambulance vans, &c., bed rests.
,, 25.—Wood used for fine arts; pencils, easels, drawing boards, frames, brackets, &c.

Class III.—*Scientific Forestry.*

Section 1.—Botanical specimens of forest flora.
,, 2.—Microscopic sections of woods.
,, 3.—Parasites; fungi and lichens injurious to trees.
,, 4.—Edible fungi, in their natural state or preserved.
,, 5.—Forest fauna injurious to woods.
,, 6.—Forest entomology—useful and noxious insects, with specimens illustrative of the damage done by the latter.
,, 7.—Preserving processes applied to timber.
,, 8.—Specimens and diagrams illustrating the geological formations adapted to the growth of trees.
,, 9.—Fossil Plants; collections illustrative of the trees of the coal measures, &c.
,, 10.—Trees found in bogs, Oak, Fir, &c.

Class IV.—*Ornamental Forestry.*

Section 1.—Growing specimens of rare and ornamental trees and shrubs, in tubs or otherwise.
,, 2.—Rustic-work; arbours, bridges, gates, seats, &c.
,, 3.—Dried specimens of ornamental objects, including foliage.
,, 4.—Plans and designs for landscape gardening, &c.

Class V.—*Illustrations of Forestry.*

Section 1.—Paintings, photographs and drawings of remarkable or historical trees, foliage and scenery.
,, 2.—Delineations of trees in their native countries, or of recent introduction.
,, 3.—Illustrations showing effects of blight, accident, parasitic growths, or any abnormal condition.
,, 4.—Sketches of practical work and operation in the forests.

Class VI.—*Forest Literature and History.*]

Class VII.—*Essays and Reports.*

Class VIII.—*Loan Collections.*

Class IX.—*Economic Condition of Foresters and Woodmen.*

Class X.—*Miscellaneous.*

Diplomas and medals will be given. One-tenth of the entire receipts for admission to the general exhibition will be set aside for distribution among the hospitals of London. Intending exhibitors should apply, for full particulars, to the Secretary, Edgar Ray, Esq., 19, Queen Victoria Street, E.C.

FORESTRY.

Work for October.—Since the fashion, which of late years has become more popular, of planting ornamental grounds for "immediate effect" is one well worthy of extension, the present month may be considered the busiest in the year with the planter, for at no other time can the largest and finest specimens be moved with a like amount of success. The reason of this is that having now sufficiently matured their growth for this season, trees are better able to withstand the rough treatment which unavoidably falls to their lot when being transferred from one position to another, while the roots still are in a state of activity, and thus enabled to lay hold of the soil in their new situation, which the warmth of the earth, assisted by copious autumn showers, materially assists them in doing.

The great advantages derived from early autumn planting are now generally confessed, yet for all this it is quite wonderful how much of the work of transplanting is deferred to the short, chilly days of mid-winter, or the bitter, parching ones of March, both of which, more especially the latter, are most detrimental to newly transplanted trees and shrubs. Preparations for planting, where not already made, should at once be set about, and as quickly as possible brought to a close. These will include fencing, clearing the ground of rough vegetation, such as Gorse, Broom, Heath, &c., as well as the laying-out of roads, and drainage of such portions as is deemed advisable. Where, however, ground intended for planting is of a wet, retentive nature, such had much better be deferred till spring, as the cold, damp soil is anything but beneficial for the tender rootlets of newly-transplanted trees. Peat bog is another example of this kind, which, in but few cases at most, should never be planted till spring, the antiseptic qualities of this class of soil being very injurious to the rootlets of trees, &c. Care must be taken not to remove deciduous plants before their young growth is fully matured, after which they may be taken up and laid in, if not at once required, with a good covering of soil over the roots.

For ordinary planting we have found the greatest success to follow the use of one-year seedling twice transplanted Larch, and two-year Scotch and Spruce Firs, more especially where these have been afforded ample room in a moderately rich nursery border.

As soon as possible nursery stock for the present season's planting should be selected, and as the ground gets cleared a heavy top-dressing of well-rotted manure, leaf-mould, or prepared compost, should be added, and the soil turned loosely up so as to receive the full benefit of frosty weather during winter.

The preparation of seed-beds and sowing of such seeds as become ripe about this season will also require attention. Walnuts, acorns, Horse and Spanish Chestnuts, Hazel Nuts, and various other seeds should, when they can be well protected, be sown at once, as the start made in spring far more than compensates for any little extra trouble in the way of preventing the depredations of vermin that may be incurred. Early in the present month, when the temperature of the earth and air are more equable than at any other time, cuttings of various kinds—Laurel, Privet, Dogwood, Poplar, &c.—should be inserted in previously prepared plots of sandy soil. Layering may also be attended to, which is a capital and quick method of getting up a stock of such plants as are increased in this way.

Seedling Rhododendrons where of sufficient size, should be transplanted into a peaty bed, made free and loose by the addition of sharp sand. This latter is an adjunct which should never be omitted in soil intended for the reception of Rhododendrons, more especially those of tender years. Clearing and hoeing, where necessary, may still be attended to, gravel walks in the nursery edged, and everything made as tidy as time and hands will permit. The cones of coniferous trees will require attention, and should be gathered as they become ripe; indeed, those of the Abies tribe must be collected previous to being ripe, if not, the scales fall asunder, and the seeds are consequently lost. Collect Birch and Alder seeds, and have them stored away in a dry, airy loft till required in spring.

Continue the thinning of Pine plantations, clearing out the thinnings and branches as the work proceeds. When thinning has been performed, clear out all open drains, and see that they are in proper working order before the winter rains set in.

Pine branches should not be allowed to remain in the wood during winter, as they form a perfect nursery for beetles to hybernate or pass the pupa state in Ornamental trees, whether in the policy grounds or alongside woodland drives, should have an open space cleared around them so as to induce a proper development of head. Broken or twisted branches, as well as dead or dying trees, will look the better for removal. The latter, if in conspicuous positions, should be grubbed up, the turf being previously taken up, and carefully replaced when the work is completed.

Hedge trimming, where not already well advanced, should be pushed on energetically, as the sooner such work is off hand the better. Prepare ground for the reception of Quicks by a thorough trenching, few plants being more amenable to good cultivation than this plant. Early planting is also to be urged, as when we consider that the Thorn is one of our first trees to burst into leaf, the necessity of early planting must at once be admitted. Hedges formed during the past season will require attention in the way of clearing, hoeing, and a slight side switching, all of which will considerably enhance their value ultimately as fences.

As time permits prepare materials for road repairing during the coming winter. Roll grass and gravel walks, collect leaves, and attend to general tidiness throughout the policy grounds, and over the estate generally. *A. D. Webster, Penhryn Castle, North Wales.*

The Flower Garden.

Owing to the unusually fine weather we have experienced during the past fortnight the flower garden still continues gay and attractive, and, so as to prolong its beauty as much as possible, the plants should be left undisturbed for a short time longer, except such beds as present a shabby appearance, and these should be immediately cleared, redressed, and furnished with such plants as are suitable for winter or spring decoration. A watchful eye should, however, be kept on the weather, so as not to allow those plants which are intended for future stock to suffer from the effects of frost. These, when a convenient time arrives, should be carefully taken up, potted, and placed in a cold frame or moderate heat, according to their nature, until they take root, when they may either be grown on gently to give an early batch of cuttings for propagation, or stored in a cold-house or frame through the winter. Should the stock of plants for next season still be deficient, no time should be lost in propagating the requisite quantity of all those kinds which are more properly struck at this season, and, so as to facilitate the work at this late period, they should be plunged either in a moderate hotbed or propagating pit for a few days.

This is an excellent time for the propagation of Calceolarias, Pansies, Violets, and all the rest of the hardy and almost hardy plants which are now used so liberally in the summer garden. For this purpose all that is required is a few handlights or a three-light frame, 3 or 4 inches depth of sandy loam mixed with a little leaf-mould and sand, which should be trodden quite firm, and the cuttings inserted. The lights may be kept close for a few days, removing them, however, on fine mild nights. When they commence to root air should be given freely at all times, except when frosty, and in severe weather a little protection of some kind should be placed over the frames. They will require no further care till they begin to grow in the spring, when they should be topped, and transplanted either into their summer quarters or into other frames. They generally, however, succeed best with the former treatment, which enables them to get well established before hot weather commences, and although they do at times suffer slightly and become checked by spring frosts, yet they seldom fail to break again into free growth, and succeed much better than they do after being coddled in frames till May.

Strict cleanliness should be maintained in the flower garden at this season by daily attention in picking over the beds, also in sweeping and rolling walks and grass, as upon the nice and regular execution of this work largely depend the beauty and pleasure to be derived from the garden at this late season.

The herbaceous garden is now looking particularly charming and brilliant, and with ordinary care in tying up straggling growths, clearing off decaying plants and leaves, and hand-weeding the beds—for, be it observed, these should never be hoed, forked, or otherwise disturbed—this garden, with its most abundant, ever varied, and most brilliant colouring will continue gay till severe frosts change its appearance. It will continue, however, bright and gay when all others have succumbed to the fogs and frosts of autumn. In the mean time, careful notes should be made of any undesirable irregularities or objectionable combinations which may exist, with the object of rectifying the same at a convenient season. The "rock garden" and the "fernery" should also now receive some attention, similar to that bestowed on the herbaceous borders, as amongst these there are always some tender and somewhat miffy subjects, which not only require protection from the encroachments of their stronger neighbours, but who also at this time require the friendly protection of a little leaf-mould, ashes, or dry Fern, to enable them to weather the storms and frosts which we may soon expect. The shrubberies may now be thoroughly rearranged and remodelled by the removal of all useless, ill-placed, or undesirable plants or trees. In doing this, care should be taken to give, as far as practicable, a bold and prominent position to the best and most rare specimens; and in arranging the commoner or less important kinds, endeavour to give sufficient breadth and character by planting several plants of one species, rather than intermingle too many sorts in an indiscriminate manner, always keeping in view the peculiar habit of growth of each kind, and the ultimate size to which it is likely to attain. Do not plant too close so as to form a thicket at once, but rather allow a sufficient space to enable each plant to develope its proper shape before forming the complete clump, and before making it necessary for the pruning-knife to be used to keep it within proper limits. *T. S. C.*

The Kitchen Garden.

Late Potatos should, if not already done, be taken up at once. All those fit for table should be picked up first when dry, and stored by themselves in narrow pits on high ground, if convenient, of from 3 to 4 feet wide, taking care that the base of the pit is sufficiently high that no water can enter; and if thought necessary, cut a track around the pit for the purpose of carrying any moisture away. We find our late Potatos keep very well placed in ridges under which some dry Fern is placed, and from 3 to 4 feet high from the base to the top of the ridge, and covered first with dry Fern, and subsequently with as many inches of soil as will keep out the frost. The Fern being of a light open character, and not so likely to decay as straw, will admit of the escape of moisture arising from the massing together of the tubers, and which is more or less according to the condition of the tubers at the time of being ridged. This, however, will have ceased before it will be necessary to add a covering of soil to the Fern. The Potato ridge should be covered as the building of the latter is proceeded with, in order not to expose the tubers intended for table use longer than is necessary. With those intended for seed, which should also be pitted, this does not matter; indeed, some people expose them intentionally for that purpose, as the tubers are calculated to keep better.

Ordinary Work.—Any blanks which have taken place in the ranks of recently planted Cabbages should be filled up forthwith with plants of the proper varieties. Look well after grubs, which are very destructive to the roots of these subjects, their presence at the roots of the plants being detected by the sickly appearance of the leaves. Let Celery be well earthed-up, so that in the event of frost as little of the stems is exposed as possible, but keep the soil out of the hearts of the plants. With this object in view it will be necessary to be provided with a good stock of dry Fern or other like material, with which to protect such things as Lettuce, Endive, Celery, &c., from the frost; Cauliflowers and Broccolis, too, which are now coming in should be either lifted and stored away out of the reach of frost, or have the leaves bent over the head, which will effectually protect them from injury from a few degrees of frost. Tomatos, which are soon injured by frost, should be gathered as soon as the fruit commences to colour, and be spread upon the staging or on boards in a late vinery, or in any moderately warm place, even suspended in a stokehole.

Where the necessary quantities of herbs have not already been cut and dried, as recommended in a previous Calendar, no time should be lost in doing so, lest the plants get cut down by frost, that is, if they are not so injured in the meantime. Beetroots which were planted at the foot of a south wall in the spring for seeding should now be taken up, tied together in small quantities, and suspended in a stokehole or dry shed for a few weeks before having the seed cleaned out. The collecting of a good stock of French Beans and Scarlet Runners for seed, and the placing of them in an early Peach-house, vinery, or dry shed, to harden before being shelled, should be seen to without further delay. Peas for this purpose will have been already harvested, labelled, and put away in the seed-room until required for use. Chillies growing at the foot of south walls, and which plants have not yet ripened all their fruits, should be either taken up carefully with a ball of earth adhering to their roots, and be potted into suitable sized pots, watered, and stood in a warm pit to ripen their crops, or else be tied together by the stems in small quantities and suspended in a warm airy place to ripen their fruit.

Frame Ground. — As yet the subjects in this department have not had the sashes or shutters placed over them, the nature of the weather being such as not to necessitate their being covered, but both are in readiness for placing over the plants. From the time that plants of this description (Cauliflower, Lettuce, &c.) are planted in their winter quarters until they are finally transplanted in the spring, they should have all the air that it is possible to give them during fine weather, in order to ensure a sturdy growth, which will enable them the better to withstand the effects of winter.

Forcing Department.—French Beans, which were sown the second week in September, will ere this have had the points nipped out, and the plants earthed-up to the rim of the pot. The plants should be kept near the glass to prevent them from making a spindly growth, and be syringed overhead morning and afternoon on sunny days, and a night temperature of from 55° to 60° will be congenial to the well-being of the plants. Make another sowing of Cooling's Ne Plus Ultra, which, as observed in a former paper, is an excellent early forcing variety, in the manner described at p. 303, and in quantity according to the accommodation at command and the demand for the same in each individual establishment. Tomato plants, where these are grown for fruiting during the winter and spring months, whether in pots or planted in a bed, must have attention in the way of thinning, stopping, and training of the shoots and leaves; the latter should be kept well within bounds, and the roots when necessary—that is, when the plants are swelling their fruits—liberally supplied, especially so if confined to pots, with tepid weak manure-water. *H. W. Ward, Longford Castle Gardens.*

The Hardy Fruit Garden.

Such Pears as Passe Colmar, Duchesse d'Angoulême, Napoleon, Gansel's Bergamot, Thomson's Duchesse de Bordeaux, Pitmaston Duchess, Brockworth Park, Belle Julie, and all other mid-season Pears, should now be gathered; also that finest of all stewing Pears, viz., Catillac, which, from its large size, ought also to be got in, in case a high wind comes along, and one wake up some fine morning to find half of them down; but the late Pears ought to hang another fortnight, except, perhaps, the Ne Plus Meuris, which is apt to shed its fruit prematurely. The same applies to autumn Apples, such as King of the Pippins, Shepherd's Pippin, Stirling Castle, Grenadier, Golden Noble, and all other kinds which ripen in this and the next month; but winter and spring kinds on no account gather till the end of the month, otherwise they will shrivel and keep badly; besides, they are growing daily—the autumn rain is making them swell in a most remarkable way.

Once again we would urge the necessity of keeping the fruit-room dark and the temperature low, and plenty of air—not exactly a draught, because that will also tend to defeat the object in view, viz., keeping the fruit to its longest period. Great mischief is very often done in fruit-rooms in neglecting to remove decaying fruit; it has a very bad influence on fruit which is sound, and we believe hastens its maturity and encourages fungus or mould, which is most undesirable. Here we have adopted the plan of two fruit-rooms — one for the mid-season fruit and the other for the late kinds, which can hardly be too damp or too cold, provided the frost is kept out, and we believe this is a better plan, and fruit showing signs of ripening can be moved onwards, and a few degrees higher temperature in winter helps the flavour. Take care to see that the Nuts are stored away from rats and mice. This is perhaps the best month of all the year for root-pruning all kinds of trees and bushes which are barren and unfruitful, and making gross growths of unripened wood. Various plans are adopted; some prune one side of the tree one year, and the other the year following, but in either case there is but one way, and that is to consider first the size and age of the tree. If the tree is, say, a dozen years old, a trench ought to be dug all round the stem a yard off, and dig down and even into the subsoil, cutting off every root with a sharp spade; and if it is twice that age, twice the distance from the root may be allowed, and fill in the soil again, and the operation is completed. With young trees sometimes it is a good plan to take them up and replant them, but this requires great care and securely staking when done. In that case it would be best to defer till the last week of this month, when the foliage will be inclined to fall; but whether root-pruning or transplanting is adopted do not delay it till too late in the autumn, otherwise the warmth will have left the ground and the tree will not have time to make fresh roots before the winter sets in, which is most important. We would caution those who contemplate this sort of thing to be very cautious with Cherries; they are most impatient in having their roots too freely meddled with, but seeing that they generally bear pretty freely, that is the very best preventative against grossness of growth, and by far the best pruner either for branch or root, viz., a good crop of fruit. *J. Rust, Eridge Castle, Sussex.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 6	Sale of Bulbs, at Stevens' Rooms Sale of Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 7	Sale of Collection of Orchids, belonging to Oscar Lamarche, Esq., at Protheroe & Morris' Rooms. Harvest Festival at the Crystal Palace (five days).
WEDNESDAY,	Oct 8	Sale of Bulbs, at Stevens' Rooms. Clearance Sale of Nursery Stock, at Kilnick's Nursery, Brighton, by Protheroe & Morris (two days) International Potato Show, at the Crystal Palace (three days)
THURSDAY,	Oct. 9	Sale of Imported and Established Orchids, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms
FRIDAY,	Oct 10	Sale of Imported Orchids, at Protheroe & Morris' Rooms
SATURDAY,	Oct. 11	Sale of Bulbs, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms.

FORTUNE does not seem inclined to pour out her favours too freely upon those who without professional assistance try to cultivate the more common varieties of the Grape in comparatively COOL VINERIES; and yet the difficulties connected with Vine growing of that kind are neither numerous nor hard to overcome. The chief thing is to start fairly with a well made border, if the staple soil of the garden is not suitable for the Vine. From our knowledge of Vines growing in various parts of the southern and eastern parts of England it would appear that the Vine is not quite so particular as to the component parts of the soil as some authorities on this matter would have us believe. Much more important are thorough drainage and friability or porosity in the soil, an impervious bottom, so as to keep the roots within the reach of the sun's heat, liberal watering during the growing and maturing periods, and feeding with liquid manure in a strong form whilst active growth is taking place, which in Vines growing in cool vineries is during the months of June, July, and August. Then the sun has the greatest power, and is assisting to empty the Vine border of its moisture by evaporation, whilst the roots are taking great quantities for the formation of leaf, shoot, and bunch. We have known Vines in mountain vineyards that bear 10 lb. to 15 lb. of fruit per plant year by year, and rarely fail, owing to the comparative absence of late or spring frosts, to perfect their fruit; and yet these plants grow in many cases on brashy, shallow soils, and are usually manured only once in three years. There climate, great heat, and a long summer do the greater part of the perfecting process, but here, with our shorter summer, lesser heat, and accompanying deficiency of light, we must add forcing media in the shape of a greater abundance of manure, more water, and the concentrated heat of a glass roof.

Samples of Vine fruit and foliage frequently come under our notice which lead us to think that the omission of copious syringing of the foliage, and want, or insufficiency, of ventilation, are the causes of most of the ills that amateur's Vines most frequently suffer from. In many samples seen thrips and red-spider are rampant, and the foliage so attenuated, and so sucked out by these pests, that it has ceased to perform any useful purpose in the economy of the plant. Now, syringing and a moist atmosphere during all the growing period up to the colouring of the fruit, excepting during the blooming of the Vines, would keep these insects away or at any rate greatly mitigate their attacks, and especially if supplemented by sulphurous fumes obtained from open pans of flowers of sulphur mixed in water.

Where the Vine, perhaps, has the worst chance is when it is trained overhead in a greenhouse that has to be kept gay with summer flowers, for here the free use of the syringe on the Vine would mean damaged blooms and disfigurement of the foliage of the pot plants, so that it would appear as if these two antagonistic cultures could not be carried on at the same time in one structure. Wherever any other Grapes are grown than the hardier Chasselas or Sweetwater, Miller's Black or Burgundy, the house must be shut up early in the afternoon, so as to allow the Vine to benefit by the additional heat so obtained. As the Vine is also benefited by a temperature at least 20° lower than the highest heat obtained during the day it is essential that the top lights be let down, or be raised for the night, unless there is much wind at any time between 8 and 10 o'clock. This will preclude the growing of greenhouse plants, properly so called, in the same house; but the conditions would not be unsuitable to many warm-house plants and warm-house annuals. Of course the best results will be forthcoming when no plant growing is attempted, and when Black Hamburghs and a few other easily ripened varieties are grown, and where, after the Vines are started by sunheat alone, or only slightly aided at starting with fire-heat, they are allowed to grow on with the advantages solely obtainable by the aid of glass after June. Under such treatment the produce should be better than is frequently found to be the case with amateurs' Vines.

—— MR. BENTHAM.—Surely it would be most appropriate that some memorial of the deceased botanist should, subject to the consent of the authorities, be placed in the Royal Herbarium at Kew, to which he was such a benefactor and in connection with which his life-work was for very many years carried on. Official etiquette would probably preclude any steps being taken by the authorities at Kew in the matter; and, indeed, it is a subject that would more gracefully and appropriately be dealt with by outsiders. For our own parts we shall be happy to co-operate in any scheme to do honour to the memory of one to whom botany and horticulture are under such wide and deep obligations.

—— SCIENTIFIC PRINCIPLES OF AGRICULTURE.—Professor GILBERT'S inaugural lecture on this subject before the University of Oxford has been separately published by HENRY FROWDE, Amen Corner, E.C. As it is of great interest to horticulturists they will be glad to have a fuller account than we were enabled to give at the time the lecture was delivered.

—— COUNT FESTETIC.—We learn that Mr. H. E. MILNER has been entrusted with the laying-out of Count FESTETIC'S grounds in Hungary. The works consist of an English park on one side of the palace, and on the other side the ground is to be treated in the formal French manner (as at Versailles) with a complete system of waterworks, temples, and architectural adjuncts.

—— LORD PALMERSTON.—A correspondent sends us the following note:—"*Apropos* of Broadlands, of which you have a very interesting article in to-day's *Gardeners' Chronicle*, let me tell a little incident which will bring to mind the late owner, Lord PALMERSTON, perhaps as forcibly as any anecdote which has been told of him. When carrying out for him certain improvements in the Test Valley, having for their object the amelioration of the climate of Broadlands by drainage, I was walking with his Lordship in the gardens, and observed that I could well understand his partiality for the place with the river running so briskly at its margin, giving, as it did, a more cheerful character than could be obtained by any work of man. 'Yes,' he replied, 'you are quite right, it does; I have always liked cheerful places and cheerful people, and water in the landscape should be like the eye in the human countenance—moving and sparkling.' And this poetic simile was singularly appropriate, for the Test opposite Broadlands has a rapid flow due to a fall in the river of 8 feet to the mile."

—— THE HORTICULTURAL CLUB.—The members of the Horticultural Club, who, owing to the bankruptcy of the Messrs. PARKER, to whom the house in which they formerly had rooms belonged, have been obliged to remove, may be congratulated on having obtained most satisfactory accommodation at 1, Henrietta Street (Covent Garden Hotel), W.C.

—— "ENGLISH BOTANY."—The eighty-seventh number of the third edition of this standard work has just been issued by Messrs. GEORGE BELL & SONS. It contains descriptions and figures of the British Equiseta and Characeæ, the revision of the latter order, as well as the preparation of the plates, having been entrusted, in consequence of the ill-health of Dr. BOSWELL, to Mr. N. E. BROWN, who has executed his task with that thoroughness and conscientiousness which are characteristic of him.

—— ANTOINE'S "BROMELIACEÆ."—The third part of Herr F. ANTOINE'S magnificent publication, devoted to the illustration of the Bromeliaceæ, is before us, containing figures of *Vriesia Rodigasiana*, a Brazilian species with strap-shaped entire leaves and erect loosely branched panicles of yellow flowers. It was originally figured and described by Professor MORREN, in the *Illustration Horticole*, 1882, t. 467.

Vriesia speciosa.—A native of French Guiana, also known as Tillandsia splendens, has broad recurved strap-shaped, obtuse or pointed, channelled entire green leaves, channelled and marked with transverse bars of black. The inflorescence is a tall, erect, flat spike, consisting of overlapping scarlet bracts from the axils of which yellow flowers are produced.

Vriesia Barilleti is a species native of Ecuador, originally described by Professor MORREN, with comparatively few leaves in a tuft, long spreading, not recurved, strap-shaped obtuse leaves, with a long acumen. The flower-spike is stalked, flattened, elliptical, with two rows of crowded overlapping boat-shaped yellowish bracts, subtending flowers of the same colour.

Vriesia viminalis, a native of Costa Rica, has short, broad, entire, strap-shaped leaves, and a cylindric one-sided flower-spike raised on a very long slender stalk. Bracts crowded, oblong acute, green, subtending flowers of the same colour.

Vriesia gladiolifera, a species with short, very broad, oblong, channelled, entire leaves, broader at the base than at the rounded apex, which is provided with a short acumen. The flower-spike is raised on a long stalk, and is itself about 12 inches long, cylindric, rope-like, with two rows of broad boat-shaped bracts, and greenish flowers with rounded segments.

—— THE POWER OF RAIN.—Professor TAIT calculates that the amount of force requisite to convert 1 lb. of water from the sea or from moist earth into vapour is equal to the force exerted during one half-hour by a horse. This is given out again in the form of heat as it condenses, and the pound of water falling as rain would cover a square foot of ground to the depth of rather less than one-fifth of an inch. Thus, one-fifth of an inch of rain represents a horse-power for half an hour on every square foot, or, on a square mile, about a million horse-power for fourteen hours. A million horses would barely have standing room on a square mile.

—— "THE JOURNAL OF THE SCOTTISH METEOROLOGICAL SOCIETY FOR 1883," just issued, is full of information of the greatest value and interest. It contains a succinct account of the establishment of the observatory on Ben Nevis and the work already accomplished there, reports on the meteorological and biological work done in connection with the Scottish fisheries and marine stations. In addition to this there are elaborate records of regular weather details in all parts of Scotland, and even Iceland and the Faroe Islands.

—— "THE FRUIT MANUAL."—The publication of the fifth edition of this very useful work is announced.

—— PRUNUS TRILOBA.—The fruits of this beautiful flowering shrub are figured in a recent number of the *Revue Horticole*. They are very small, globose, and of a yellow colour, reddish next the sun. In the flower there are usually four or five ovaries visible, but all these become abortive except one.

—— HULL CHRYSANTHEMUM SOCIETY.—The above Society is strenuously endeavouring to place itself *en rapport* with the Chrysanthemum world, and, if we may judge from the list of money prizes offered in the various classes, commencing with £10 for the best forty-eight blooms, it will command a goodly number of exhibitors, and should enjoy a fair portion of well deserved success. The Chairman is Mr. GEORGE BOHN, son of H. G. BOHN, of Twickenham, one of the oldest Fellows of the Royal Horticultural Society.



Fig. 79.—Polypodium vulgare, var. trichomanoides. (see p. 435.)

—— FRUITS AND NO FRUITS.—M. CARRIÈRE describes in a recent number of the *Revue Horticole* some cases of hypertrophy of the cellular tissue in the branches of a Pear, such as we have frequently figured in these columns, and which are interesting as affording further illustrations of the fact, that what people call fruit is often not fruit in a botanical sense. Botanists reserve the term fruit for that which immediately contains the seed. The core of the Apple or Pear is the true fruit embedded in the overgrown flower-stalk. The latter often exists without the true fruit being formed. So in the Strawberry the true fruits are the pips embedded in a fleshy prolongation of the stalk.

—— COCKSCOMBS.—These once much grown, but of late years somewhat ridiculed plants, are again likely to come into favour as summer decorative objects for the greenhouse and the dwelling-room, the quaint form, beautiful colour, and enduring qualities, associated also as the plant is with old flowers that are now enjoying the sunshine of revival, should induce amateurs and others to recommence its culture. A beautiful bank of about forty large plants of a kind called Empress was exhibited by Messrs. CARTER & Co. at the last meeting at the Royal Horticultural Society's Gardens, and was much admired. These were prettily contrasted with a back row of Lilium lancifolium album and L. Krätzeri, which set off the crimson hues of the Cockscombs admirably. The plant is adapted very well for bedding in such positions as sub-tropical plants are found to do well in, and when planted in the middle of June, either in or out of the pots, are unusually effective if the summer prove not too wet. For large beds the taller and smaller combed varieties are best, but for small beds the best dwarf form is the most suitable.

—— PHILODENDRON SELLOUM.—A Brazilian scandent Aroid with aërial roots and large (1—2 feet) ovate hastate, pinnatifid dark shining green leaves; green spathes closed below, expanding above to reveal the cream-coloured under-surface and the thick spadix of the same colour. The figure in the *Botanical Magazine* (September, 1884), tab. 6773, was from a specimen flowered by Mr. W. H. TILLETT, of Sprowston Lodge, Norwich.

—— THE RAINFALL.—The following general results were brought by Mr. BUCHAN before the Scottish Meteorological Society, and based on observations made during twenty-one years, ending 1880, at upwards of 600 stations. The smallest rainfall, not exceeding 24 inches a year, is in the south-east corner of England, north of the Thames. In Scotland, the neighbourhood of Kelso and the low ground of East Lothian have a low rainfall, 24—26 inches. Half of Ireland has a rainfall not exceeding 40 inches, but in only two places under 30 inches; where the rainfall exceeds 40 inches the climate may be considered wet. Part of the Western Highlands, including Skye, has a rainfall of 80 inches, as has also part of the English Lake district, the Snowdon region and the centre of Dartmoor—elevated plateaus from which valleys descend in all directions, and high ridges barring the westerly winds of the Atlantic—are districts where the greatest rainfall occurs. A large rainfall exists in the nighbourhood of large firths like those of the Solway and Severn.

—— CEREUS PAUCISPINUS.—A Mexican species of low statute, with irregular cylindrical green stems grooved longitudinally, and broken up into blunt prominences, from the apex of which project tufts of radiating straight spines. The flowers measure about 2½ inches in diameter, and are of a dark red colour. The plant is a native of New Mexico, and flowered at Kew. It may be grown in a cold frame if care be taken to withhold water at all times except when growing. *Botanical Magazine*, t. 6774, Sept., 1884.

—— WOOLHOPE NATURALISTS' FIELD CLUB, 1884.—The last field day of the year will be held at Hereford on Thursday, October 16, 1884, for a foray among the funguses. There will be an exhibition of funguses in the Museum-room at the Free Library, and an evening meeting will be held there on Wednesday evening, October 15, at 8.30 P.M., to name and study them. The foray will be made on Dinmore Hill. Members and visitors will leave the Barrs Court Station with the 9.25 A.M. train, to reach Dinmore at 9.39 A.M., and will return from Dinmore with the 2.51 P.M. train. A meeting will be held in the Woolhope Club-room at the Free Library immediately after the return to Hereford, to elect the officers for the ensuing year and to transact the ordinary business of the Club. The dinner will take place at the "Green Dragon" Hotel at 4.30 P.M., when some edible funguses will be served, cooked from the Club recipes. An evening reception will be held at the house of THOS. CAM, Esq., St. Owen's Street, at 8 P.M., to which he kindly invites all who may be present at the meeting. After dinner the report of the deputation appointed on behalf of the Club to attend the Pomological Congress at Rouen will be read, also a paper termed "Woolhope Whittlings," by Dr. M. C. COOKE, M.A., &c. The following papers will also be read at one or other of the evening meetings:—

"Notes on the Edible Fungi of North Italy," by A. S. BICKNELL, Esq.

"On Colour Nomenclature in Fungi," by HENRY T. WHARTON, Esq., M.A., &c., Oxon.

"The British Species of Nidularia," by WM. PHILLIPS, F.L.S., &c.

"On the Spermogonia of the Uredines," by CHARLES B. PLOWRIGHT.

"Researches into the Oospores of some Fungi," by the Rev. JOHN E. VIZE, M.A.

"On Bunt" (Tilletia Caries), by CHARLES B. PLOWRIGHT.

"On Gigantic Fungi," by Dr. M. C. COOKE, M.A., &c.

"Hœsces Views on the Lamellæ of the Agaricini," by the Rev. JOHN E. VIZE, M.A.

"Some Recent Additions to our Mycological Flora," by WM. PHILLIPS, F.L.S.

And if time permits the subject of "Trinomialism in Zoology" will be introduced by HENRY T. WHARTON, Esq., M.A., Oxon, &c.

Gentlemen intending to be present are requested to send their names to the Secretary on or before Monday, October 13, that all proper provision may be made for their comfort, to THEOPHILUS LANE, Secretary, Broomy Hill, Hereford.

—— "HERBARIUM NORMALE AUSTRO-AFRICANUM."—Under this title Messrs. MACOWAN and BOLUS, of Cape Town, are issuing sets of dried specimens of South African plants, in bundles containing one hundred species each. The specimens are well selected, carefully dried, very ample, and generally well named, the names being in accordance with HARVEY and SONDER'S *Flora Capensis*, so ar as that goes. As the names will have the advantage of being checked at the Kew Herbarium, the few errors that occur in the naming will doubtless be corrected in future bundles. No better sets of Cape plants than these, judging from the set received at Kew, have yet been distributed, their only deficiency being that the colour of the flowers is not stated. The localities are given with great precision, and if the colours were added with as much care as is bestowed upon the localities, these sets would be perfect models of what distributed sets of dried plants ought to be.

—— IRIS TINGITANA.—A bulbous Iris, native of Morocco, with linear strap-shaped leaves, large pale lilac flowers, with a long flower-tube above the ovary; the sepals (falls) are whitish, marked with a yellow blotch, but no beard. *Botanical Magazine*, t. 6775, September, 1884.

—— PENTAPTERYGIUM SERPENS.—A Vaccinia-ceous shrub from the Eastern Himalaya, with a thick woody rootstock, pendulous hairy branches, with small ovate-lanceolate leathery leaves and stalked flowers, with short angular calyces and 5-angled scarlet flowers. The tuberous root-stock grows epiphytically among the mosses and Hepaticæ of the limbs of the forest trees. *Botanical Magazine*, t. 6777, September, 1884. Hort. Kew.

—— SOME HIGH-PRICED ORCHIDS.—Many of the fine plants in the DUNLOP collection of Orchids, alluded to last week as having been offered for sale on the 25th ult. at Mr. STEVENS' Rooms by Mr. KEMP, the gardener to the late T. D. CUNNINGHAM GRAHAM, Esq., fetched prices worthy of being notified in our columns, viz., Cœlogyne cristata, the Chatsworth var., with thirty growths, £5 10*s.*; Cypripedium grande, with two strong growths, 10 gs.; Dendrochilum filiforme, that had had ninety bloom spikes this year, 12 gs.; a Cattleya Trianæ Massangeana, six flower-spikes, 10 gs.; Cypripedium selligerum majus, 14½ gs.; Vanda suavis, about 6 feet high, with three strong growths and two small ones, 21 gs.; a fine Cypripedium Dominianum, 11 gs.; C. albo-purpureum, 10 gs.; C. euryandrum, 10 gs.; Lælia anceps Hillii, 8½ gs.; a splendid plant of Vanda Lowii, 16 gs.; V. suavis, VEITCH'S variety, a magnificent specimen, which had carried this year twenty-two flower-spikes, 30gs., and a Manchester variety of the same species, 17 gs.; Cattleya intermedia, with over 100 bulbs, 31 gs.; an Angræcum sesquipedale, fine young plant, brought 15 gs., and another, about 4 feet high, 18 gs.; Epidendrum prismatocarpum (VEITCH), a very fine variety, 15 gs.; a fine Cymbidium eburneum fetched £8 10*s.*; and a C. Lowianum, RUSSELL'S var., 11 gs.; and many other plants which want of space forbids us to mention brought high figures.

—— DICHOTRICHIUM TERNATUM.—In the construction of the flowers this plant closely simulates, and is related to, the Æschynanthus, but the general appearance is widely different. The large deep green fleshy leaves bear little resemblance to the smooth leathery foliage of Æschynanthus, and the curiously rooting stems cling to the surface of wood in a similar manner as Ivy. The deep red or crimson flowers are somewhat curved, and produced in umbellate cymes on long axillary peduncles. Like many other members of this order, the plant refuses to flower except after making a vigorous vegetative growth. If checked with cold draughts, or injured with tobacco-smoke, which they dislike, the visibly formed flowers drop. A fine specimen, exhibiting its natural character, may be seen in the Begonia-house at Kew, where it has lately flowered for the first time. It is comparatively a recent introduction, and cultivators would find it an invaluable subject for covering unsightly wooden partitions. A plate of it is in preparation for the *Botanical Magazine*.

—— MINERAL WATERS.—At one time held in great repute as medical agents, they fell into disrepute and neglect. Latterly, however, the tendency has been in an opposite direction, and this may account for the re-opening of certain chalybeate springs in the nursery of Messrs. KINMONT & KIDD, of Canterbury, which have been closed for many years. We believe the water is strongly impregnated with iron, and hence should be beneficial in all those cases where this powerful tonic and alterative is judged beneficial.

—— BEGONIAS AT THE STANSTEAD PARK NURSERIES.—The fine sunny days of autumn have allowed the flowers of the immense numbers of the tuberous Begonia grown here to continue to expand, but the cool nights tend to prevent the blooms from opening fully, and also bring on decay in the shoots when these are in the least degree bruised. The seedling forms which Messrs. LAING & Co. grow in beds in the open must number, at the lowest estimate, 100,000, and which are nearly all the produce of the latest fructifications of the finest flowers of 1883. Marked improvements from the florists' point of view can be seen in the brilliant clear and decided tints of crimson, scarlet, orange-scarlet—this last a great matter with the hybridisers here, fine canary-yellow and white, advance being also very marked in the approach toward an open circular and horizontally poised flower, so as fit it to take the place of scarlet Pelargoniums in some degree in flower-beds. So long as the Begonia remained the graceful pendulous flower Nature had formed it, there was a certain unsuitability about it for the above purpose. This has now in these hybrids been almost obliterated, and we have instead a bold upright-looking bloom, supported on a stout pedicel, and well above the foliage of the plant. Several of these newer hybrids have been shown at the various large metropolitan shows, always with some distinctions in the way of medals and certificates. There was an abundance of bloom on these plants in the open, which fairly put to shame our old friend the Pelargonium. The colours are so good, and admit of being used in masses of single colours, and when once obtained they are so easily dealt with during their winter rest, when the Pelargonium is a troublesome plant to keep in health, at the same time that much room is taken up with the stock, that it will be no wonder if the latter should have partially to retire from the first rank as a bedder in places where autumn gardening is the chief feature. The methods adopted at these nurseries in planting the Begonia have repeatedly been described in these columns, so that there will be no need to repeat them here, as no innovations have

been made in them, so well does the system answer. We noticed some pretty seedlings of Canary Bird so double as to remind us of a small turban Ranunculus. Whites are likewise making an advance in size and form, but the pink colour of unopened buds detracts from the purity of colour in the mass.

—— Prunus Pissardi. — The *Revue Horticole* publishes a coloured figure of the fruit of this purple-leaved Cherry. It is borne on solitary stalks, depressed, globose, an inch in diameter, reddish.

—— Anguloa Ruckerii sanguinea. — Out of an importation of Anguloas from a new district some very large-flowered and highly coloured forms of this rare plant are now blooming with Messrs. F. Sander & Co., of St. Albans. The flowers of some of them are even larger than those of A. Clowesii, and the habit of the plants is very vigorous. It is expected that some of the batch will turn out new species.

—— Lilium auratum.—At Ley's Wood, Groombridge, the seat of J. W. Temple, Esq. (Mr. Moorehouse, gardener), the Lilium auratums planted some few years ago by Mr. Moorehouse have been quite a feature in themselves this season. Planted in the borders among the shrubs they seem quite at home, flowering very freely, and growing to a height of 7 feet 6 inches, and measuring round the bottom of the stem 2¾ inches, with from twenty-eight to thirty-seven flowers to each bulb, the individual flowers measuring 12 and 13 inches across. What a pity this popular Lily is not oftener seen in shrubberies, as they only want the protection of a few ashes during a severe winter, and in many cases they never get that and do well.

—— Seeds of the Current Year.—It may be of interest to many of our readers to be made acquainted with the following reports on certain species and varieties of seeds, which have been sent us by Messrs. James Carter & Co.:—

Natural Grasses.—Generally satisfactory as to quantity, but after critical examination of many samples of Meadow Fescue, Tall Fescue, Sweet Vernal, Meadow Fox-tail, Fiorin, Cock's-foot, and Dog's-tail, there are but a very small percentage exhibiting satisfactory standards of purity, so that the most reliable qualities of the above must command high values. There will be an abundance of lower quality seed upon the market at all ranges of prices. The crop of Hard Fescue, Sheep's Fescue, Poa pratensis, &c., is excellent, and finest samples show very satisfactory analysis.

Rye-grasses.—English crops of Italian Rye-grass have been secured in fine condition, whilst reports from some quarters of the Continent speak of considerable damage by rain. We anticipate, however, a fair average general output at about last year's quotations. Perennial Rye-grass is an abundant crop and of excellent quality, and is offered at prices comparing favourably with those opening up the 1883-4 season.

Rape.—Is not an extensive acreage, and a brisk home demand for autumn sowing to make up the deficient crop of spring feed has tended to keep values very firm to this date.

Swede and Turnip.—Crops somewhat thin, but harvested in splendid condition—present values favourable to buyers.

Mustard.—A good average crop.

White Clover.—There is a fair average acreage of English white Clover seed, and it has been harvested generally in very fine condition. From Germany, the Netherlands, Hungary, France, and other Continental sources, reports are very satisfactory, the crop is said to be large, and the quality quite expected to be up to the average of previous seasons. Values now exhibit favourable comparison with those of 1883-4, but it is not improbable that higher prices may be reached when the actual produce of the year is correctly estimated.

Trefoil is a satisfactory crop both at home and abroad, and very moderate quotations are made at present for bright, clean and bold seed.

—— Styles of Architecture and their Relation to the Art of Landscape Gardening. —A course of six lectures on this subject will be given at the Crystal Palace by Mr. G. Richards Julian, A.R.I.B.A. The course will comprise a description of the characteristicse of the various styles of European architecture, and a short historical sketch of their rise and fall. The appropriate treatment of terraces, pavilions, bridges, and other architectural decorations of parks and gardens, will be considered in connection with each style. The lectures will be illustrated by diagrams, and references will be made to the reproductions and casts in the Architectural Courts of the Crystal Palace.

—— White Elephant Potato.—A correspondent, Mr. George Lambert, Oakwood, Chichester, adds his testimony to that of several others concerning the prodigious productiveness of this variety, he having harvested 246 lb. avoirdupoise from the eyes taken from 1 lb. of sets. One tuber weighed 2 lb. 3½ oz. This ought to prove an excellent variety to grow for pig feeding, or for starch-making and distilling purposes.

—— Rouen Apples Congress.—Dr. Bull, of Hereford, with other members of the Woolhope Club, started for this meeting on Monday last. We understand that Dr. Bull not only took a large supply of cider and perry in bottles for exhibition, but between 1400 and 1500 Apples and Pears.

—— Single Dahlias.—Two lots of these flowers have been sent us by "D. T. F." and Messrs. Cheal & Sons. Those from the first correspondent are good in colour, but they are rather coarse and large, owing to which they must droop, as the doubles do; this heaviness may be produced by using the biggest flowers for seed parents: it is a disadvantage and, we think, a retrogression. Messrs. Cheal & Sons' flowers were the reverse of those, the colours good, flowers only medium in size, and most of them very handsome—Formosa especially so.

—— Planera Richardi.—On the lower terrace of Holme Lacy, Hereford, there is a remarkably fine specimen of this Elm-like tree, at least 70 feet high. It is a most distinct forest tree.

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Sept. 29, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been unsettled, squally, and rainy in the west and north-west, but generally fair in the southern and eastern parts of Great Britain, though a few showers have been experienced from time to time. The temperature has been about its normal value in Ireland, but over England and Scotland it has been 1° or 2° above it. The highest of the maxima were registered in most places on the 28th, when the thermometer rose to 71° in the "Midland Counties," 72° in "Ireland, N.," and to between 64° and 69° in most other districts. In "Scotland, N.," however, 59° was the highest reading registered. The lowest of the minima were recorded generally on the 29th, and varied from 35° in "England, S.," and 37° in the "Midland Counties" and "Ireland, N.," to between 39° and 45° in most other parts of the kingdom. In the "Channel Islands" the thermometer did not fall below 52°. The rainfall has been more than the mean in the north and west of Scotland and in the north of Ireland, but less elsewhere. Bright sunshine has been less prevalent than it was last week in all except the Scotch districts, the percentages of possible duration varying from 18 in "England, S.W.," to 49 in "Scotland, E." Depressions observed:—During the whole of this period the barometer has been highest over France and Germany, and lowest to the westward and north-westward of our islands. Several depressions have travelled in a north-easterly direction outside our extreme western and northern coasts, and some subsidiary disturbances have passed over England. The most important depression was that shown off the north-west of Scotland on the 27th. It was of considerable depth, and caused the wind, which had previously only reached the force of a gale at our extreme western and northern stations, to increase to a moderate to strong gale from between south and west in all but the most south-eastern parts of the kingdom.

—— Gardening Appointments.—Mr. Charles Hewett, lately Foreman at Tortworth, has succeeded Mr. Greenshields (who is superannuated), as Head Gardener at Sarsden.—Mr. S. Prangnell, Gardener to Mrs. May, Laurel Grove, Chelmsford, has been appointed to succeed Mr. T. Simpson as Gardener to H. C. Wells, Esq., Broomfield Lodge, Broomfield, near Chelmsford.—Mr. C. H. Perkins, late Foreman at Leweston House, Sherborne, Dorset, as Head Gardener to C. Hambro, Esq., Milton Abbey, Blandford, Dorset.

POLYPODIUM VULGARE
V. TRICHOMANOIDES.

It may, I think, be safely said that of the many varieties of our native Polypody, none is so truly lovely as the above. It would indeed be a most interesting and instructive study if some one who has time at his disposal would give us a history of the numerous varieties which have appeared from time to time. The first which was found, I believe, was the Welsh form, Polypodium vulgare var. cambricum, since which time others have made their appearance amongst others may be noted the following:—P. v. cristatum: this is very distinct, being tasselled at the apices of the frond and pinnules; P. v. bifido-cristatum is an improvement on the preceding variety; P. v. omnilacerum, P. v. semilacerum, P. v. furcatum; P. v. Prestoni, a fine sub-variety of P. v. cambricum, P. v. ramosum, P. v. marginatum, P. v. elegantissimum, P. v. cornubiense Whytii, and P. v. Fowleri. The last named is a close rival with the one specially under notice, P. v. trichomanoides. It is, however, so far as I have noticed, more stunted in growth, the fronds are not so long nor so bushy, and they are more erect. The fronds of P. v. trichomanoides are slightly arching, attaining 12 inches or more in length; they are highly compound, and every pinnule is so wonderfully divided and lacerated that, instead of the usual flat surface, the frond is converted into a plumose mass of most delicate and charming appearance. Of its origin I know nothing, excepting that Messrs. Backhouse & Son many years ago bought it in the South of England. It was then reputed to be a break from Polypodium vulgare cornubiense Whytii. With regard to its culture, although the plant is perfectly hardy and will grow well in the open air, in shady moist positions, it will also bear a considerable amount of heat providing it is accompanied with a moist atmosphere; treated in this way it may be forced into rapid growth. The compost in which it appears to thrive the best is as follows: Of good fibrous peat take one half, break this into rough lumps; of best fibrous loam one-fourth, treat this in the same way as the peat, and then mix both together; from this extract the very fine, by using a ½-inch mesh sieve; then add one-fourth chopped sphagnum, white sand, and lumps of vegetable charcoal: mix the whole together. The pots should be half filled with clean drainage. In potting place the plant considerably above the top of the pot, and mound up to it with compost, making it very firm. When the plant is growing give abundance of moisture. All varieties of Polypodium vulgare are highly ornamental, and most useful subjects for shady nooks and corners of rockwork. The fronds, retaining as they do such a vivid green and freshness during the dullest months of the year, make them even welcome as decorative plants for ferneries, greenhouses, and conservatories. I have seen them grown to good effect beneath the ordinary plant-stage of a greenhouse, where they form a pleasant groundwork for the eye to rest upon, instead of the bare unsightly earth. *R. Potter.*

FLORAL EXHIBITIONS AT SOUTH KENSINGTON.

A suggestion has been made by more than one of the exhibitors of those collections of flowers which have proved so attractive from time to time during the summer, not only to the Fellows and visitors to the Royal Horticultural Society's meetings, but also to the vast numbers of visitors to the National Health Exhibition, that some tangible memento of the worth and beauty of these exhibits, and of their association with an Exhibition of so important a kind as is the "Healtheries," should be given to the otherwise non-recompensed exhibitors. Probably not a few readers will learn with surprise that some of our nursery firms have been during the summer making brilliant and really costly displays of flowers at South Kensington with no other reward than such as may result from what is perchance an advertisement, though an expensive one. One large grower, whose displays of hardy flowers were worthy of all praise and admiration, is reported to have expended £100 in maintaining these displays during the season; and I can but hope that a large increase of business may be his reward. In any case I understand these honorary exhibitors would like to have from the Health Committee some handsome form of certificate, framed and glazed, which might be by them preserved as

a worthy memento of their association with a most successful national exhibition. Having regard to the fact that these floral displays have given so much delight to the Exhibition visitors, I can hardly imagine that the committee will turn a deaf ear to this not very exacting suggestion. *A. D.*

PRINCIPLES OF HORTICULTURE AND AGRICULTURE.

YOUNG gardeners living in or near London have great advantages, as will be seen from the following prospectuses of lectures open to them in the evenings at very low fees. What the Royal Horticultural Society ought to do is thus taken up by otherh ands :—

"CITY OF LONDON COLLEGE, WHITE STREET, MOORFIELDS, E.C.—Professor Boulger, F.G.S., F.L.S., &c., will give a series of lectures on the practice and principles of horticulture, on Wednesdays, from 8 to 9 P.M. The lectures will comprise the consideration of the following subjects :—

"The dependence of plants upon soil—Natural and garden soils and manures—The dependence of plants upon climate—Heat, moisture, altitude and proximity to the sea in their effects upon plant distribution—The native countries of our more common cultivated plants—Artificial heat—Forcing.

"The dependence of horticulture upon vegetable physiology — Nutrition — Growth and re-production—Roots and root action—Watering—The functions of the stems and the formation and ripening of wood—The leaf—Its absorption and respiration—How to maintain it in health.

"Checks to growth—Pruning and ringing—Vegetative reproduction—Natural and artificial—Offsets—Bulbs—Runners — Suckers — Tubers and proliferous buds—Dividing the roots—Layers and cuttings—Grafting and budding—The mutual effects of stock and scion on each other.

"Flowers, their production and function—Double flowers— Fertilisation or 'setting seed,' and hybridisation or 'crossing'—Fruit, its production and ripening—Seed, its selection and germination—Annuals, biennials and perennials—Deciduous and evergreen trees.

"The special cultivation of many of our leading vegetables, flowers and fruits will be incidentally alluded to ; but may form the subject of a succeeding course of lectures.

"The lectures on vegetable morphology and physiology will be given on Wednesday, from 7 to 8 P.M., and are meant as a sequel to a course on botany and general biology. It is the advanced stage in subject xvii. of the Science and Art Department, and includes the botany for the London B.Sc. examination. It consists mainly in the life-histories of a succession of representative types of the vegetable kingdom, which will be treated in ascending order, viz. :—The morphology and physiology of Algæ—Fungi—Lichens—Characeæ—Liverworts and Mosses—Vascular cryptogams—Gymnosperms—Monocotyledons and dicotyledons — including the various types of floral and fruit structure—Adaptations for climbing and for fertilisation and the development of the parts of the flower—The pollen—Ovule—Embryo-sac—Albumen and embryo. The general principles of plant distribution—The composition of plants and their processes of nutrition."

"BIRKBECK LITERARY AND SCIENTIFIC INSTITUTION. —Lecture and laboratory courses in elementary and advanced botany and in general and vegetable biology will be given by David Houston, F.L.S., F.R.M.S. during the ensuing session. Instruction is given in the various subjects by means of lectures, occasional demonstrations, and systematic work in the laboratory. from October to May. The classes are in connection with the Science and Art Department, South Kensington, and are primarily intended to meet the requirements of the Department's syllabus, and to prepare candidates for the Department's examination in May, 1885.

"Lectures and Laboratory Practice in the Principles of Agriculture will also be given during the ensuing session at the Institution by David Houston, F.L.S.

"The class instruction comprises a course of about thirty lectures, mainly upon the elementary facts of physical science in their relation to agriculture ; together with such other technical matters of cultural importance as are set forth in the undergiven syllabus. These lectures will be delivered every Friday evening from 9 to 10, commencing on Friday, October 3, at 9 o'clock.

"The laboratory instruction comprises a series of twelve demonstrations in rudimentary chemical technology as applied to soils, manures, and feeding stuffs, and in experimental physiology, so far as it concerns the function of nutrition in animals and plants. The work will be conducted in the chemical laboratory every alternate Thursday from 7 to 9. A series of demonstrations will also be given of a more advanced nature, comprising a course of instructions in agricultural chemical analysis, under the charge of George Challoner, F.C.S., Lecturer on Inorganic Chemistry to the Institution, and intended for students who have already acquired a knowledge of chemistry.

"*Short Syllabus of Lectures.—How Plants Live and Grow.*—Germination—Dependence of green plants for their sustenance upon materials in air and soil—Relation of structure to function in agricultural plants—Sensitiveness of vegetable organisms to external influences—Reproduction and development—Struggle for life in field and meadow land—Decay and death—Origin and formation of soils—Fertility and barrenness—Plant food constituents—Exhaustion—Means to effect restoration of fertility—Importance of drainage, and nature of losses due to drainage—Improvements of soil by mixing, liming, and ordinary tillage operations.

Manures.—Farmyard manure considered as a typical plant food—Artificial and special manures, such as guano, nitrates, phosphates, lime, potash salts, &c.—Modes of application.

"*Cropping.* — Grasses, their universal distribution, structure, mode of life, and management—Permanent pastures—Haymaking.

"*Ensilage.*

"Distinctive characters of grain, root, and forage crops — Rotation of crops ; theory and examples of practice—Hops—Fruit trees : selection and management—Plants grown for sake of fibre—Timber trees and underwood.

"*Diseases of Plants.*

"*How Animals Live and Grow.*—Dependence of animals upon materials elaborated by green plants — Embryology and development—Influence of food upon development — Relation of structure to function in domesticated animals.

"Composition of the animal body—The processes of nutrition—The constituents of foods, and their respective duties—Digestibility of foods—Comparative digestive powers in the various classes of domesticated animals—Comparative nutritive values of different kinds of food—Relation of food to animal requirements, such as ordinary growth, or the production of milk or wool —Production and general management of milk—Butter and cheese-making—General influence of climate, housing, nature of food, and quality of water upon health—Symptoms of age—Relation of food to manure and the animal producing it—Permanent fertility of natural Soils dependent upon waste materials and products of decay."

WOOLTON WOOD, NEAR LIVERPOOL.

THE appearance of the handsome lodge, the even carriage drive, with its well kept grass borders planted with rare shrubs and gay flowers, and all the other evidences of skilful gardening at the entrance of this fine establishment, belonging to Holbrook Gaskell, Esq., give the visitor little idea of the varied beauties soon to be revealed beyond. He is therefore pleasantly surprised when he finds that soon the modern garden terminates and the road lies through a broad expanse of natural woodland as quiet and peaceful-looking as though it were many miles away from any habitation. Nothing has been done to destroy the beauty of the scene which, by reason of its undulating surface, must have been always beautiful, but glades have been opened up, rocky dells planted with Ferns and strong-growing perennials formed, and informal clumps of Rhododendrons, planted in such a manner as to aid the natural carpet of Moss, Bracken, and Heather which grows beneath the aged trees, in forming a scene of sylvan beauty. Tradition has it that the trees here, which are principally Beeches, were planted in the beginning of the present century by the French prisoners, who occupied a convalescent camp in the neighbourhood, the work being ordered to give them recreation and employment. They must have found it no easy task, for the greater part of the surface is hard, brown sandstone, with so little soil amongst it that many of the old trees have had a struggle for life in their younger days, as their fantastic shapes and the quaint appearance of many of their great roots which run along the surface bear evidence. In some cases the roots of the trees have been unable to branch near the trunks, and in many instances only two or three main roots appear to have been sent out, and these are now each half as thick as the trunk, and run considerable distances over the stones, not sending out branches until they come to better soil to feed upon. Mr. Gaskell has utilised the stone by quarrying it for making the Fern rockery under glass and the many alpine rockeries, and cleverly turned the quarries into delightful retreats by planting them with Ferns, herbaceous perennials, Rhododendrons, &c., and forming pretty waterfalls and basins in them.

Continuing through the rising ground the evidence of the gardener's art again makes itself visible in the shrubberies which lead up to the handsome Ivy-covered mansion which stands on high ground and enjoys a fine view of the country for many miles, the broad stretch of the Mersey, with a part of Cheshire beyond it, and further still the hills beyond the River Dee.

Passing through the flower garden and through another part of the wood the large structure which is arranged as a fernery is reached ; here are many fine specimens of Tree Ferns planted, such as Cyathea Smithii, C. dealbata, Dicksonia squarrosa, D. antarctica, the very rare Dicksonia chrysotricha, &c., together with Gleichenias and other handsome Ferns which, being planted out, have gracefully arranged their frondage around the fountain, and beside the basin and waterfall. In convenient nooks, too, some good specimens of rare filmy Ferns are seen, one great mass of Trichomanes reniforme seeming to be particularly thriving and happy in its sheltered nook, and Asparagus plumosus is so strong that it runs up almost to the ridge. In the rock steps are arranged which give access to a rocky walk above and commands not only an enchanting view among the tree Ferns, but also a very extensive one of the country around. From the roof in this cool place, Mr Davies, the gardener, suspended his Oncidium Marshallianum, O. Forbesii, O. crispum, O. varicosum, &c., and they thrive there and bloom most profusely without in the least risking the safety of the plants which are always plump and increasing in size, in some cases in a remarkable degree, the inch-high bulbs of last year having sent out very large and stout growths. Grown in the cold they are but little trouble, as the white scale never attacks them there.

Outside the conservatory and in some other salient points very pretty rockeries have been formed during the last year and planted with those beautiful alpines which form such lovely objects when they get well established. Gentians, Androsaces, Campanulas, delicate Primulas, Linarias and other small things which act as indicators in the matter of the success of the general collection are all in a thriving condition ; and no doubt in a year's time the new rockeries, and the rock-sheltered rare shrubs will form an exceedingly pretty picture. Beside the walk leading down to the glasshouses is Mrs. Gaskell's herbaceous plant garden, a broad border planted with all those delightful old-fashioned things which seem dear to every one. No attempt at arrangement is made, and but little trouble is taken except to keep the weeds off ; the plants, therefore, grow and intertwine in a very pleasing manner, each one seems to regard its neighbour's comfort while doing the very best for itself ; and thus the tall golden-headed perennial Sunflowers, the starry white Ox-eye Daisies, and the blue Michalmas Daisies rear themselves aloft and form protection for the species of the Pentstemon, Gentians, and other smaller things beneath them. Mrs. Gaskell's garden is one of the most interesting spots at Woolton Wood at all seasons, and it gives more showy flowers throughout the year than any other part of the garden —the Lilies, Sunflowers, Pinks, Day Lilies, Harebells, Wallflowers, Larkspurs, Hollyhocks, Clematis, Irises, and such-like things each in its turn giving its display and mingling with each other in such a manner that the garden is kept showy for nine months in the year, and interesting for the rest—at present it is a pretty sight.

The kitchen garden and hothouses now come in view, for general gardening is well looked after here, and even this trying season a good crop of Peaches, a fair one of Pears and Apples, and a good sprinkling of all other fruit has been secured. Under glass, too, the Melons and Cucumbers have done well, and the long range of vineries still have two of them in bearing, and hardly begun yet to use them. The large structure in which the Camellias and Oranges are planted also looks as well as ever, the Lapageria rosea superba (a very fine variety), L. alba and other climbers giving a great display of bloom, and the two arches covered with Lonicera sempervirens in full flower are objects to remember.

ORCHIDS.—The Orchid-houses come next, and in them a very fine and rare collection which Mr. Gaskell has been carefully forming for years is contained. The plants have done well under Mr. Davies' management,

and a great deal of flower is always obtained from them, for Orchids are not grown for plants only at Woolton Wood, but for bloom, and the plants are required to do their best in that direction and to carry their flowers as a rule until they fade. Some of them are grown mixed with fine-foliaged plants, and at present a particularly happy combination of Orchids, Anthuriums, Nepenthes, Eucharis, &c., is to be found in the large span-roofed warm-house, the Eucharis amazonica and the Anthurium Andreanum flowers mingling well with the Orchid blooms and those of the Allamandas and Dipladenias on the roof, the specimen Ferns and foliaged plants also adding to the effect. In this house the varieties of Cœlogyne cristata grow luxuriantly, and so do the Phaius, Sobralias, Dendrobes, and evergreen Calanthes, one fine specimen of C. veratrifolia having borne eighteen tall flower-spikes. Among the Nepenthes, too, a lesson is to be learnt from the broad thrifty plant of N. Veitchii (lanata), which is considered so difficult to grow, but which at Woolton has overspread its pan. Mr. Davies considers that the reason so many fail with it is that they grow it in suspended baskets, and that it should be grown in a pan and placed in a rather shady spot. Calanthe Veitchii is also marvellously fine here, the bulbs being 1 foot to 1 foot 6 inches in height, and enough of them is grown to fill a moderate-sized house when in bloom.

The intermediate-house, span range of three compartments, has in the first a fine lot of Lælias, among them being a grand specimen of the rare L. autumnalis intermedia, many strongly flowering L. autumnalis atrorubens (one with thirteen flowers on a spike), and the numerous forms of L. anceps, including the white forms, Dawsoni, Hilli, Veitchii, and a great mass of that distinct-looking new white type introduced by Sander, of St. Albans. The Barkerias, too, are thriving, and they and the Lælias are sending up plenty of spikes. The second division is devoted principally to the Chimæras section of Masdevallia, and resting Trichopilias, the unique Masdevallia Gaskelliana being laden with its pretty flowers and buds. The plants of Odontoglossum vexillarium, too, are very robust, notwithstanding their having flowered heavily, and the very hot season. The third division shows plenty of bloom on some fine plants of Pilumna fragrans, P. nobilis, Odontoglossum grande, O. Alexandræ, O. Pescatorei, O. Uro-Skinneri, and a quantity of very strong plants of Oncidium varicosum, some of them bearing flower-spikes with twelve or thirteen branches. On entering the large span-house devoted to Saccolabiums, Aërides, &c., the eye is attracted to a fine plant of Vanda Sanderiana, with two tall spikes of its large and delicate flowers. This is one of the most wonderful of Orchids when seen in any position, but its delicate colours show to much greater advantage when seen against a background of foliage, unless, indeed, the bright sunlight can be got behind it, and then its crystalline appearance is marvellous. Oncidium Lanceanum is growing and flowering well, the flowers showing great variety in shape and colouring, the labellums, some of them, having the narrow part very much attenuated, and others having it broadened, with violet wings. A great show of Saccolabiums, Aërides, &c., is promised in this house, judging from the fine specimens seen, many of which are rare.

We noticed Aërides falcatum Leoniæ, A. Schröderii, A. Rohaneanum, A. Houllettii, A. Veitchianum, A. Emericii; and among the sturdy specimens of Phalænopsis, P. speciosa, P. Schröderii, and P. Stuartiana, and on one side of the house a rudely strong batch of large plants of that sweet Odontoglossum Roezlii. The Cattleya-house has Vandas down the centre, fine healthy plants; tricolors of all sorts, suavis, Dalkeith, Patersoni, planilabris, Dodgsoni, and all other good ones obtainable; and so well do they thrive that Mr. Davis has succeeded in rooting a 3 feet high rootless cutting of a a rare kind in about six weeks. The attempt was forced on him by the piece being forwarded in the condition described, or the venture would not have been advisable. Woolton Wood is rich in Cattleyas, and many of the specimens are unique, such as the C. Whitei and some of the varieties of C. Trianæ which are peculiar to the place, and their Cattleyas are very stout and thriving at all times—so are the many fine masses of Lælia purpurata and L. elegans, which are grown with them. The end stage exhibits a rich lot in bloom, made up of some large masses of Saccolabium guttatum (one with fourteen flower-spikes), a quantity of that lovely white and yellow Dendrobium formosum giganteum with eight or ten of its huge flowers on a spike, Cattleya Gaskelliana, C. exoniensis, C. bicolor, and other pretty things making a very handsome display. The Odontoglossums give no trouble at Woolton Wood, and the favourites, O. Alexandræ and O. Pescatorei, are in great variety mingled with O. polyxanthum, O. Edithii, O. facetum, O. Chestertoni, O. Horsmani, O. Ruckerianum, O. mulus, O. Wilckeanum, and the specimen of the singular O. histrionicum Bellum, and all are doing well; but it is in the last house we visited that we find the great triumph of Mr. Gaskell over the peculiarities of Masdevallia cultivation. The great specimens of M. Harryana varieties, M. Veitchii, M. Davisii (one an immense flowered form) M. macrura, and all the other good Masdevallias being up to the very highest standard of perfection, they being fleshy, green, and unspotted, and of great flowering capacity. Everything is done well at Woolton Wood, but the cold-house Orchids and the Cattleyas are the best. *James O'Brien.*

Home Correspondence.

Frames for Tree Pictures.—In the Japanese section of the Forestry Exhibition is a collection of "Paintings of useful Trees painted on the same Wood" in frames which appear to be also formed of the same wood, judging from the curious frame surrounding the picture of Chamærops excelsa. The enclosed sketch (fig. 80) gives an idea of these frames, which though ingenious, are not pretty. The four

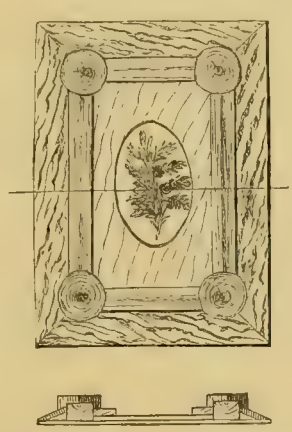


Fig 80.—ornamental panel of various woods.

rounded corners are formed of transverse sections of small stems, the sides are formed of the bark, the branch is painted on a longitudinal section of wood. But the same idea might be carried still further, so as to combine some degree of beauty with specimens of the bark, and three different sections of wood. In this way a picture of any branch or tree might be so framed as to give specimens of the tangential section in the mount immediately surrounding it, of transverse sections, with radial sections connecting them, and with a slightly bevelled border of the bark surrounding all. A sketch of this plan is enclosed. Japanese frames of bark (or rather of wood about 1 inch thick with the bark left on), 2 or 3 inches wide, are quaint and effective. *C. M. Owen.*

Opuntia ficus indica, Mill.—Last month I had occasion to observe on a plant of Opuntia ficus indica, Mill., which I cultivate in my small garden at Castello (near Florence), a few examples of monstrous fruit. Mr. Ernst published on November 23, 1882, in *Nature* (vol. xxvii., p. 77), a similar case, which he says he observed for the first time at Caracas (South America). In that article, which the author illustrated with an engraving, he says:—"It is evidently an instance of non-development of the peduncle, a special case of the suppression of axile organs (Masters' *Teratology*, p. 393), but I think it throws also some light on the nature of what is generally taken to be the pericarp of the Opuntia fruit, which, after all, seems to be a slightly modified branch, bearing the ovary of the flower in a cavity on its upper end." In the latter part of this article I quite agree with Mr. Ernst; the teratological case offered us by the Opuntia ficus indica evidently proves that the inferior ovary is a true modification of the branch, which is curved in its upper part. As regards the development of the teratological case I am not of Mr. Ernst's opinion. He sees an evident atrophy of the peduncle, a suppression of the axile organ; I, on the contrary, believe it to be a case of unusual development of the basilar part of the fruit, or of the peduncle, as Mr. Ernst calls it; but here also I may remark that in the fruit of the Opuntia ficus indica we have no peduncle, and that from the point of its insertion on the branch to the very apex of the fruit there is no difference. It is an oval uniform body, in which I could not trace any difference between the peduncle and the fruit. Among the various teratological cases which I myself have observed, I have found some of very different dimensions; some much smaller than the one cited by Mr. Ernst, and in which the lower part is of a greenish colour, was elongated (5 per cent.), and the top widened itself to form the ovary, which was of the usual shape. In this case Mr. Ernst might rightly have called it a stalked fruit, as from its shape and colour the basilar part is well defined. This sample is a true parallel to that which was described in *Nature* (*l.c.*). Mr. Ernst says that no one had previously observed this teratological case in the plantations of Opuntia, at Caracas, and that he has not been able to find any references to it in his books. Gasparrini, in his observations "delle gemme del frutto del l'Opuntia" (Royal Academy of Science of Naples, 1851, vol. vi., p. 8), had already recorded similar cases. He says, "that some of the vegetative branches when they get to a certain size become floriferous on ceasing their growth and producing the flower in their upper part, which produces the fruit plunged in the branch, thus forming a fruit which is yellow when it has reached maturity. The seeds are perfectly ripe. Such branches vary greatly in shape and size, but are always smaller than the vegetative." With this explanation also I do not quite agree. Mr. Gasparrini's assertion, that the vegetative branches having reached a certain size then stop growing and produce flowers, would involve the assumption that these branches up to a certain stage of development, are organised in the same way as the true vegetative ones; while on the contrary, even when quite young we see them furnished with rudiments of petals as all floriferous branches are. From my observations I come to the following conclusions. It is evident that the fruit of Opuntia is in every case a transformation of the branch. In the above described teratological cases the branch from the first develope in the same way as normal floriferous ones, except that its basal part increased much more than in the normal ones, and it is natural if that part of the fruit looks like vegetative branches. Such teratological cases are not rare in Italy. In the collection of the Royal Botanical Museum in Florence there is a normal sample of Opuntia amylacea similar to that described which was collected by Mr. Seguenza in the year 1868, near Messina. This year on my plant of Opuntia ficus indica I have collected six samples, among which one was identical to that described by Mr. Ernst, some were less developed, some already ripe, and others not yet completely developed. The plant that produced these samples was cultivated in the open air for four years and is not sheltered by any wall. In the winter during the night it is covered by a matting. It measures 14 metres in circumference and has 360 joints, it produced this year about 130 to 150 fruits which ripened, but which are inferior to the Sicily ones. *Ugolino Mardelli, Florence, July*, 1884.

American Blackberries.—We have great pleasure in sending you by parcel post a few bunches of the American cut-leaved Blackberry. They are nearly over now, and are not nearly so fine as we have had them. We have grown several of the American varieties here, but have found none to equal this one. Some of them, the Mammoth, for instance, produce larger fruit, but not nearly so abundantly. We have not grown the Lowton or the "Rochelle," as the French call it; but we believe it to be quite distinct from the cut-leaved in foliage. The Blackberry undoubtedly thrives best in a rich soil, and our experience is that it fruits best in the shade. We have a plant (from which we are sending the berries) growing at the north side of a close wooden 6 feet fence, where it has fruited profusely for several years. It has this season produced shoots over 20 feet in length. We consider it well worthy of a place in every garden. *J. C. & Sons.*

Helianthus doronicoides.—In the notice of Asa Gray's *Flora of North America*, which appears on p. 340 of the *Gardeners' Chronicle*, it is stated that H. tuberosus is a synonym of H. doronicoides. I do not question the statement, but without further explanation it may cause fresh confusion. The fact is that the cross-naming which has arisen amongst the perennial Sunflowers makes it hardly possible for

botanists to know what plant is intended by any name unless the authority for the name is also given. Dr. Asa Gray himself is not faultless in the matter. In his *Manual of the Botany of the Northern United States* (1876, fifth edition), p. 258, H. tuberosus is described as a variety of H. doronicoides, Lam., and the plant there described as H. doronicoides is one which goes by the name at Kew, and is a very coarse plant, with very large leaves and a running root, flowering very late, which I have rejected as unfit for a flower garden. On the other hand, we find that H. doronicoides, Lam., described on p. 279 of Asa Gray's *Synoptical Flora of North America*, is quite a different plant, and it is there stated that it is not the H. doronicoides of Gray's *Manual;* and it is also stated under H. tuberosus that the synonymous doronicoides is that of Gray's *Manual*, but not that of Lamarck. The H. doronicoides of Lamarck, to which Asa Gray in this, his most recent work, has given his sanction as the rightful claimant to the name, is in fact a very elegant and ornamental garden plant, quite distinct from any form of H. tuberosus. I have grown it for some years, and distributed it largely as doronicoides, but finding that it did not answer to the Kew specimens, I questioned the name amongst my friends, but it seems without sufficient reason. It is one of the earliest of the genus to flower, and flowers very freely, and ripens seed in abundance. It ought to be a commoner plant in herbaceous borders than it is. According to Asa Gray it is the same plant as is figured in the *Botanical Magazine*, tab. 2778, under the name of H. pubescens, though that plant is distinct from the H. pubescens of Wahlenberg, which Asa Gray names H. mollis. This, however, is only one of many instances of the cross-naming which makes the Sunflowers so difficult to identify. *C. Wolley Dod, Edge Hall, Malpas, Sept.* 18.

Helianthus multiflorus. — "J. S." (p. 238) does well to draw the attention of your readers to this invaluable plant, for, as he truly remarks, "from now to far on into the autumn it becomes smothered with blossoms." Here it is in grand style at present, a plant 4 feet in height, bearing over a hundred flowers. It seems to revel in full sunshine, more especially where the roots are well supplied with water. *A. D. W.*

Abies lasiocarpa.—This is a species I have always taken a great interest in, not only from its intrinsic beauty, but from the varied forms under which it is found. Though I formerly thought A. concolor was one of these forms, I now incline to the opinion that it is a distinct species, chiefly from the circumstance that the leaves are distributed all round the branchlets, whereas in A. Lowii they are always flat and two-rowed. I enclose twigs of A. concolor, and also two or three of A. Lowii or Parsonsi, which latter show a remarkable diversity in foliage and colour. *W. F., Isle of Man.*

Crute's Patent Concave Flower-Pot.—Having permitted your correspondents, Mr. J. Matthews, "Florist" and "A. D.," to criticise my flower-pot at some considerable length in your last week's issue, I trust you will generously afford me a little space to reply to them—especially as in an editorial note on the correspondence you (evidently under some misapprehension) endorse their views by declaring, from the woodcut of the "Sutton" flower-pot then before you, that you considered the two "to be nearly, if not quite, identical." Without going into all the observations and assertions of your correspondents, it will be sufficient if I say that the gist of their arguments consists in the assertion that a *concave* pot, called the "Sutton," was made a few years ago at Reading. This "Sutton," pot is before me, and I can only say that beyond the fact that the "Sutton" has a high conical-shaped bottom, and mine a low concave one, there is no more similarity between them than between a coffee pot and a colander. The chief points I had in view when designing my flower-pot were perfect drainage and ventilation, and I am told by impartial judges that I have succeeded. The designer of the "Sutton" pot aimed at perfecting exactly the opposite principles, as he clearly proved by calling his pot a *reservoir* pot. In my humble opinion he succeeded in carrying out his ideas, for, the cone not being perforated, with the exception of the centre hole, an inch or two of water stood at the bottom of the pot, injuring the roots of the plant, and the only drainage possible was by the slow process of percolation, which, knowing the porous nature of the Reading clay, he thought would be sufficient. It was quickly discovered that such was not the case, especially after the pot had been some time in use. The external and internal channels which I introduced are in themselves a sufficient improvement to stamp my pot as totally different in structure, and entirely different in the objects which it was designed to carry out. I contend therefore that my pot is quite distinct, and the fact that one or two others have been constructed having a slight similarity in one particular feature only, in no way interferes with my patent. Before writing this reply, I sent my representative to Reading, who obtained a "Sutton" pot from the makers, Messrs. Wheeler Bros., and who also saw the horticultural manager to Messrs. Sutton—the original designer of the "Sutton" pot, who courteously gave him every information about it, and who admitted that the "Sutton" pot,as patented without holes in the cone, and without channels, in no way interferes with my right to the patent taken out by me. *James Crute, Langton Lodge, Honor Oak, Sept.* 30.

Piper porphyrophyllum.—It is very remarkable that such a handsome plant as this is should have remained in our gardens for so long a time without having been correctly determined as to its genus before now, since it is none other than the beautiful stove climber which Lindley described as Cissus (?) porphyrophyllus in the *Proceedings of the Horticultural Society of London*, vol. i., p. 225, about a quarter of a century ago, and which has been grown under that name here and on the Continent until this day. The plant is beautifully figured in the *Flore des Serres*, t. 1491, and a woodcut of it appeared in the *Revue Horticole*, 1883, p. 560, f. 110, in both places as Cissus porphyrophyllus. It was introduced by Mr. Lobb from the East Indies, the locality not being given; it is, however, identical with No. 6643 E of Wallich's *Catalogue*, from Penang, which has been distributed under the erroneous name of Piper nigrum, and also with No. 4429, Griffith (Kew distribution), from Malacca, so that the Malay Peninsula is probably the native habitat of this species. For the benefit of those who do not know this handsome foliage plant it may be stated that it is a climber, with cordate-orbicular shortly cuspidate leaves, 4—6 inches inches long, 3½—5 inches broad, rich deep bronzy-green above, beautifully marked with numerous small pink spots, which are thickly clustered along the course of the nerves, and a few are scattered between them; the under-surface is dull purple. *N. E. Brown.*

New Vegetables.—Under this heading Mr. J. Perkins (p. 308) mentions Lettuce Continuity from Daniels Brothers. Allow me to state I have grown the same this season for trial for the first time. Sown here on a dry, south border on March 11 it withstood all the hot, dry weather when the thermometer was often 110° sun-heat for several days. It has been in use at intervals throughout the summer, and some plants are growing still (September 22) from the same sowing, and will be coming in for use for some time longer; these, after ceasing to grow for a time, commenced again after rain. I have never met with any other Lettuce to stand like this, and think it will be useful to stand the winter for spring use. *W. Divers, Wierton.*

Seedling Potatos.—There is certainly no more interesting, and probably no more useful, work done at the Royal Horticutural Gardens, Chiswick, than is seen in the annual trials of new or seedling kinds of Potatos. This year the entire number of kinds grown for the special attention of the Fruit Committee and the Seedling Committee of the International Potato Show, reached some 160; but whilst some were apparently duplicates of older kinds, very many were of moderate value, especially when compared with the distinctive and very superior kinds which met with honours. No doubt many of these seedlings are mere chance ones; in fact, the apparent similarity seen in a number from some one raiser shows that they are not the product of any well considered cross. It seems rather unfair that some raisers should also be so incapable of selecting for themselves the best kinds, that they send a score perhaps of which a couple or so only are meritorious. Others show more appreciation for what is required of them by sending only their selected sorts, and under name. The practice of sending a big lot simply as numbered seedlings is a nuisance, and not only with Potatos but with all other things should be rigidly checked. Those only who have been privileged to lift and report upon their Potatos can tell how absolutely needful it is that a very high standard should be set up—a standard indeed that must rise from year to year. Not only are all the best kinds as lifted appraised for their cropping and general excellencies, but all of sufficient merit are carefully cooked, and thus made to undergo a stringent test. The result of the trial by the International Potato Committee will not be published until the annual show next month; but the awards of the Fruit Committee have been made known, and, with the exception of Notts Victor, which hardly differs from Beauty of Hebron, seem very satisfactory. *A. D.*

Tuberous Begonias for Bedding.—In justice to this beautiful family of blooming plants so useful for the greenhouse or bedding, I would reply to W. J. Murphy's article in the *Gardeners' Chronicle* for September 20, by saying until he has tried a more extensive list of varieties than those enumerated, it is not fair to say that such poor varieties as B. Sedeni, Vesuvius, and Paul Masurel, are preferable to newer and improved varieties. Has he tried Graham Bell, J. W. Ferrand, J. Backhouse, Admiration, Sir H. Stanhope, Stanstead Rival, or A. Lequin? All these were this year sufficient to satisfy the most fastidious—I might add a very much longer list. *Fairplay.* [We should be very pleased to have the opinions of other cultivators in Great Britain as to the behaviour of this beautiful genus in all kinds of positions. For our own part, we can speak most favourably of some of Messrs. Laing's seedlings, the colour, size of flower, and free-flowering quality being even now remarkable. ED.]

Apples.—There is probably no land in the county of Middlesex which can more fitly replace to the market garden interest the filched deep loam of Fulham, than is found in the districts which extend from the Bath Road at Hammersmith to West Drayton. Specially fertile is the soil about Sipson, which lies midway between these places, and for some time has the bulk of it been utilised by enterprising market growers, so that it presents both in its fruit trees and bushes, and in its vegetable produce, evidences of high-class culture, such as may well compare with market produce in any portion of the metropolitan district. That this district lies some 16 miles from Covent Garden Market shows how widespread around the metropolis are the market gardens which assist to feed its people. Here in this locality but a few days since might have been seen on some fine breadths of young trees, probably ten years planted, what must be called for the season truly fine crops of Manx Codlin and Cox's Orange Pippins—the fruit of the former large and high-coloured—studding the trees almost like balls of gold. Why just here and there almost only such crops should be found it is difficult to show, but the near neighbourhood of tall Elm trees might have something to do with the phenomenon. Not only is cultivation in this district of the best, but throughout there is evidence of prosperity and comfort that is pleasant to look upon. *B. D.*

Zonal Pelargoniums.—The present is a good time to cut down these plants, and then when they have made half an inch of new growth they may be shaken out of the exhausted soil and disrooted. Disrooting is a real advantage to cut down plants, first, because the young roots that issue from the old roots are endowed with more vigour than the old fibres; and secondly, because by reducing the mass of roots more nutriment can be stowed away in the pot for the use of the plant than could be the case, unless pots of an unwieldy size were used and in which the plants would not make such compact growth, nor flower so well. After being potted the plant should be placed in a frame or pit and be kept close for a week and slightly shaded when found necessary until new roots are formed, when more air and light may be gradually allowed. *B.*

Schizophyllum commune (Fr.).—To the localities in Britain in which this rare fungus has been found I would add Mattishall in Norfolk, where I found it in 1879, in a Cucumber-house. *J. M. Du Port.*

Cabbages.—One of the instructing sights at the Fruit Show at South Kensington last week was to my idea the grand display of Cabbage—about forty kinds—put together by Messrs. Carter & Co., of London. Gardeners from the country could there compare some of their favourite kinds they had been growing for many years with others of quite recent introduction. There were several of Carter's selected varieties, as Beef-heart, Drumhead, Heartwell Early, White Prize-taker, Feldkraut—this last the sort from which *sauerkraut* is usually made; St. John's Day, Sugar-loaf, and Dwarf York. This nutritious vegetable is not so sorely tried by hot weather as are other varieties of garden crops, and those shown by the above-named firm firm, did not seem to have been affected by the late hot and dry season. I am not sure in our animal economy, if we could not better do without our much extolled Potato rather easier than the Cabbage; at any rate the latter contains chemical ingredients in abundance that are almost absent from the former, and which the human body really needs to build up healthy tissue. *X.*

Tomato Hackwood Park Prolific.—I can fully endorse all that "T. B. T." (p. 406) says in favour of Hackwood Park Prolific Tomato, which stands out conspicuously among all others, not only for its remarkably free fruiting habit, but for large size and appearance. We have it here good, but I saw it a week or so back at Birkfield, near Ipswich, even better, as there Mr. W. Sheppard, gr. to E. Packard, Esq., has a row of it along the front of a Vine border, where the plants are trained to stakes and rails put up to form a trellis for them, and from top to bottom they are literally laden with fine fruit, hanging in clusters or strings, varying from five to eight or nine, or more, on a stem, thus forming quite racemose bunches. It must, therefore, be a free setter, and will on that

account, as well as for its excellence, be valuable for forcing or growing under glass, where almost every one who has a gardener now cultivates the Tomato. I would just remark here, that they strike so freely from cuttings, and bear so much quicker and better when raised in that way, that it is quite worth while propagating by that mode any that are required, especially for winter, as the plants so raised grow less rampant, and soon come into bloom. *J. S.*

Helianthus cucumerifolius.—This annual Sunflower, so named by Torrey and Gray from the resemblance of its leaves to those of the Cucumber, is now described by Asa Gray as a variety of H. debilis of Nuttall. It is said to frequent sandy soils, often in woods, in Texas. It was introduced by Mr. W. Thompson, of Ipswich, about four years ago. Its bright yellow flowers, more than 3 inches across, with broad black centres, and its broad branching habit, make it a very ornamental annual, growing from 4 to 5 feet high, and nearly as much across, where it has room for development. It has before been noticed in these pages, but I mention it again to draw attention to the readiness with which it forms hybrids with species of perennial Sunflower. If the flowers are dusted with the pollen of them, or of Helianthus annuus, the seed produces plants retaining the characters of the seed parent in habit, and leaf, and spotted stem, but the flowers simulate all the pollen parents, being hardly distinguishable, some from those of H. giganteus, others from those of H. decapetalus, or of H. doronicoides. This tendency to form hybrids, which has not been thought common in Composite flowers, I have noticed also in some of the Asters, nondescript characters coming up amongst them in the borders. This no doubt much increases the difficulty of naming garden specimens in this already difficult genus. *C. Wolley Dod, Edge Hall, Malpas, Sept.* 27.

Dahlias.—Whilst these beautiful autumn flowers are just now so much with us, and objects of interest and discussion, I would like to suggest to raisers in a large way of single kinds that any tendency on the part of the seedlings to produce blooms having petals other than the usual ring of flat ones should be cross-fertilised with the object of securing, if possible, a race of semi-double or double flat-petalled flowers. Until recently, when the fondness for the single forms became general, the efforts of raisers seem to have been devoted to the production of blooms only, which produced quilled or fluted florets. Hence the intense formality and rotundity of the flowers, which to many are their worst features. I have seen in some single Dahlia blooms this tendency to convert tubular into flat florets into petals to which I have referred, but not sufficiently developed to be able to say whether these promised to become flat, like the outer florets, or fluted, as is the case with all double ones. If the fluted floret is the order of Nature then it seems little use fighting against it, but I do not think that can be, because in the double Dahlia of every kind the outer florets are fluted, whilst with the singles they are always flat. For that reason I would infer that single forms will produce flat florets throughout the flower even when no longer single. It may well be asked, Why wish to destroy the beautiful single forms?—but the reply is that no such destruction is proposed. I only suggest the creation of yet another section from out of the single class, and the which, whilst of necessity very effective flowers under any circumstances, would be specially enduring in a cut state. The lack of endurance is the chief objection to the singles now, but the more the petals are increased the greater would be the enduring properties of the flowers. Apart from those considerations there is no telling how beautiful a race of flat-floretted Dahlias might not be created. *A. D.*

GRAFTING RHODODENDRONS.

The chief points to be attended to in grafting these plants, are to have healthy stocks, and to give proper treatment after grafting. The stocks should be raised from seed, and should be at least four years old before being taken up and potted for grafting purposes. If the plants are taken up out of the beds, in which they have stood pricked out two years, they can be grafted in January, February, and March; and for a cold frame the operation may extend into April, but in that case the grafts should have been taken off by the end of February and stuck in under a hand-glass, behind a north wall or in a some shady place.

Those worked in heat may be grafted either saddle or wedge-fashion, but saddle grafting (fig. 83) is the best, and makes the strongest union. The graft should not be quite so large as the stock, so as to leave room to make a good callus. The wedge grafting (fig. 82) is for using small bits of choice sorts. Shallow boxes are sometimes used where large quantities are grown, and the balls are packed closely together, and are then placed in a close moist heat, under double glass if possible. If under single glass they must be sprinkled twice a day, and shaded from the sun till they begin to grow, when air must be admitted very gradually until they are hardened off and fit to stand in a shady place until October.

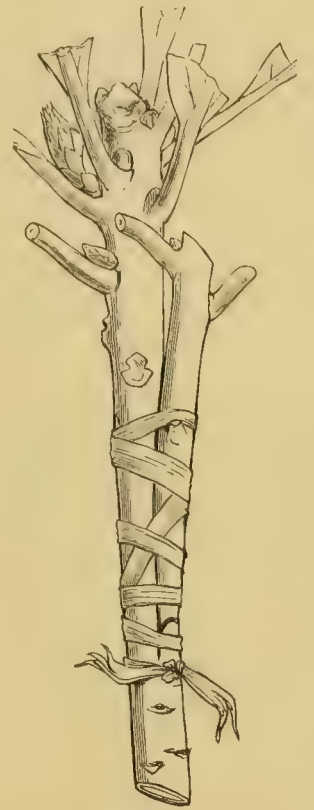


Fig. 81.

The grafting may be done under a bell-glass in a cool close pit, but they must always be attended to as above.

Another method is to graft in August. This must be side grafting (fig. 81), and the plants so done

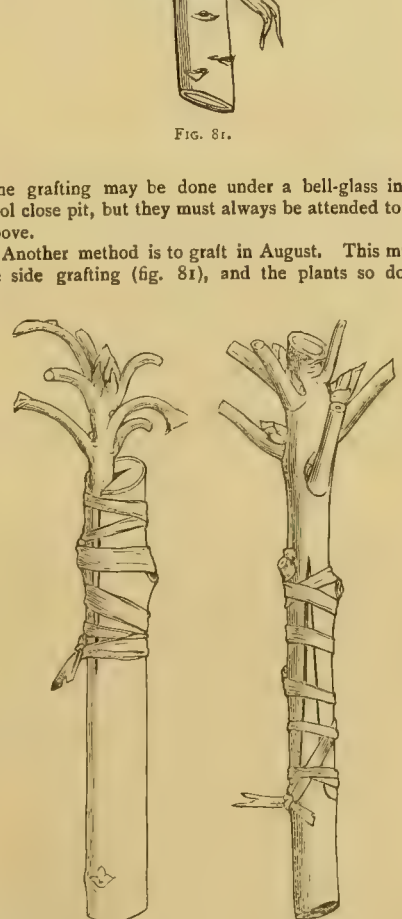


Fig. 82. Fig 83.

should be kept under glass all the winter in pots, and should not be headed back until the stocks have begun to grow, when the young growths should be stopped back until the graft begins to shoot: the stock can then be headed back. The accompanying illustrations are taken from an article by Mr. Standish in a former volume.

Florists' Flowers.

The Auricula.—Potting ought to be finished by this time, but we still have a few small plants that will be the better for being repotted, and they will be done this month. Some years ago a few plants were potted in our collection about the end of October, and they turned out to be the best at blooming time. Some of the later seedlings will be repotted up to the end of the month, if the weather continues favourable. The established plants must be kept rather dry at the roots; much moisture during mild weather promotes growth, and with the growth autumn trusses are produced. It is too late now to take off and propagate offsets, unless they are strong and well rooted; as a rule it is better to allow them to remain on the plants until the month o February, when they can be taken off, and they w il be more likely to do well than at any other time o the year. There is great danger of the more delicate plants being injured by the decaying leaves in cold, damp weather; they ought, therefore, to be carefully removed at least once in two weeks; at the same time any greenfly may be removed with a soft brush. In the open borders or in the rock garden the alpine varieties are apt to get covered with damp, decayed tree leaves, and any other decaying leaves, weeds, &c., should be removed, so that everything may be clean and neat. Decaying leaves remind us of the dying year, and it may be as well that such remembrances are kept out of sight.

The Carnation and Picotee.—October is the month during which the plants must be potted off. By this time most of the layers are well rooted; they should, therefore, be carefully detached from the parent plants, and one large or two small plants should be repotted into 60-sized pots. They may then be removed into a cold frame for the winter, the lights of which must be kept rather close over the plants until they are established in the pots. If there should be any greenfly upon them, it may be easily killed by dipping the plants in soft-soapy water. Established plants in the open border should have a large proportion of the layers removed; some rich compost ought to be pressed into the spaces from whence they were taken, and they will require no further attention. Old plants treated in this way may remain in the same position for several years; the surplus plants can be planted elsewhere or be given away.

Tree Carnations are now valuable, inasmuch that they produce quantities of bloom, and they will continue to do so all through the winter and spring months. The later propagated plants still in small pots may be repotted into larger ones, the plants, after potting, to be placed in a greenhouse temperature, where they ought to get plenty of air and light. As the days become shorter and the nights colder, with the usual abundant moisture in the air at that time, they will require artificial heat to keep the air warmer and drier. If a house can be spared for Bouvardias, zonal Pelargoniums, and Tree Carnations, the three make a charming display during the winter months.

The Dahlia.—The recent dry and warm weather has been very favourable for a late bloom. Our own plants were nearly out of bloom, at the time of the Crystal Palace Dahlia show. They made a new growth after that, and, if weather permits, will flower well during the whole of this month. The pompon varieties are yet a mass of bloom, although quantities are cut almost every day. It cannot be expected that they will be much longer permitted to be useful, as frosts may soon be expected to destroy both flowers and foliage; as soon as this happens the plants may be taken up, after the stems have been cut over 6 inches above the ground. Turn them upside down for an hour or two to allow all the water to drain out of the hollow stems; after that they may be stored away for the winter. The ground where they are to be planted next year should also be prepared for them by being trenched up, and sufficient manure should be put into it. It is necessary to put in two layers of manure, the lower one at a depth of 18 inches, and the upper one 9 inches below the surface.

Hollyhocks.—A general impression seems to prevail that, if the plants are allowed to remain in

the open ground during the winter, the disease will not be so likely to attack them. I intend to leave ours out-of-doors this winter at any rate. The plants will have a mulching of dry manure placed round them in order to keep the frost from doing them any injury. Late propagated cuttings should now be potted off into large 60's; they will do well in these through the winter, to be potted into larger pots in the spring. In order to obtain good spikes, or single blooms, for exhibition, the ground must be deeply trenched and well manured as for Dahlias. Autumn and spring propagated plants ought both to be grown as the one succeeds the other in blooming, the spring cuttings flowering latest.

PENTSTEMONS.—These useful autumn flowering plants are much esteemed by some people, and there are not many plants better adapted to bear company with the Michaelmas Daisies. They flower almost continuously until the frost comes, if the seed-pods are removed, almost as soon as the flowers fade. In mild winters they stand well in the open borders, but in this respect they are much upon a par with the shrubby Calceolarias. Take the cuttings off about the end of October, and insert them in hand-glasses under the shelter of a wall. Seedlings are easily raised, but it is not worth while to raise them from seeds saved indiscriminately. The best named varieties or seedlings should be crossed with each other.

PHLOXES.—The dry hot weather has been more trying to these than it has been for the Pentstemons, and they passed out of bloom more quickly. A good mulching of decayed manure, over the roots, and plentiful supplies of water, work wonders with all such gross feeding plants as these. The plants propagated from cuttings in the spring should be utilised to plant beds or borders, instead of the plants that are more than two years old. It is very easy to propagate Phloxes by chopping the old clumps down the middle or quartering them; but it is a very clumsy method, and one that no good gardener would think of practising. Strong handsome spikes can only be obtained when the plants are propagated by cuttings or seeds.

THE TULIP.—As the bulbs have to be planted early in November it is only right that the ground should be prepared as soon as possible. I have grown our collection for the last few years without any protection whatever, and we have not failed to get a good bloom. They were particularly fine last May. What they suffer from most is heavy rains, which come on suddenly sometimes before the flowers have time to shut up.

THE PINK.—The beds of these ought to be planted out at once if the plants are ready. What they like best is light rich soil, of considerable depth. Plant out, if in beds, from 9 inches to a foot apart; the greater distance if the plants are large and of vigorous constitution. Some plants are of such a delicate habit that they need not be planted more than 6 inches apart. A little experience will soon teach the ardent cultivator which plants must be set out at the longer and shorter distance. *J. Douglas, Great Gearies, Ilford.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, OCTOBER 1, 1884.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Sept.	In.	In.	°	°	°	°	°	°			In.
25	29.97	+0.22	65	0	48	0 17.0	55.5	+ 0.7	47.7	75	W. S.W.	0.00
26	29.79	+0.05	68.0	50.0	18.0	58.2	+ 3.5	51.5		79	S.W.	0.01
27	29.80	+0.07	60.0	47.0	13.0	55.0	+ 0.4	50.5		85	S.W.	0.00
28	29.90	+0.18	63	4	52	8 10.6	58.9	+ 4.4	52.6	80	S.W.; W. SW.	0.05
29	30.00	+0.28	62.2	55.0	7.2	57.5	+ 3.1	53.1		85	N.E. W. SW.	0.05
30	29.96	+0.25	63	5	43.8	19.7	53.7	— 0.6	49.0	84	E.	0.00
Oct. 1	29.91	+0.21	62.0	51.0	11 0	55 4	+ 1.0	46 8		73	S.W.	0.02
Mean	29.90	+0.18	63 4	49.6	13.8	56.3	+ 1.8	50.2		80	S.W.	0.13

Sept. 25.—Very fine day and night.
— 26.—Dull day and night. Slight rain in evening.
— 27.—Dull day and night.
— 28.—Fine day; dull, occasional gleams of sunshine. Fine night.
— 29.—Dull day: very dark, with slight rain at times. Dull cloudy night.
— 30.—Misty in early morning. Very fine morning. Dull afternoon and night.
Oct 1.—Drizzling rain in early morning. Dull morning. Fine bright afternoon. Fine night, overcast, moon occasionally visible.

LONDON: *Atmospheric Pressure.*—During the week ending September 27, the reading of the barometer at the level of the sea decreased from 30.02 inches at the beginning of the week to 29.68 inches by midnight on the 21st, increased to 30.28 inches by midnight on the 23d, decreased to 30.15 inches by 3 P.M. on the 24th, increased to 30.21 inches by 9 A.M., decreased to 30.11 inches by 3 P.M., and increased to 30.13 by midnight on the 25th, decreased to 29.96 inches by 3 P.M. on the 26th, increased to 29.98 inches by 9 A.M. on the 27th, decreased to 29.95 inches by 3 P.M. on the same day, and was 30.03 inches by the end of the week.

The mean reading of the barometer for the week was 30.02 inches, being 0.15 inch lower than last week, and 0.07 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 72° on the 21st, the highest on the 27th was 60°. The mean of the seven high day temperatures was 65°.

The lowest temperature was 47° on the 27th; on the 21st and 22d the lowest temperature was 52°. The mean of the seven low night temperatures was 49°.3.

The greatest range of temperature in one day was 20°, on the 21st; the smallest was 13°, on the 22d and 27th. The mean of the seven daily ranges was 15°.7.

The mean temperatures were—on the 21st, 61°.5; on the 22d, 56°.8; on the 23d, 54°.2; on the 24th, 55°.3; on the 25th, 55°.5; on the 26th, 58°.2; on the 27th, 55°; and these were all above their averages (excepting the 23d, which was 1° below) by 6°, 1°.5, 0°.3, 0°.7, 3°.5, and 0°.4 respectively.

The mean temperature was 56°.6, being 8°.5 lower than last week, and 1°.6 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 132°, on the 21st. The mean of the seven daily readings was 108°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 36°, on the 27th. The mean of the seven readings was 38°.5.

Rain.—Rain fell on the 21st, 22d, and 24th, to the amount 0.07 inch.

ENGLAND: *Temperature.*—During the week ending September 27, the highest temperatures were 75°.2, at Cambridge, 72° at Blackheath, 71°.4 at Bradford; the highest at Bolton was 63°.8, at Sheffield and Sunderland 65°. The general mean was 68°.1.

The lowest temperatures were 40° at Wolverhampton, 40.°4 at Bolton, 42° at Hull; the lowest at Brighton was 47°.5, at Plymouth and Blackheath 47°. The general mean was 44°.6.

The greatest ranges were 31°.2 at Cambridge, 27° at Nottingham, 26° at Hull and Leeds; the least ranges were 18°.6 at Liverpool, 20° at Sunderland, 20°.8 at Bristol. The general mean was 23°.5.

The mean of the seven high day temperatures was highest at Cambridge, 66°.9, at Blackheath 65°, at Brighton 64°.6; and was lowest at Bolton and Sunderland, 58°.3, at Wolverhampton and Liverpool 60°.3. The general mean was 62°.3.

The mean of the seven low night temperatures was highest at Truro, 52°.3, at Preston 51°.8, at Brighton 51°.3; and was lowest at Wolverhampton, 44°.5, at Nottingham 46°.2, at Cambridge 46°.4. The general mean was 49°.

The mean daily range was greatest at Cambridge, 20°.5, at Nottingham 17°.4, at Blackheath 15°.7; and was least at Liverpool, 9°.3, at Sunderland and Preston 9°.6. The general mean was 13°.3.

The mean temperature was highest at Brighton, 56°.8, at Truro 56°.7, at Blackheath 56°.6; and was lowest at Wolverhampton, 51°.2, at Sunderland 51°.5, at Bolton 51°.8. The general mean was 54°.4.

Rain. — The largest falls were 1.59 inch at Wolverhampton, 1.57 inch at Bolton, 1.04 inch at Liverpool; the smallest falls were 0.07 inch at Blackheath, 0°.16 inch at Sunderland, 0.33 inch at Cambridge. The general mean fall was 0.61 inch.

SCOTLAND: *Temperature.*—During the week ending September 27 the highest temperature was 67°.1, at Perth; at Dundee the highest was 61°.7. The general mean was 64°.4.

The lowest temperature in the week was 43°.3, at Dundee; at Glasgow the lowest temperature was 46°.5. The general mean was 44°.7.

The mean temperature was highest at Edinburgh and Perth, 55°.1, and lowest at Glasgow and Dundee, 53°.3. The general mean was 54°.2.

Rain. — The largest fall was 2.20 inches, at Greenock, and the smallest fall was 0.19 inch, at Edinburgh and Leith. The general mean fall was 0.68 inch. JAMES GLAISHER, F.R.S.

Obituary.

IN the death of Mr. JOHN CROSSLING, at the age of seventy, gardener for the long period of forty-five years at Felton Park, Northumberland, the craft has lost one of its most successful men of the old school of gardeners, and although it was seldom he carried the well grown productions of his garden to shows outside of the county, he was a man of mark in his profession with whom all the local growers had to reckon. He had talent for other things besides his business occupation, as was witnessed in his well-preserved specimens of fish and animals, &c. He was a faithful servant of the different possessors of Felton Park, and will long be remembered for his fine sterling qualities and business capacity.

Variorum.

THE ARCHÆOLOGY OF COVENT GARDEN MARKET. — Who would imagine, says a writer in *The English Illustrated Magazine*, that Covent Garden, with its shady, many-scented arcade, with its Babel of voices and crush of baskets, its flowers "a-growing and a-blowing," its curious mixed atmosphere of town and country—who would now imagine that this had once been an "enclosure or pasture," "browsed by deep-udder'd kine," and where, maybe, the nightingale—

"in April suddenly
Brake from a coppice gemm'd with green and red"?

Yet so it was. Covent Garden, or "Convent Garden," lying between Long Acre and the Strand, originally formed part of the grounds of the ancient Abbey of Westminster. There is still extant a document, "written in very choice Italian" (if so one may term law Latin), in which it is described as "*le Covent Garden* . . . nuper pertinens Monasterio Sancti Petri Westmonasteriensis." Under Edward VI. it was granted by that king to his uncle, the Duke of Somerset. At Somerset's attainder it reverted to the Crown, and then, "with seven acres called Long Acre," was re-granted by patent to John Earl of Bedford. This was in May, 1552. Upon part of the "*terre et pasture*" so acquired, the Earl built the old semi-wooden structure known as Bedford House, which looked into the Strand, and the long wall of whose garden at the back corresponded to what is now the south side of the market. Under Francis Duke of Bedford, *circa* 1631, the square was laid out, and the arcades or piazzas erected.

Answers to Correspondents.

A LOVER OF PINES should forward his name and address for the Editor's satisfaction.

AMATEUR: *Lothair.* If the man is not a gardener by profession, but is only a labourer in a nursery, and looks after his plants in his only available time—*i.e.*, after working hours—he is undoubtedly an amateur. It has been taken to mean that an amateur is a person not a gardener by profession, who grows plants for his own use or gratification, but who does not trade in them. Even if he only dispose of his surplus stock, but does it by public circular, offering to sell to all comers, we should not consider him, strictly speaking, as an amateur.

DAHLIA PICTA FORMOSISSIMA: *H. Cannell.* Glad to see the old variety again, as it can hold its own among the elect of to-day, and is worthy of a place in the herbaceous border or Dahlia bed.

DAHLIAS: *J. Godfrey.* Not worthy of being named, there being numbers similar.

CHERRY LAUREL FRUITS: *T. Jerrold.* We have no experience of their quality in the shape of jam, but doubtless they might be used as such. We do not believe the fruits are more poisonous than Cherries, but the leaves and kernels are more or less poisonous, so we advise you to be careful about the jam.

COLEUS: *E. J. Jarman.* We cannot undertake to name the innumerable varieties of this plant: try a florist in a large way of business.

EUCHARIS: *W. T.* The fusion of two flowers is by no means uncommon.

EXTERMINATION OF THE DAISY: *W. H. C.* The Daisy may be exterminated by using the spud and by the application of nitrate of soda or sulphate of ammonia.

FASCIATION IN PYRETHRUM ULIGINOSUM: *M. A. S.* Such instances are common in all quick-growing plants.

FUCHSIA SEEDS GERMINATING, &C.: *J. M.* To get good trustworthy seed artificial fertilisation with its own or other pollen is requisite. The seed is very

fine, and must be sown thinly in light sandy soil, in February or March, in heat. The earth in the pot or pan should be well watered an hour previous to sowing, and be covered with a piece of glass darkened with brown paper laid on it till the seeds grow. Pick the berries when ripe. A sound greenhouse will keep out 5° to 8° of frost. Much will depend on the cubical contents, if small, it being sooner cooled, and iron ribs part with the internal heat sooner than wood. Two degrees of frost inside your house would greatly injure Pelargoniums, more injury ensuing if the soil they were in was wet, or if there was undue moisture in the house. If they or any plants get frozen slightly do not light a fire at 8 A.M., or at any other time till they have become thawed, which is best brought about by shading the house, so that not a ray of sunlight or heat reaches them, and then deluge the plants with cold water a degree or two above the ice point. During the uncertain time in autumn covering up with mats of straw (the best) or bast, or with Frigi Domo—a kind of hair blanket—is better than risking damage, and is preferable to the use of fire-heat so early in the cold season.

Galls on Ash : *H. M.* The so-called galls are puff-balls : a curious variety of Scleroderma vulgare.

Garden Plans : *C. A.* You will find some plans in *Parks and Gardens*, by Cole, published at 171, Fleet Street. Kemp *On Landscape Gardening*, now out of print, might be useful if you could meet with it.

Hoya carnosa : *H. K. V.* The production of fruit is certainly uncommon, probably owing to the absence in this country of the particular insect to whom the duty of fertilisation is, or becomes by force of circumstances, entrusted. The production of ripe fruit while other flowers are still expanded is a result of the normal succession of the flowers here more accentuated than usual.

Inga Plant : *H.* What you send is Guizotia oleifera, an Abyssinian plant, also cultivated in India for the sake of the seed, which yields an oil known in India as Ram Til. The plant is a Composite, allied to Sunflowers.

Market Gardening : *H. S.* There is no institution where such knowledge as you want is taught. Shaw *On Market Gardening*, published at 37, Southampton Street, Covent Garden, is a suitable work.

Mulberry : *Van der Swaelmen.* Morus alba.

Names of Fruits : *C. J. Nicholson, Loughgall.* 4, Lord Derby ; 5, Catshead.—*F. P. B.* 2, Nonsuch ; 4, Blenheim Orange ; 5, Fearn's Pippin.—*A. B.* 2, Gloria Mundi ; 3, Tower of Glamis ; 5, Ribston Pippin ; 6, Dumelow's Seedling.

Names of Plants : *A. J. Lamnerde.* Maxillaria aromatica.—*W. H. C.* 4, Geranium molle ; 5, Lapsana communis ; 13, Trifolium arvense.—*H. Alexander.* Quite obliterated in transit, send a specimen in a box.—*A. H.* 1, Cupressus sempervirens ; 2, Juniperus sinensis ; 3, Symphoricarpus racemosus ; 4, Andromeda pulverulenta ; 5, Kalmia sp.—*Subscriber.* Acampe cylindrica.—*N.* 1, Thuiopsis borealis ; 2, 3, 4, Cupressus Lawsoniana ; 5, Juniperus virginiana ; 6, Chimonanthus occidentalis ; 7, a species of Taxus. —*C. E. F.* A curious malformation of some Juncus. —*D. C.* 1, Festuca elatior ; 2 and 3, Poa pratensis ; 4, Bromus arvensis ; 5, Apera spica-venti ; 6, appears to be a scrap of Arrhenatherum avenaceum.—*J. McP.* 1, Miltonia spectabile ; 2, Pyrus pinnatifida (Sorbus hybrida) ; 3, Pyrus Aria ; 4, Solidago lanceolata ; 5, Populus alba ; 6, Acer platanoides.—*Fern Down.* 1, Solidago odora ; 2, Veronica incana ; 3, Chrysanthemum uliginosum ; 4, Hypericum Hookerianum ; 5, Vitis bipinnata ; 6, Calendula officinalis.—*C. W. D.* Specimen insufficient, but either Eupatorium cannabinum or E. purpureum.—*C. A. E.* 1, Bougainvillea glabra ; 2, Rondeletia speciosa ; 3, Cacalia repens ; 4, Libonia floribunda.—*Reg. Young.* 1, Odontoglossum tripudians ; 2, Cypripedium longifolium ; 3, Zygopetalum maxillare ; 4, probably Galeandra species ; 5, Oncidium Jonesianum ; 6, Odontoglossum Lindleyanum var.—*J. J.* 1, Benthamia fragifera ; 2, Kennedya monophylla ? ; 3, Picea Morinda ; 4, Picea Menziesii (sitchensis) ; 5, doubtful ; 6, Polygonum cuspidatum ; 7, Cunninghamia sinensis ; 8, Tsuga Hookeriana ; 9, Berberis dulcis ; 10, doubtful, probably Discaria sp. ; 11, Retinospora obtusa ; 12, Sequoia sempervirens ; 13, Lophospermum scandens ; another time send only six specimens, our time and space are too precious.

Pansy Blooms : *Alex. Lister.* They were pretty, but consisted of flowers differing but little from many others in commerce, these flowers coming so good from seed now.

Potatos : *J. P. G.* Pink *On Potato Growing.*

Pot-Pourri : *A. B.* According to the authority of Mr. Piesse, in his work on *Perfumery*, it is made as follows :—Dried Lavender, 1 lb. ; whole Rose leaves, 1 lb. ; crushed Orris root, ½ lb. ; broken Cloves, Cinnamon, and Allspice, of each 2 oz. ; table salt, 1 lb.

Shells : *T. S.* We do not know the like semi-transparent shells found in great numbers on the pots in your cool Orchid-house. They are of the size of a moderate pin's head, and closely resemble Stylifer astericola. They are probably an importation. Reeve, *Conch. icon.*, pl. 225. *W.*

Strawberry Leaves Spotted : *W. W.* We do not find any traces of fungus, insects, or mites on the Strawberry leaves (covered with minute discoloured spots) except the skin of a small caterpillar which had not gnawed the leaves. Some of the blotches are much dilated, which would not have been the case if the leaves had been sucked by red-spider. The condition is very common. *W.*

Willesden Paper : *W. E. D.* The Willesden paper may be obtained at the Patent Waterproof Paper Company, Canal Works, Willesden Junction, N.W.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Intelligent Readers, please note : — *Letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the Publisher, and* not *to the Editor.*

CATALOGUES RECEIVED.

W. Rumsey, Waltham Cross—Roses, Trees, Fruits, &c.

The National Chrysanthemum Society—Chrysanthemums, Show, Japanese, &c.

J. Davis & Son, Ormskirk, Lancashire—Hardy Trees, Conifers, Shrubs, &c.

W. Paul & Son, Waltham Cross—Roses and Special List of Fruits, Vines, Roses, Evergreens, Climbers, &c.

Paul & Son, The Old Nurseries, Cheshunt—Roses.

Compagnie Continentale d'Horticulture, Ghent —Illustrated Catalogue of New and Rare Plants ; Mr. J. Unthank, 25, Spring Terrace, North Shields, Agent.

T. Späth, Rixdorf, Berlin—Chief List of Trees, Fruits, and Shrubs.

W. Gordon, The Lily Nursery, Amyand Park Road, Twickenham—Lilies, Bulbous Plants, Orchids.

Cranston's Nursery & Seed Company (Limited), Hereford—Roses.

V. Lemoine, Rue de l'Etang, Nancy—Extract from List of New Plants.

Henderson & Sons, Den Nursery, Brechin—Bulbs.

Communications Received.—M. C. C.—J. B., not yet received.—J. J. S. H.—W. E. G, boxes sent.—Countess of Dartrey.—M. A. S.—H Mills.—H. E, with thanks.—A. D. W.—G. B.—Joseph Clarke.—A. O.—Messenger & Co.—J. C. & Sons.—Henry B.—G B. & Co.—J. Smith.—J. S.—B. A.—W. J. M.—T. B.—J. W. Royston, next week.—T. Hartrey.—Hastings.—E. Burbery,—P. Ingram.—H. L. E.—W. J. R., Castagnola.

DIED, on September 30, in his seventieth year, John Crossling, for forty-five years Head Gardener at Felton Park, Northumberland,

Markets.

COVENT GARDEN, October 2.

Trade quiet in general, but good. Pines in demand, the market being clear. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.
Apples, ½-sieve	1 6	4 0
Figs, per dozen	0 6	0 9
Cobs, per 100 lb.	50 0	55 0
Grapes, per lb.	1 0	4 0
Lemons, per case	21 0	..
Melons, each	1 0	1 6
Pine-apples, Eng., lb.	4 0	5 0
Peaches, per doz.	3 0	8 0
Pears, French, doz.	1 0	2 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.
Artichokes, Globe, per doz.	2 0	4 0
Aubergines, each	0 4	..
Beans, French, lb.	0 4	..
Beet, per doz.	1 0	..
Cabbages, per doz.	1 6	2 0
Carrots, per bun.	0 6	..
Cauliflowers, English, dozen	1 0	2 6
Celery, per bundle	1 6	2 6
Cucumbers, each	0 6	1 0
Endive, English, per dozen	1 0	..
Garlic, per lb.	0 6	..
Herbs, per bunch	0 2	0 4
Horse Radish, bund.	3 0	4 0
Lettuces, Cabbage, per dozen	1 6	..
— Cos, each	0 2	..
Marrows, each	0 2	..
Mint, green, bunch	0 4	..
Mushrooms, p. baskt.	1 0	2 0
Onions, per bunch	0 6	..
— Spring, per bun.	0 6	..
Parsley, per bunch	0 4	..
Peas, English, quart	2 6	..
Radishes, per doz.	1 6	..
Small salading, per punnet	0 4	..
Spinach, per bushel	2 6	..
Tomatos, per lb.	0 6	..
Turnips, new, bun.	0 5	..

Potatos.—Magnum Bonums, 50*s.* to 70*s.* ; Regents, 70*s.* to 80*s.* per ton. Trade very quiet.

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0
Arbor-vitæ (golden), per dozen	6 0	18 0
— (common), dozen	6 0	12 0
Asters, per dozen	3 0	6 0
Begonias, per doz.	4 0	12 0
Bouvardia, dozen	9 0	18 0
Chrysanth., dozen	4 0	9 0
Cockscombs, doz.	2 6	4 0
Coleus, various, doz.	3 0	9 0
Cyperus, per dozen	4 0	12 0
Dracæna term. doz.	30 0	60 0
— viridis, per doz.	12 0	24 0
Erica, various, doz.	9 0	18 0
Euonymus, various, per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., dozen	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage Plants, various, each	2 0	10 0
Fuchsias, per doz.	3 0	6 0
Hydrangea, per doz.	9 0	18 0
Lilium lancifolium, per dozen	6 0	18 0
— auratum, doz.	12 0	24 0
Marguerite Daisy, per dozen	8 0	12 0
Mignonette, per doz.	3 0	6 0
Myrtles, per doz.	6 0	12 0
Palms in variety, each	2 6	21 0
Pelargoniums, scarlet, per dozen	2 0	6 0
Solanums, dozen	9 0	12 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0
Arum Lilies, 12 blms.	3 0	6 0
Asters, 12 bunches	3 0	6 0
Azalea, 12 sprays	1 6	2 6
Bouvardias, per bun.	0 9	1 0
Camellias, per doz.	4 0	6 0
Carnations, 12 blms.	1 0	2 0
Chrysanth., 12 bun.	3 0	9 0
— large, 12 blooms	3 0	6 0
Cornflower, 12 bun.	2 0	4 0
Dahlias, 12 bunches	3 0	6 0
Eucharis, per doz.	3 0	6 0
Forget-me-not, 12 bunches	2 0	6 0
Gardenias, 12 blms.	3 0	6 0
Gladiolus, various, 12 spikes	1 0	3 0
Heliotropes, 12 sp.	0 6	1 0
Lapageria, white, 12 blooms	2 0	3 0
Lapageria, red, 12 blooms	1 0	2 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 0	4 0
Pelargoniums, per 12 sprays	0 6	1 0
Primula, double, bun.	1 0	1 6
Pyrethrum, 12 bun.	2 0	6 0
Roses (indoor), doz.	1 0	4 0
— (outdoor), 12 bun.	4 0	12 0
— coloured, doz.	4 0	9 0
Stephanotis, 12 spr.	4 0	8 0
Sweet Peas, 12 bun.	1 6	4 0
Tropæolum, 12 bun.	1 0	2 0
Tuberoses, per doz.	0 6	1 0
Violets, 12 bun.	0 9	1 3
— Parme, Fr., bun.	3 0	4 0
White Jasmine, per bunch	0 6	1 0

SEEDS.

London : *October* 1.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that the market to-day was thinly attended, and no fresh feature showed itself, either of interest or importance. New American red Clover seed, notwithstanding the low prices at which it is offered, fails as yet to find buyers on this side. There is no disposition at present shown, moreover, to purchase either Alsike white or Trefoil. The Trifolium season seems now quite over. Winter Tares are unchanged in price. For Canary and Hemp seed the sale is slow. Blue Peas keep steady in value and demand. Feeding Linseed is firm.

CORN.

At Mark Lane on Monday holders of Wheat asked firmer prices, but buyers showed no disposition to respond. Flour was variously reported as firm, inactive, and slow sale at late rates. Medium malting Barley was the turn cheaper, whilst grinding sorts with good arrivals compared fully 6*d.* below Monday se'nnight. Beans and Lentils were lower on the week. Canadian Peas were steady at 33*s.* to 34*s.* per 504 lb. Maize was rather steadier. Oats, with continued moderate arrivals, were steady, and for the week compare rather in favour of sellers.—On Wednesday Wheat was very quiet and without quotable change from Monday's value. Flour met only a limited inquiry at late prices. Barley was quiet. Beans and Peas met a retail demand at late values. Maize had rather a steadier tendency. Oats were firm, with rather a hardening drift. — Average prices of corn for the week ending Sept. 27 :—Wheat, 33*s.* ; Barley, 32*s.* 2*d.* ; Oats, 18*s.* 10*d.* For the corresponding period last year :—Wheat, 41*s.* ; Barley, 33*s.* ; Oats, 20*s.*

CATTLE.

At Copenhagen Fields on Monday increased supplies of cattle were on sale, and the trade moved heavily, prices for the most part ruling 2*d.* per 8 lb. lower. Sheep supplies were heavy, and values depressed 2*d.* per 8 lb. generally. Calves and pigs maintained their value firmly.—Quotations :—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.* ; calves, 3*s.* 6*d.* to 5*s.* 10*d.* ; sheep, 5*s.* to 5*s.* 6*d.*, and 5*s.* 8*d.* to 5*s.* 10*d.* ; pigs, 4*s.* to 4*s.* 8*d.*—Thursday's trade was very dull. Supplies were short, but quite sufficient for the demand, which was very sluggish both for beasts and sheep. Calves and pigs maintained firm prices.

HAY.

Tuesday's Whitechapel Market report states that supplies were not over large, except of straw, which is coming in very freely. The top price of Clover was reduced 2*s.* Trade was exceedingly dull, with a very drooping tendency. Quotations :—Prime Clover, 95*s.* to 112*s.* ; inferior, 60*s.* to 65*s.* ; prime second cut, 90*s.* to 112*s.* ; best meadow hay, 80*s.* to 95*s.* ; inferior, 40*s.* to 65*s.* ; and straw, 28*s.* to 37*s.* per load.—On Thursday there was a moderate supply, and trade was rather better for the best Clover. Prices were unaltered.—The Cumberland Market report states that there was a very slow trade, with a fair supply of both Clover and meadow. Quotations :—Clover, best, 100*s.* to 110*s.* ; inferior, 65*s.* to 90*s.* ; meadow hay, best, 80*s.* to 90*s.* ; inferior, 50*s.* to 70*s.* ; and straw, 30*s.* to 40*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state there were moderate supplies and a steady trade. Quotations :—Kent Regents, 60*s.* to 70*s.* ; Essex Shaws, 50*s.* to 60*s.* ; Magnum Bonums, 40*s.* to 70*s.* ; Victorias, 70*s.* to 80*s.* ; and Champions, 45*s.* to 60*s.* per ton.—The imports into London last week consisted of 4721 bags from Hamburg, 201 bags Rotterdam, 221 sacks Boulogne, and 1000 packages from Delfzyl.

COALS.

The following are the prices current at market during the week :—East Wylam, 15*s.* 6*d.* ; Ravensworth West Hartley, 14*s.* 9*d.* ; Walls End—Harton, 16*s.* ; Tyne (unscreened), 11*s.* 3*d.* ; Hetton, 18*s.* ; Hetton Lyons, 16*s.* ; Lambton, 17*s.* 6*d* ; Wear, 16*s.* ; East Hartlepool, 17*s.* 3*d.* ; South Hartlepool, 16*s.* 3*d.*

Government Stock.—Consols closed on Monday at 101⅛ to 101¼ for delivery, and 101⅛ to 101⅜ for the account. The figures of Tuesday, Wednesday, and Thursday were 101⅛ to 101¼ for delivery, and 101¼ to 101⅜ for the account.

STRAWBERRY RUNNERS.—All the leading varieties, well-rooted, 3s. per 100, free. SCOTT'S WASP DESTROYER, the most effectual mixture for destroying wasps.—JOHN SCOTT AND CO., Royal Nurseries, Merriott.

To the Trade Only.

ADIANTUM CUNEATUM.—Fine plants, in 4½ inch pots, 50s. per 100; also in 72's, at 20s. per 100. Cannot fail to please.
PERKINS AND SONS, Warwick Road, Coventry.

To Nurserymen, Florists, and Others.

LATE SHOW TULIPS, to be sold, solely in consequence of ill-health. The choicest and most unique collection in cultivation, comprising about 10,000 bulbs, of which nearly three-fourths are beautiful Rectified Seedlings, the labour of many years, and only in this collection, named and arranged in Cabinets. An opportunity never before offered is now presented to any one desiring to take up their cultivation, whether for profit or amusement. The price is very low. For particulars address,
G., Garfield Villa, Pingstead Road, Sutton, Surrey.

ROBERT AND GEORGE NEAL beg to inform Gentlemen, Builders, and all who may be intending to Plant Trees and Shrubs, &c., this autumn, that their stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS, is specially fine, and that the present time is the best to view and select the same, both as regards foliage and flower. A personal visit to the Nurseries earnestly solicited.
The Nurseries, Wandsworth Common, S.W.

PELARGONIUMS, new Zonals of 1884.—Twelve of the very finest varieties sent out last spring for 18s., in well rooted young plants; ditto sent out 1883, 12 for 6s.; 50 varieties, all new recently, for 8s. Cuttings half price
Best FUCHSIAS in cultivation, 12 for 2s, or new sorts of 1883, 12 for 4s; selections left.
Twelve extra fine PENTSTEMONS for 3s.
These collections have been selected with greatest care by a grower for open market, trying all the best new sorts.
See CATALOGUE, free on application.

RICHARD PANNETT, Nurseryman, Chailey, Sussex.

TEA SCENTED ROSES, in Pots, for Forcing.—Fine plants of all the best varieties, including Niphetos, Catherine Mermet, Perle des Jardins, Etoile de Lyon, Madame Lambard, &c., at 24s. to 30s per dozen; smaller size, bushy plants, in 5-inch pots, 15s. to 18s per dozen. Also extra strong CLIMBING ROSES, in Pots, for Conservatory Planting—Maréchal Niel, Climbing Devoniensis, W. A. Richardson, Reine Marie Henriette, La Marque, Triomphe de Rennes, and many others, 2s. 6d., 3s. 6d. and 5s. each.
New Rose CATALOGUE free by post.
GEO. COOLING AND SON, The Nurseries, Bath.

GREENHOUSE RHODODENDRONS.—This section produces fine trusses of white, orange-red, and various coloured flowers, while many of the varieties give forth a delicious perfume. Our collection is one of the finest, including many rare varieties. 12 healthy young plants, 9s, 12s., and 18s. 12 healthy strong plants, 21s., 30s., and 42s.
Rhododendron jasminiflorum, Princess Royal, Princess Alexandra, Fragrantissima, and Duchess of Sutherland, are well known varieties of this group.
E. G. HENDERSON AND SON, Pine apple Nursery, Maida Vale, London, N.W.

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to 10 feet high.
,, laurifolia, ditto.
,, Hodgins', 3, 4, 5 to 8 feet.
,, myrtifolia, ditto.
,, Scottica, 3 to 8 feet.
,, Yellow-berried, altaclarense and others.
,, Variegated, of sorts, 3, 4, 5, 6, 8 to 10 ft.
} many thousands.
,, Waterer's splendid plants, 3, 4, 5, and 6 feet, 8 to 15 feet in circumference.
,, Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimens.
,, Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteen years' growth, hundreds.
,, new Golden Weeping, a large number of very beautiful plants.
BOX, Green and Variegated, 3, 4, 5, 6 to 7 feet, many thousands.
YEWS, Common, 3, 4, 5, 6 to 10 feet, thousands.
,, Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.
,, Irish, 5 to 10 feet, hundreds.
CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6 to 8 feet, thousands.
,, Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful specimens.
THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.
RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands.
JUNIPERS, Chinese, 7, 8, and 10 feet high.
,, Chinese Golden, 3 to 6 feet.
JUNIPERUS VIRGINIANA GLAUCA, 3 to 5 feet
ABIES CANADENSIS, 4 to 7 feet, hundreds.
,, DOUGLASII, 3 to 5 feet, thousands.
,, ,, GLAUCA, 2 to 4 feet, hundreds.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, HOOKERIANA, 3 to 5 feet.
,, PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet. thousands.
,, NORDMANNIANA, 6, 7, to 10 feet.
,, PINSAPO, 6 to 10 feet, hundreds.
,, PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet.
CEDRUS DEODARA, 6 to 9 feet, hundreds.
,, LIBANI, (Cedar of Lebanon), 3 to 5 feet.
THUIA OCCIDENTALIS LUTEA, 3 to 6 feet, hundreds.
THUIOPSIS BOREALIS, 3 to 5 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet, hundreds.
,, PISIFERA AUREA (true), 3 to 6 feet.
,, PLUMOSA AUREA, 3 to 5 feet.

Knap Hill Nursery, Woking Station, Surrey.

FOR SALE, about 50 Succession PINES, fit for fruiting next spring and summer, clean healthy stuff, chiefly Smooth Cayennes. Also Plants in Fruit, and Suckers, if required, as the whole stock is to be disposed of. Apply to H. HOWARD, The Gardens, Castle Malgwyn, Boncath R.S.O., Pembrokeshire.

LILIUM HARRISII (True).

We are the Original Introducers and Sole Agents of Mr. Harris in England for this Grand Lily.

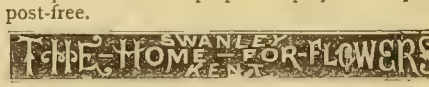
We have just received our Consignments, and find the Bulbs very good, larger than last year, and in capital sound condition. This grand Lily has been pronounced by all the practical men who have grown it to be the finest introduction for many years. Producing 2 to 5 blooms on a stalk, and throwing up 2 to 3 stalks during the season in succession. Flowers pure white, long narrow trumpet-shaped, and recommended for forcing.
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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
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BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton; in 2 bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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Certain Sudden DEATH

to all Grubs, Woolly Aphis, Green and Black Fly, Lice, Red Spider, Thrips, Mealy-Bug, Caterpillars, Ants, Worms, &c.

FIR TREE OIL

INSECTICIDE (SOLUBLE IN WATER)

For destroying ALL INSECTS and PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage. It cures Mildew and Blight on Fruit or Foliage, and a weak solution Kills all Vegetable Grubs, Turnip Fly, &c. Clears Grapes from Mildew or Mealy-Bug without affecting the bloom. Thickened with a little clay makes a good winter dressing. Destroys Lice and Fleas on Animals and Birds. Sold by Seedsmen and Chemists, 1s. 6d., 2s. 6d., and 4s. 6d. a bottle. Per gal. 12s. 6d., or less in larger quantities. Per post 3d. extra.
A treatise on FIR TREE OIL as an Insecticide, its application to Plants and Animals, sent Post-free on receipt of address, by the Manufacturer,
E. GRIFFITHS HUGHES, Manchester.
Wholesale:—HOOPER & CO.; CORRY, SOPER, FOWLER AND CO.; C. E. OSMAN AND CO; and from all the London Seed Merchants and Wholesale Patent Medicine Houses.
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Specially selected for Garden Use.
2 yards wide, 1½d., and 4 yards wide, 3d. per yard run.
Scrim, Hessian, and **Tiffany,** for protecting Fruit Trees and shading Greenhouses, from 2½d. per yard and upwards.
Russia Mats, Raffia Fibre, Tobacco Paper and Cloth, Cocoa-nut Fibre Refuse, and other Sundries at the lowest possible prices.
CATALOGUE post-free on application.

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ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS. — All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

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HER MAJESTY,
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15,000 OF THE NOBILITY, GENTRY, AND CLERGY.

Is extensively used for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames.
CAN BE LAID ON BY UNSKILLED LABOUR.
1 *Cwt., and Oil Mixture, Free to all Stations.*
Prices, Patterns, and Testimonials, Post-free.

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Discount for Cash.

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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
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Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety, Slates, Cement, &c.
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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
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KENT PEATS or LOAM supplied at lowest rates in any quantities.
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B. & SON have always a large stock in London of 20 in. by 12 in., 20 in. by 14 in., 20 in. by 16 in., 20 in. by 18 in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

HORTICULTURAL GLASS

14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.
A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.
Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from
GEORGE FARMILOE & SONS,
GLASS, LEAD, OIL and COLOUR MERCHANTS,
34, St. John's Street, West Smithfield, London, E.C.
Stock List and Prices on application Quote *Chronicle.*

Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.
Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.
"*Piercefield Park, June* 21, 1876.—SIRS,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."
CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.
H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.
Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to
HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow.

SUPERIOR VARNISH.

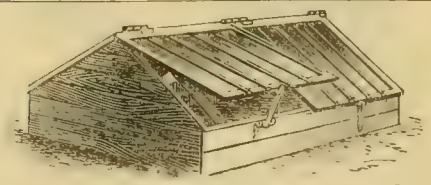


It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost.

PRICES:—BLACK, 1*s.* 6*d.* per gallon; in casks, containing not less than 9 gallons, delivered free at most railway stations. Casks extra, but two-thirds allowed if returned carriage paid to our works in good condition. BRUSHES for coating Ironwork, Wood, or Stone, 1*s.* each.

CATALOGUES of all kinds of Iron and Wire Fencing, Gates, &c., free on application.

BAYLISS, JONES & BAYLISS,
VICTORIA WORKS, WOLVERHAMPTON; and 3, Crooked Lane, King William St., E.C.—*Please name this paper.*



PORTABLE PLANT FRAMES.
The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide, " " "	4	15	0
6 feet long, 5 feet wide, " " "	3	15	0
12 feet long, 5 feet wide, " " "	6	10	0

The glass is nailed and puttied in.

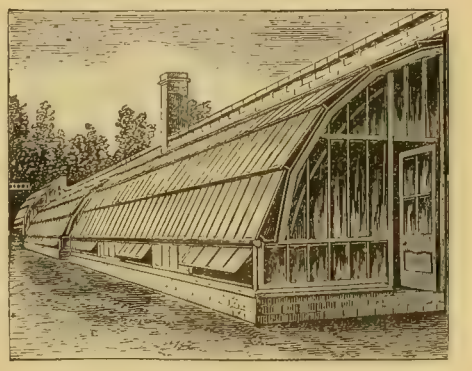
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Hothouse Builders and Engineers,
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W. H. LASCELLES & CO.,
HORTICULTURAL BUILDERS,
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W. H. LASCELLES AND CO. will give Estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.
LASCELLES' NEW ROCKWORK material in various colours.
Samples can be seen, and prices obtained at 121, Bunhill Row, and 35, Poultry, Cheapside, E.C.
Illustrated Lists of Wooden Buildings, Greenhouses and Conservatories, and Concrete Slabs for walls, paths, and stages, sent post-free on application.

WRIGHT & HOLMES,
Horticultural Builders,
Patentees and Sole Manufacturers of the Gardener's and other Portable Frames,
333, MOSELEY ROAD, BIRMINGHAM.



Estimates given for every kind of Horticultural Buildings.

Price List on application to
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THE COTTAGER'S CALENDAR
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GARDEN OPERATIONS.
ORIGINALLY COMPILED BY THE LATE SIR JOSEPH PAXTON, M.P.

Price 3d., Post Free 3½d.

W. RICHARDS, 41, WELLINGTON STREET, STRAND, LONDON, W.C.

WORKS FOR THE POSSESSORS OF GARDENS.

MRS. LOUDON'S LADIES' COMPANION TO THE FLOWER GARDEN.
A complete Guide to the Management and Adornment of Gardens of every size. A New Edition.
Fcap. cloth, price 7*s.*

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Fourth Edition, revised and enlarged. Price 1*s.*

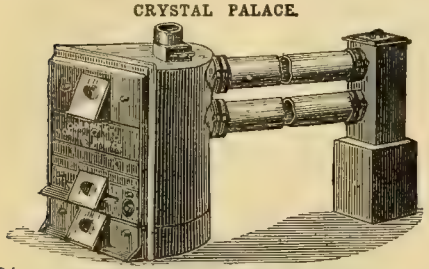
HOW TO GROW MUSHROOMS. By WILLIAM EARLEY. Price 1*s.* stitched.

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London: BRADBURY, AGNEW, & CO., Bouverie Street, E.C.

THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS

Can be seen in action Tuesdays, Thursdays, and Saturdays, in
DEANE & CO.'S "GEM" CONSERVATORY,
Close to the Panorama in the grounds of the
CRYSTAL PALACE.



Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4 inch hot-water pipe, and patent joints complete, £4 4s.
Delivered free to any Station. Discount for cash.
This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.
It burns over 12 hours without attention at a nominal cost.
"Loughborough" Boilers to heat up to 650 ft. of 4-in. pipe, with hot-water pipe, joints, &c., always in stock.
COST OF APPARATUS FOR HOUSES OF ANY SIZE ON APPLICATION.
The measurement of Greenhouse being given, every apparatus is delivered with pipes cut and fitted ready for fixing.
Illustrated LIST with full particulars, post-free.

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STOVES.

Terra-Cotta! Portable! For Coal!

ROBERTS'S PATENT.

Pure and ample Heat 24 hours or longer for about 1*d.*, without attention. For Greenhouses, Bedrooms, or almost any purpose. Pamphlet and authenticated Testimonials sent. In use daily at Patentee's—THOMAS ROBERTS,
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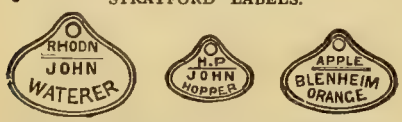
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The Best and Quickest Made.

4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4*s.* 3*d.* each; 4-in. Socket Hot-water Pipes, 9 feet long, 4*s.* 6*d.* each.
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Under the Patronage of the Queen.
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The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

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HORTICULTURAL IRON AND WIREWORKS,

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WIREWORK.	WIREWORK.	IRON and WIRE FENCING.	HOT-WATER WORK.
SUSPENDING BASKETS	ROSERIES	ORNAMENTAL GARDEN FENCING	BOILERS, VARIOUS
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Ranges, Conservatories, Greenhouses, Forcing Houses, Nurserymen's inexpensive Growing Houses, Pits, Frames, Heating Apparatus, Boilers, Summer-houses, &c.
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W. C. SMITH & CO., VICTORIA WORKS,

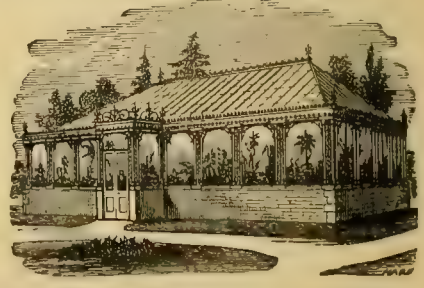
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Manufacturers of Patent Metallic Non-conducting Glass Houses.

Iron Houses are much more durable, lighter, and stronger than wood. Our system of Glazing ensures a close joint, allows for expansion, retains the heat, and prevents drip. Photographs of extensive ranges and Conservatories erected by us can be seen by arrangement.

Heating Apparatus in all its Branches.

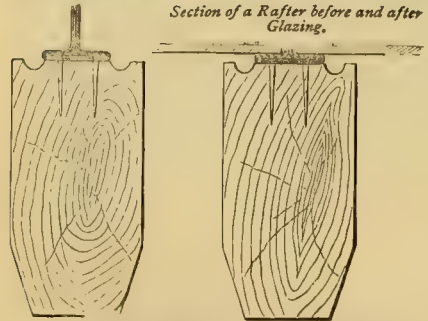
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PLANT PROTECTORS, CUCUMBER and MELON FRAMES, always in stock.
Horticultural Buildings of every description in Iron or Wood.

"SIMPLEX LEAD GLAZING."

Section of a Rafter before and after Glazing.



NO IRON, ZINC, OR PUTTY USED.

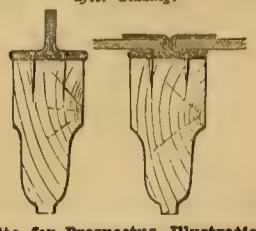
No Special Contract Required for its Adoption.

SUITABLE FOR ALMOST UNIVERSAL APPLICATION.

N.B.—The Lead Strips, which are the special feature of this System, require no Skilled Labour to fix; breakages can be repaired by any one; and ALL OUTSIDE PAINTING IS DISPENSED WITH.

SOLE MANUFACTURERS OF
THE PATENT LEAD STRIPS,

Section of a Window Sash-Bar before and after Glazing.



Write for Prospectus, Illustrations, and Testimonials.

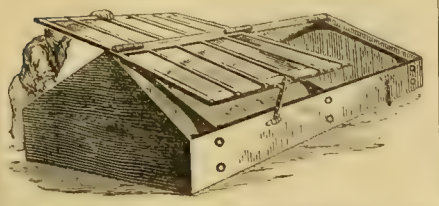
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BOULTON & PAUL, Norwich.

SEND FOR CATALOGUES.

Made of Best Wood and English 21-oz. Glass.

No. 60.—Span-roof Plant Protector.



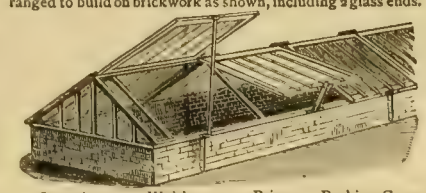
Invaluable in large gardens for protecting plants in open ground, or storing same when turned out of conservatory.

CASH PRICES, including Packing Cases.

6 feet long, 3 feet wide, including one pair of ends			£2	2 0
12 " " 3 " " " "			3	12 0
6 " " 4 " " " "			2	14 6
12 " " 4 " " " "			4	12 6
12 " " 5 " " " "			6	0 6
12 " " 6 " " " "			7	12 6

No. 64.—Span-roof Plant Frame.

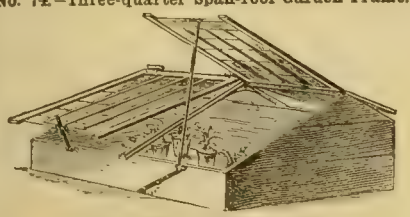
The Gardeners' favourite Frame, used for storing bedding plants in winter, and in summer for growing Melons, &c., arranged to build on brickwork as shown, including 2 glass ends.



Length.	Width.	Price.	Packing Cases.
12 feet ..	5 feet ..	£5 5 0	.. 4 6
18 " ..	5 " ..	7 5 6	.. 6 0
24 " ..	5 " ..	9 2 6	.. 7 6
30 " ..	5 " ..	11 2 6	.. 9 0
12 " ..	6 " ..	6 10 0	.. 5 0
18 " ..	6 " ..	9 0 0	.. 6 6
24 " ..	6 " ..	11 10 0	.. 8 0
30 " ..	6 " ..	14 0 0	.. 9 6

Made to any length. See Catalogue for larger sizes.

No. 74.—Three-quarter Span-roof Garden Frame.

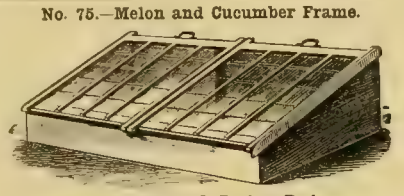


CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
No 2 ..	8 feet ..	6 feet ..	£4 15 0	.. 5 6
No. 3 ..	12 " ..	6 " ..	6 10 0	.. 6 6
No. 4 ..	16 " ..	6 " ..	8 5 0	.. 8 0

Height in front, 11 inches, back 22 inches, centre 32 inches. Lights made to turn over. Set-opes for ventilating.

No. 75.—Melon and Cucumber Frame.



CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
No. 2 ..	8 feet ..	6 feet ..	£3 7 6	.. 3 6
No. 3 ..	12 " ..	6 " ..	4 17 6	.. 4 0
No 4 ..	16 " ..	6 " ..	6 7 6	.. 4 6

Depth in front 13 inches, back 24 inches, lights 2 inches thick, strengthened with iron rod. One handle to each light. Lights only, 6 ft. × 4 ft., unglazed and unpainted, 6s. each. Glazed with 21-oz. sheet glass and painted 4 coats, 16s. each.

Wood for the Frames 1¼ inch thick.

All the Frames painted four coats and glazed with best 21-oz. English Glass.

All these Frames carriage paid to any Railway Station in England and Wales, also to Edinburgh and Dublin. Packing Cases allowed for in full if returned within fourteen days in good order and duly advised.

HORTICULTURAL STRUCTURES of EVERY DESCRIPTION, in EITHER WOOD or IRON, or BOTH COMBINED.

WOODEN CHAPELS, SHOOTING LODGES, COTTAGES, TENNIS COURTS, VERANDAHS, &c.

Orders for shipment carefully fitted and packed, and delivered f.o.b. Glasgow. Illustrated Circulars post-free. Complete Catalogue, 3s.

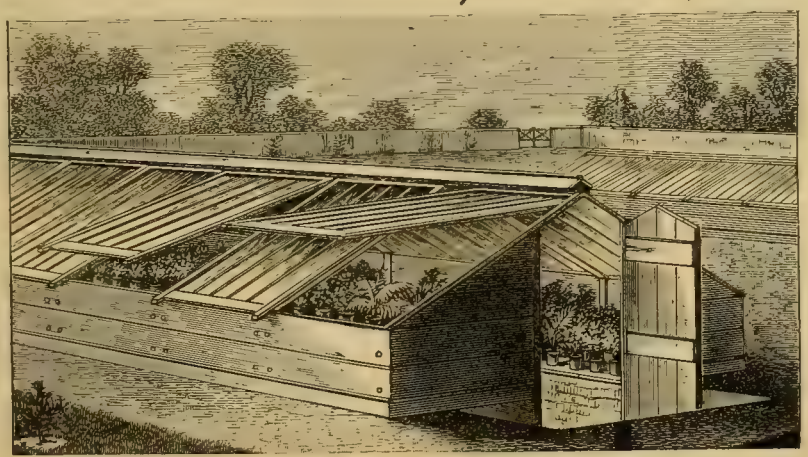


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FOSTER & PEARSON, BEESTON, NOTTS.

NEW IMPROVED SPAN MOVABLE FRAME.



PRICE LISTS on application. CATALOGUES, 1s. each. Established 1841.



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Horticultural Engineers to Her Majesty the Queen,

CALL SPECIAL ATTENTION TO THEIR

PATENT WROUGHT-IRON TUBULAR HOT-WATER BOILERS,

And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

SADDLE BOILERS,

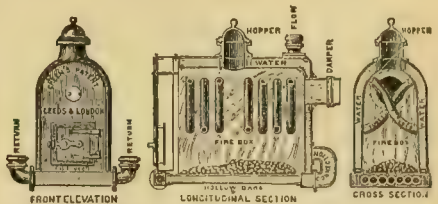
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3, 1881.



The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

Descriptive Illustrated Price List may be had free on application.

Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice. Galvanized Iron Cisterns, from 4*d.* to 1*s.* 6*d.* per gallon.

WRIGHT'S "CHAMPION" ENDLESS-FLAME-IMPACT BOILERS,

admitted by the entire Trade, after Public and formal challenges, to be *the most economical of fuel, the most powerful, the simplest,* and *the cheapest* in the Trade. Price Lists and particulars from

WRIGHT'S BOILER CO., AIRDRIE, N.B.

THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler. Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.

	Long.	Price of Boiler and Heat of 4-in. Pipe. Fittings.
A,	19 in.	150 feet £5 10 0
B,	22 in.	300 " 6 15 0
C,	24 in.	400 " 8 5 0
D,	26 in.	500 " 9 10 0
E,	28 in.	600 " 10 15 0
F,	32 in.	700 " 12 5 0
G,	36 in.	850 " 13 15 0
H,	42 in.	1000 " 15 10 0
I,	48 in.	1250 " 17 5 0
J,	54 in.	1600 " 19 10 0
K,	60 in.	2000 " 22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c

Says a Gardener of great experience:—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite."

Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.

FOR SMALL CONSERVATORIES

for Heating from 50 to 100 feet of pipe.

An Independent Boiler, with furnace front, doors, fire bars and dead plate complete, and 6 feet of funnel. This is called the "LITTLE WONDER." It is fixed in the end or side wall of conservatory by any bricklayer: the funnel running up just outside the glass. It can be applied almost everywhere. It will keep in all night. It is worthy of its name. Price complete, 50 feet size, £4 15: 100 feet size, £5 15s.

If cheque is enclosed with order 5 per Cent. discount may be deducted, if not, reference to Banker required.

LANKESTER & SONS,

Horticultural Heating Engineers, Southampton.

We send capable men to fix work in all parts of the Kingdom. Estimates given. Drawings of Patent and Special Appliances for Heating Dwelling Houses and Churches sent on application.

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7	,,	..	..	0	4	6	18	,,	..	..	0 10 0
8	,,	..	..	0	5	0	19	,,	..	..	0 10 6
9	,,	..	..	0	5	6	20	,,	..	..	0 11 0
10	,,	..	..	0	6	0	21	,,	..	..	0 11 6
11	,,	..	..	0	6	6	22	,,	..	..	0 12 0
12	,,	..	..	0	7	0	23	,,	..	..	0 12 6
13	,,	..	..	0	7	6	24	,,	..	..	0 13 0
14	,,	..	..	0	8	0	25	,,	..	..	0 13 6

AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across columns, the lowest charge will be 30*s.*

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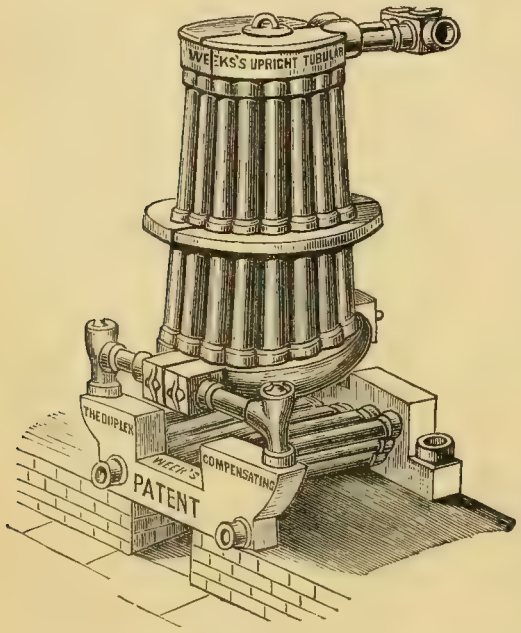
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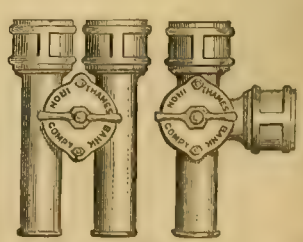
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 4, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co. Edinburgh and Glasgow

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 563.—Vol. XXII. {New Series.} SATURDAY, OCTOBER 11, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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THE GARDENERS' CHRONICLE IN AMERICA.

The Subscription to America, including Postage, is $6.35 for Twelve Months.

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ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

NOTICE !—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., on TUESDAY NEXT, October 14, in the Conservatory.

FRUIT and VEGETABLE SHOW, OCTOBER 14, 15, and 16, and Competition for Prizes offered by Messrs. J. C. Wheeler & Sons.

N.B.—Exhibitors' Entrance, West side of Royal Albert Hall.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

EXHIBITION of FRUIT (Pears and Apples) and POTATOS, in connection with the International Health Exhibition, in the Conservatory, on TUESDAY, WEDNESDAY, and THURSDAY, October 14, 15, and 16.

N.B. Exhibitors' entrance, West side of Royal Albert Hall.

ROYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER.

CHRYSANTHEMUM SHOW in the Town Hall, Manchester, on TUESDAY, November 18 next. For Schedules apply to the undersigned,

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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

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FLOWERING ORCHIDS, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, a COLLECTION of ORCHIDS in Flower and Bud; also 47 Vanda Hookerii, 10 Aerides Houlletianum, and 26 Calanthe Regnieri.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6746.)
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MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, at half past 12 o'Clock precisely, about 150 lots of ESTABLISHED ORCHIDS, including Cattleya Holfordii, Phalænopsis Lowii, P. Stuartiana, scuticaria, Steelei; Oncidium Lanceanum, Dendrobium Ainsworthii, Coryanthes macrantha, Lælia Perrinii, Barkeria cyclotella, Oncidium ceboletta, Cattleya citrina, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6746.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, by order of Mr. F. Sander, extra fine importations of CATTLEYAS, ONCIDIUMS, CALANTHES, GALEANDRAS, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6746.)
TREE FERNS from NEW ZEALAND.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, a consignment of TREE and other FERNS, just received from New Zealand in fine condition.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6746.)
IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 16, by order of Messrs. Shuttleworth, Carder & Co., Importations of MASDEVALLIA HARRYANA, in full leaf and splendid condition; ODONTOGLOSSUM CRISPUM (Alexandræ), CATTLEYA MENDELI, C. GIGAS, C. CITRINA; LÆLIA ANCEPS, PILUMNA FRAGRANS var. NOBILIS, and COMPARETTIA MACROPLECTRON.
On view morning of Sale, and Catalogues had.

Sales Every Monday, Thursday, and Saturday.
DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.
On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
UNRESERVED SALE of a small but well-grown COLLECTION of ESTABLISHED ORCHIDS, the property of J. Baglay, Esq., of Knottingley.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, October 14, at half-past 12 o'Clock precisely, including ODONTOGLOSSUM ALEXANDRÆ and PESCATOREI (several plants), O. MADRENSE, BLUNTI, AURANTIACA, VEXILLARIUM, CONSTRICTUM, &c.; DENDROBIUM FARMERI and FARMERI ROSEA, D. FIMBRIATA OCULATA SUPERBA, MAGNIFICA, WARDIANUM, &c.; ONCIDIUM PETOLUM, WALTONI VISCOSUM, CATTLEYA PERINII, SKINNERI SUPERBA; LÆLIA ELEGANS, ANCEPS SUPERBA, and BARKERI; CYMBIDIUM EBURNEUM, PERISTERIA ELATA, &c.
On view morning of Sale, and Catalogues had.

Tuesday Next.—Imported Orchids.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, October 14, a small importation, in fine condition, of the very pretty and free-flowering yellow CATTLEYA HOLFORDI; also Imported ORCHIDS from Messrs. Shuttleworth, Carder & Co., comprising Masdevallia Harryana, Odontoglossum Alexandræ, Cattleya Mendeli, C. citrina, C. gigas, and others.
On view morning of Sale, and Catalogues had.

Chigwell.—Without Reserve.
CLEARANCE SALE of VALUABLE GREENHOUSE and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Olantigh Nursery, Pudding Lane, Chigwell (two miles from Chigwell Lane Station), on WEDNESDAY, October 15, at 2 o'Clock precisely, without reserve, the whole of the valuable STOVE and GREENHOUSE PLANTS, including 800 Licuala gratissima, 500 Maidenhair Ferns, Asparagus plumosa, Stephanotis, choice Palms, the entire stock of the double white Lapageria, also L. rosea superba, Gardenias, Azaleas, Tea Roses, a quantity of Shrubs, WHEELBARROWS, and other UTENSILS.
May be viewed the day prior to the Sale. Catalogues may be had on the Premises, at the principal local Inns, and of the Auctioneers, 67 and 68 Cheapside, London, E.C.

Wednesday Next.
300 CAMELLIAS, AZALEAS, and other PLANTS from Belgium; a fine Assortment of choice FERNS, PALMS, and DECORATIVE PLANTS from English Nurseries, some in bloom; together with about 300 lots of HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 15, at half-past 12 o'Clock precisely.
On view morning of Sale, and Catalogues had.

Wednesday Next.—Hampton, Middlesex.
About fifteen minutes' walk from Hampton or Fulwell Stations.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Osborn Nursery, Hampton, on WEDNESDAY, October 15, by order of Mr. Will. Tayler, at 12 o'Clock precisely, 75,000 fine SEAKALE for forcing, 400 VINES in pots, 2000 FRUIT TREES, 800 standard Victoria PLUMS, Pyramid FRUIT TREES in pots, 12,000 Dwarf ROSES of the finest sorts, in lots to suit the Trade and large buyers.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Thursday Next.—Lower Norwood, S.E.
ANNUAL SALE of CHOICE ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Henry James to SELL by AUCTION, on the Premises, The Castle Nursery, Lower Norwood, S.E., about two minutes' walk from the Station, on THURSDAY NEXT, October 16, at 12 o'Clock precisely, a selection of about 150 lots of beautifully-grown ESTABLISHED ORCHIDS, clean healthy plants, including a fine lot of Odontoglossums and rare Masdevallias, Odontoglossum grande magnifica, O. pardinum (true species), Cattleyas and Phalænopsis, Oncidium nigratum (new), certificated 1883; O. sessile (scarce), and others; an assortment of young and clean-grown STOVE and GREENHOUSE PLANTS, Specimen CAMELLIAS, AZALEAS, LAPAGERIAS, Tree CARNATIONS, a variety of ORNAMENTAL TREES and SHRUBS, FRUIT TREES, and OTHER STOCK.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Dorking.
CLEARANCE SALE of thriving young NURSERY STOCK, the land being required immediately by the Burial Board for the extension of the Cemetery.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Ivery & Son to SELL by AUCTION, without reserve, at the branch Nursery known as the Cemetery Nursery, Reigate Road, Dorking, ten minutes' walk from the town, and about the same distance from the Box Hill and Dorking Stations, on THURSDAY, October 16, at 12 o'Clock to the minute (in consequence of the number of lots) the whole of the well grown NURSERY STOCK, comprising 6000 fine Laurels, 1 to 3 feet; 1000 Box, 1 to 3 feet; 600 Aucubas, 1 to 2 feet; 1000 Portugal Laurels, 3000 Privet, 2 to 3 feet; a quantity of Austrian, Weymouth and other Pines, Irish and other Yews, Deciduous Shrubs in variety 400 fine Limes, Planes, Poplars, Catalpas, and other ornamental Trees, also a quantity of Pyramid and Dwarf-trained Fruit Trees, together with some large specimen CAMELLIAS, smaller ditto, and AZALEAS.
The stock may now be viewed. Catalogues had of Messrs. J. IVERY AND SON at either of their Dorking or Reigate Establishments; and of the Auctioneers' and Valuers at their Central Sale Rooms and Offices, 67 and 68, Cheapside E.C.

Wimbledon, S.W.
A few minutes' walk from the railway station, whence goods may be transmitted to all parts.
HIGHLY IMPORTANT FOUR DAYS' SALE of beautifully-grown NURSERY STOCK, by order of Messrs. D. S. Thompson & Son, in consequence of the expiration of the Lease of a portion of the Home Nursery.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Nurseries, Wimbledon, S.W., on MONDAY, October 20, and three following days, at 12 o'Clock precisely each day, several Acres of remarkably well-grown NURSERY STOCK, including 7000 Laurels, 1½ to 3½ feet; 10,000 oval-leaved Privet, fine bushy plants, 2 to 4 feet; 8000 Berberis Aquifolia, 1 to 2 feet; 1800 green Euonymus, 3000 Aucuba japonica, 1 to 2½ feet; 3000 Deciduous Shrubs, in variety; Portugal Laurels, green Hollies, English Yews, Planes, Limes, Poplars, Standard Thorns, and other Ornamental Trees, 4000 Standard and Half-standard Roses, 10,000 Fruit Trees, consisting of Standard and Pyramid Pears and Plums, Standard Victoria Plums, Horizontal and Dwarf-trained Apples and Pears, Dwarf-trained Peaches, Nectarines, and Apricots, fine Gooseberries and Currants, Orchard-house Trees in pots, and other stock.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, E.C.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of FLOWERING ORCHIDS will take place on TUESDAY, October 28, and they will be glad to receive notice of entries in the course of the ensuing week.
67 and 68, Cheapside, E.C.

Fifth and Final Great Clearance Sale, by order of Messrs. Ewing & Co., who have discontinued their business at Eaton, near Norwich, the Land having now been Sold. Highly important Sale of the Fifth Portion of the extensive, well-grown, and thriving young NURSERY STOCK, in excellent condition, comprising 10,000 Roses of the choicest exhibition kinds of Teas, Noisettes, and Hybrid Perpetuals, &c., in and out of pots. Many thousand Fruit Trees, Bushes, Raspberry Canes and Culinary Roots, Nut and Filbert Bushes, &c. 100,000 Ornamental and Forest Trees, many of them of suitable sizes to produce immediate effect—clean, stout, and well rooted, having been frequently transplanted and skilfully pruned. A large quantity of Deciduous Flowering Shrubs. 1000 Clematises, in choicest and newest variety; also some Evergreens and Conifers, and a large stock of Ivies and other Climbers, both in and out of pots.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich, on WEDNESDAY and THURSDAY, October 29 and 30, at 12 o'Clock precisely each day. Many of the Lots are large, and therefore specially adapted to the wants of extensive purchasers.
May now be viewed. Catalogues on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Hendon, N.W.
Close to the Railway Station.
SALE of UNUSUALLY WELL GROWN STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr J. H. Pounce to SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., on WEDNESDAY, October 29, at 12 o'Clock precisely, a large quantity of unusually well grown STOVE and GREENHOUSE PLANTS, 500 specimen Ferns, 5 000 smaller ditto; a quantity of Eucharis amazonica in large pots, 1000 Bouvardias of sorts, 4000 Carnations of the finest varieties, including the best new whites; 250 pot Roses in 32 and 48 pots; 2000 fine Standard and Dwarf Roses, comprising all the best sorts; a choice collection of Single and Double Dahlias, and other Stock.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

The Vale Nursery Grounds, opposite Paulton Square, King's Road, Chelsea, W.—On view.
To Florists, Nurserymen, Market Gardeners, and Others.

MR. W. S. LYON has received instructions from the proprietor, Mr. Brett (to clear the grounds) to SELL by AUCTION, as above, on TUESDAY, October 14, at 1 P.M., the whole of the growing TREES, SHRUBS, and PLANTS, with a Stephanotis floribunda in tub as trained to roof of greenhouse; erection of Twelve GREENHOUSES, with new saddle BOILER, steam PIPES, and FLUES; eleven long Pits and Lights, three erections of tiled potting SHEDS, 500-gallon strong slate TANK; and TANKS, POTS, BARROWS, TUBS, TOOLS, &c. A strong active chestnut MARE, HARNESS, close body spring VAN, and rubbish CART, WAGGONETTE (with pole, bar, and shafts), with patent brake and cushions, in capital order. A black MARE, quiet in harness, six years old
On view day previous and morning of Sale. Catalogues on the ground, and of the Auctioneer, at his offices, 13, Elm Park Terrace, Fulham Road, S.W.

Lynton House, near Elms Rd, Clapham Common, S.W.
STOVE and GREENHOUSE PLANTS.—Early Sale of Surplus Stock, without reserve.—Fine specimen Camellias, splendid large Eucharis, just coming into flower; large Azaleas; a handsome Fern, Davallia Mooreana, 8 feet through; Orchids, &c. By order of Mrs. Perrett, on the Premises.

MESSRS. PEED AND GREAVES, HORTICULTURAL AUCTIONEERS, Loughborough Road, Brixton, S.W., have been favoured with instructions to SELL by AUCTION, the above valuable lots, on WEDNESDAY, October 15, at 3 o'Clock prompt.
On view one week before the Sale by application to the GARDENER, down the Lane side of Premises. Catalogue of the Auctioneers post-free.

Knutsford, Cheshire.
IMPORTANT SALE of NURSERY STOCK, consisting of fine Pyramidal Specimen Coniferæ of all sizes, many from 6 to 12 feet high, and 3 to 6 feet through, including Thujopsis, Thuias, Pinus, Cedrus, Araucarias, Abies, Juniperus, Silver and other Hollies, 6 to 12 feet; Golden Yews, Retinosporas, &c.; large quantities of 2 to 5 feet sizes of Pinus, Cupressus, Thujopsis, Cryptomerias, 300 Retinospora plumosa, 100 Retinospora plumosa aurea, 50 Retinospora squarrosa, 1000 Rhododendrons, good bushes, 2 to 3 feet; 1000 Green Hollies, 300 Aucuba japonica, 300 Mahonia Aquifolium, 1000 Dwarf Hybrid Perpetual Roses, 200 Tea Roses, 300 Standard Roses, large quantities of common Colchic, caucasicum and Portugal Laurels; 1000 Apples, 1000 Pears, 20,000 strong Thorn Quicks, several thousand Oval-leaved Privets, 2 to 3 feet; 500 Scarlet and Fancy Thorns, 500 Limes, 500 Horse Chestnuts, 300 Birch Trees, Flowering Shrubs, &c.

MESSRS. ARTINGSTALL AND HIND have received peremptory instructions from Messrs. W. G. Caldwell & Sons, to clear a quantity of land required for further use, and SELL by AUCTION, on WEDNESDAY, October 15, at their Nurseries, Knutsford, Cheshire, about 25,000 of good EVERGREENS and SHRUBS.
Catalogues may be obtained at the Nursery, or from the Auctioneers, 45, Princess Street, Manchester. On view any working day prior to sale.

Whittington Nursery, 2 miles from Lichfield,
SALE of a WELL-GROWN NURSERY STOCK, at the above widely known Nurseries, of several hundred thousands of Trees and Shrubs, consisting of Standard and Pyramid Apples, Pears, Plums, Nuts, and other Fruit Trees, an immense quantity of English Oaks, Ash, Elm, Spruce, Austrian and Laricio Pines, &c. A large variety of Deciduous and Evergreen Shrubs, together with many thousands of transplanted and well-rooted hybrids and other Rhododendrons, and a fine variety of Ivies, &c. In the Coniferæ will be found a very choice assortment of Cedrus, Cypress, Junipers, Pinus, Retinosporas, Thuias, Yews, &c.; a remarkably fine lot of Maréchal Niel, Gloire de Dijon and other Roses; together with an immense variety of Seedling and Bedding Plants.

MR. GEORGE MARSDEN will SELL the above by AUCTION, by order of Mr. Holmes, at Whittington Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, and following day if necessary, commencing at 10 o'Clock each day. Conveyances will meet all the early Trains up to 10 o'Clock each day, at the "Trent Valley" and "City" Stations, Lichfield. For the convenience of Purchasers, any lot or lots can remain on the ground until March 1, 1885.
Catalogues will be ready 14 days prior to the Sale, and can be had at the *Midland Counties Herald* Office, the place of Sale, and the Auctioneer, Wirksworth, Derby.

SEED BUSINESS for SALE, a thoroughly genuine concern, established upwards of half a century, and now for Disposal in consequence of death of Proprietor. The Premises, which are prominently situate in an important Town, comprise large Residence, Warehouse, Stabling, &c. Long lease and low rent.
A reasonable offer will be entertained to effect an immediate Sale. Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. Specially recommended.

FOR DISPOSAL, an established SEEDSMAN and FLORIST BUSINESS, with a good jobbing connection. An excellent chance for any one with a small capital.
E. C., 38, High Street, Highgate, N.

To Gardeners, Florists, &c.

FOR SALE, several acres of FREEHOLD LAND, well adapted for the above Trades; also a 6-Roomed COTTAGE, with Land suitable for the Erection of Glass Houses, within 10 minutes' of Hampton Station.
J. EMBLETON, Suffolk House, New Hampton.

To Market Growers and Florists.

For Sale at Pulling-Down Price, by order of the Mortgagees.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the whole of the GLASS ERECTIONS, measuring a total length of about 2400 feet, with the LEASE of about eleven years unexpired, 4¼ acres of LAND and COTTAGE. Rent £45. Price for the Glass on application at Messrs. PROTHEROE AND MORRIS' Offices, 67 and 68, Cheapside, E.C.

TO BE LET or SOLD, by order of the Mortgagee (no Stock to take to), the LEASEHOLD NURSERY and GLASSHOUSES at Brockley, lately occupied by E. Denson & Co. The Premises comprise large Plot of Ground, Conservatory, and long Greenhouse, divided into four compartments.

Apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO Florists and Others.—TO BE SOLD, a FLORIST'S BUSINESS. Goodwill a bargain. Rent £50. Splendid opportunity.—PIPER & SON, Auctioneers, Worthing.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Lily of the Valley.—Strong German Crowns.

WILLIAM DENMAN, SALESMAN and HORTICULTURAL AGENT, Covent Garden, W.C., will be pleased to receive Orders for the above. Large Orders executed direct from Germany.

AZALEAS, CAMELLIAS, SPIRÆAS, and numerous other stock from the best Continental Growers. Full particulars on application.

Early Orders for LILY OF THE VALLEY particularly requested.

PHEASANT-EYE NARCISSUS.—To be SOLD, cheap, the ground being let for building purposes, fine strong roots, in bunches, as dug up, 10s. per bushel, package free, for cash. Also surplus stock of fine gold FERNS, in large 60's, 8 inches high, 6s. per dozen; smaller, 3s. per dozen. POPE AND SONS, King's Norton Nurseries, near Birmingham.

TO BE SOLD, Two magnificent Variegated ALOES, 7 feet 6 inches high, 9 feet 6 inches spread. To be viewed, and price obtained, at

The Lodge, Harmondsworth, near West Drayton Station.

SEEDLING PALMS.—Seaforthia elegans and Latania borbonica, 10 inches and 12 inches high, in thumbs, 20s. per 100, good healthy English-grown stuff. Small quantity can be had as sample, 3s. per dozen.

R. COOMBS, 98, Stamford Hill, N.

TREE CARNATIONS, fine bushy plants, 12 to 18 inches high, of Miss Joliffe, Andalusia, Lady Sefton, Laura, and others, 40s. per 100. BOUVARDIAS, very strong and bushy, in 48's, all the best Double and Single kinds, 40s. per 100

W. JACKSON, Blakedown, near Kidderminster.

Prices of Alpine Plants.

CHRISTOF STEINPOCK, of Altlengbach, Lower Austria, offers:—HELLEBORUS NIGER (Christmas Roses), splendid strong roots, at 26s. per 1000; CYCLAMEN EUROPÆUM, from 12s. to 24s. per 1000; VERATRUM ALBUM, 45s. per 1000; NARCISSUS PORTICUS, 13s. per 1000; LEUCOJUM VERNUM, 13s. per 1000; 20 assorted FERNS, in a collection of the most saleable sorts, highly ornamental, 80s. per 1000.

ROSES.—ROSES.—ROSES.—Forty choice Perpetuals sent on receipt of remittance for 21s.: purchaser's selection from 300 best varieties. List of names on application. Twenty choice Standards, or Half-standards, 21s. JAS. WALTERS, Mount Radford Nursery, Exeter, Devon.

New Pernettyas.

L. T. DAVIS' LIST of his New Varieties of PERNETTYA MUCRONATA for the present Season is now ready, and may be had on application. The plants are finely berried. Early Orders are requested.

Ogle's Grove Nursery, Hillsborough, Co. Down.

To the Trade, Market Growers, and Others

FOR SALE, 40 SPECIMEN EUCHARIS AMAZONICA, in No. 6 and 8 pots; and 400 ADIANTUM CUNEATUM, large plants, in 24's, in splendid condition. Anply to

The GARDENER, Oakwood, Crayford, Kent.

ED. PARRÉ, NURSERYMAN, Ghent, Belgium, offers the following:—

SPIRÆA JAPONICA, very strong clumps, 8s. and 10s. per 100

SPIRÆA PALMATA, a stock of 3000 plants, at 10s. per 100, very strong clumps.

AZALEA INDICA, RHODODENDRONS, LILY OF THE VALLEY, AZALEA MOLLIS, FICUS ELASTICA, PALMS, &c.

CATALOGUE sent post-free to any part of the world.

HOUSE'S "PERFECT MARROW" PEAS can be obtained from the following Firms:—

Messrs. HURST AND SON, 152, Houndsditch, London, E.
" NUTTING AND SONS, 60, Barbican, London, E.C.
" HOWCROFT AND WATKINS, 14, Tavistock Row, Covent Garden, W.C.
" BARR AND SON, 12, King Street, Covent Garden, W.C.
" J. R. PEARSON AND SONS, 2, Exchange Row, Nottingham.
" DICK RADCLYFFE AND CO., 128 and 129, High Holborn, W.C.
" JAMES VEITCH AND SON, King's Road, Chelsea, S.W.
" HY. CLARK AND SONS, 39, King Street, Covent Garden, W.C.
" CHAS. TURNER, Slough.
" DANIELS BROS., Norwich.
" CHAS. SHARPE AND CO., Seed Warehouse, Sleaford.
" LANE AND MARTIN, 227, Brixton Road, London, S.W.

Retail, price 1s. per half-pint packet. Wholesale price on application to

J. HOUSE, Seed Store, Peterborough.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN that an ADDITION will be made to the LIST of PENSIONERS of this Institution in JANUARY NEXT.

All persons desirous of becoming Candidates are requested to send in their applications and testimonials to the Committee, on or before the 10th November next, after which day they will not be received.

Preference (in accordance with Rule No. 61) will be given to those applicants who have been Subscribers for Fifteen Years and upwards, or their Widows. Should there not be sufficient of this class of candidates to fill the Vacancies, then the applications of those who have not subscribed so long, or not at all, will be considered.

Printed Forms of Application may be obtained from the Secretary.—By order,

E. ROGER CUTLER, Sec.

14, Tavistock Row, London, W.C.—October 9, 1884.

To the Trade.—Offered by

HUGH LOW AND CO.

ACACIA ARMATA, well budded, 9s., 12s. per doz.
ARECA LUTESCENS, 48-pots, 18s. per doz.
" RUBRA, graceful Palm, 1 foot, 10s., 15s. per 100. 9p. doz.
ADIANTUM CUNEATUM, 48-pots, 9s., 12s.; 32-pots, 18s.
" GRACILLIMA, extra size, 32-pots, 12s., 15s. per doz.
AZALEA INDICA, well-budded, 12s., 15s., 18s., 24s., 30s doz.
" " ALBA, old white, 100s., 125s. per 100.
BOUVARDIA, white, in flower and bud, 12s., 18s. per doz.
CAMELLIAS, well budded, 21s., 24s., 30s. per doz.
" double white, forward buds, will bloom early, 24s. per doz.
CARNATIONS, Tree, finely budded, 12s., 15s., 18s. per doz.
CYCLAMEN PERSICUM, finely budded, 9s., 12s. per doz.
" GIGANTEUM, finely budded, 9s., 12s. per doz.
DEUTZIA GRACILIS, extra, 20 to 30 shoots, 35s., 40s. p. 100
DOUBLE WHITE AZALEAS, 70 to 100 shoots, budded, grand for cutting, will bloom early, 60s., 84s. per doz.
DRACÆNAS, in variety, 12s., 18s., 30s. per doz.
EPACRIS, in variety, 9s., 12s per doz. [doz.
ERICA ASSURGENS, white, in flower, 9s., 12s., 18s., 21s. per
" CAFFRA, finely budded, 9s., 15s., 18s per doz.
" CERINTHOIDES, scarlet, in flower, 18s. per doz.
" COLORANS, in flower and bud, 9s., 12s. per doz.
" GRACILIS, in flower and bud, 9s., 12s., 18s., 24s. p. doz.
" HYEMALIS, well budded, 9s., 12s., 15s., 24s., 3 s. p. doz.
EUCHARIS CANDIDA, 50s., 75s. per 100.
" SANDERIANA, 50s., 75s. per 100.
FERNS, in variety, 48-pots, 60s. per 100.
FICUS ELASTICUS, fine, 21s., 24s., 30s. per doz.
GARDENIA INTERMEDIA, grand, well budded and in flower, 24s., 30s., 42s. per doz.
" RADICANS, well budded and in flower, 9s., 12s. per doz.; 60s., 80s. per 100.
GENISTAS, very fine, 8s., 10s., 12s. per doz.
GOLDEN EUONYMUS, fine for pots, 42s., 60s., 75s. per 100.
GREVILLEA ROBUSTA, 50s., 75s. per 100. [18s. doz.
JASMINUM GRANDIFLORUM, in flower, fine, 12s.,
" GRACILLIMA, strong, in bud, 18s. per doz.
KENTIAS, 48-pots, 24s., 30s. per doz.
LATANIA BORBONICA, splendid plants, 18s., 24s., 42s. doz.
LAURUSTINUS, French white, well budded, 12s., 18s. doz.
ODONTOGLOSSUM ALEXANDRÆ, 100s. per 100.
" PESCATOREI, 100s. per 100.
PAMPAS-GRASS, fine plants, in pots, 10s. to 40s. per 100.
PTYCHOSPERMA ALEXANDRÆ, fine plants, 12s., 18s. doz.
RHODODENDRON PRINCESS ALEXANDRA, 9s., 12s. per doz.
" PRINCESS ROYAL, 9s., 12s. per doz.
ROSE WHITE PET, in pots, in bud, 9s. per doz.
SEAFORTHIA ELEGANS, 48-pots, 12s. per doz.
SOLANUMS, well berried, 9s., 12s. per doz

Clapton Nursery, London, E.

SPECIAL CHEAP OFFER, all healthy, stout, well grown Plants:—

ALDER, 2 to 3 and 3 to 4 feet.
ASH, common, 2 to 3, 3 to 4, 4 to 5, and 5 to 6 feet.
BIRCH, 2 to 3 and 3 to 4 feet.
ELM, Wych, 2 to 3 and 3 to 4 feet.
" English, 2 to 3 and 3 to 4 feet.
MAPLE, English, 3 to 4 and 4 to 5 feet.
OAK, English, 1½ to 2 and 2 to 3 feet.
PINE, Austrian, 1, 2, 3, and 4 feet, fine.
POPLARS, American, 3 to 10 feet.
" Black Italian, 3 to 10 feet.
" Balsam, 3 to 10 feet.
" Lombardy, 3 to 10 feet.
PRIVET, Evergreen, 2 to 4 feet; ovalifolium, 1½ to 3 feet.
THORN QUICK, strong, 2 to 4 feet.
SYCAMORES, 2½ to 5 feet.
BERBERIS AQUIFOLIA, 1½ to 2 feet.
CUPRESSUS ERECTA, 2 to 4 feet.
" LAWSONIANA, 6 to 9 feet.
CURRANTS (Ribes), GOLDEN ELDER.
HOLLY, Common, 2 to 5 feet.
" Hodgins', maderensis, and other varieties, from 2 to 9 feet.
" Silver-striped, 6 feet.
IVY, Irish, in pots; and all other leading varieties of Ivy in pots.
LABURNUMS, English, 2 to 7 feet.
LAURELS, in variety, 2 to 3 feet.
LILACS, in variety.
RETINOSPORA PLUMOSA and PISIFERA.
YEWS, English, 2 to 4 feet, very fine.
" elegantissima, 2 to 4 feet.
AZALEA PONTICA, 1 to 3 feet.
RHODODENDRONS, in all the leading varieties; ditto Seedlings.
" Hybrids and Ponticums, from 4 to 6 inches to 3 feet.
PRIMROSES, Double, Yellow and White.

For price and particulars apply to

ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent.

CATALOGUES gratis and post-free.

Sweet Winter Flowers.

VIOLETS—VIOLETS.—Now is the time to plant for winter. Large clumps full of flower, specially grown for winter flowering.

Doubles.	*Singles.*
Belle de Chatenay,	Argentæflora,
Blandyanum,	Neapolitan,
Marie Louise,	Odoratissima,
Neapolitan,	Victoria Regina,
Patrie,	The Czar,
Princess Marie de Savoy,	White Czar,

6s. per dozen, 40s. per 100.

Comte Braza's New Double White Neapolitan, 18s. per dozen.

One of each, package free, 7s. 6d.

Usual Trade Discount.

FRED. PERKINS, Nurseryman, Regent Street, Leamington. Nurseries, Old Kenilworth Road, and Lillington Avenue.

DUTCH BULBS.

DIRECT FROM THE GROWERS.

ANT. ROOZEN & SON'S

CHOICE FLOWER-ROOTS.

OUR GUINEA PACKAGES

OF CHOICE HARDY FLOWER-ROOTS for Indoor and Spring Gardening, have been much enlarged, and contain as under:—

COLLECTION "F," FOR SPRING GARDENING, CONTAINING 900 BULBS.

36 Hyacinths, distinct colours	400 Crocus, in 4 distinct colours
50 Tulips, single early	50 Ranunculus, double
50 Tulips, double	36 Gladiolus
25 Tulips, single late	50 Snowdrops (single)
20 Narcissus, Polyanthus	25 Spanish Iris
30 Narcissus, incomparable	25 Tritelcia uniflora
24 Narcissus, Poeticus	25 Scilla hyacinthoides
50 Anemones, double	4 Lilium candidum

COLLECTION "C," FOR INDOOR.

CONTAINING 277 Choice BULBS for POTS and GLASSES.

Hyacinths, 18 in 18 splendid named varieties	Narcissus, double and single – 12 in 4 named varieties
3 Roman Hyacinths	Jonquils—
Tulips, single early—	6 Double, sweet-scented
12 in 4 fine named varieties	6 Single, " "
6 Duc van Thol, red & yellow	12 Scilla sibirica (praecox)
6 " " scarlet	12 Choice Ixias
Tulips, double early—	12 " Sparaxis
6 La Candeur, pure white	12 " Oxalis
6 Rex Rubrorum, fine crimson	12 Grape Hyacinths (H. botryoides)
6 Tournesol	6 Eranthis hyemalis
Crocus—	6 Snowdrops
100 in 10 fine named varieties	6 Iris Pavonia
Narcissus, Polyanthus—	
12 in 4 finest named varieties	

HALF OF EITHER OF THE ABOVE FOR 10s. 6d.

The above Packages may be had from our Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., on receipt of cheque or Post-office Order.

For particulars of our other Collections of bulbs for INDOOR and SPRING GARDENING, see our complete and revised Catalogue for 1884, which will be sent, post-free, on application to our Agents, or ourselves direct.

ANT. ROOZEN AND SON, Nurserymen, Overveen, near Haarlem, Holland.

1884.—New Bulb Catalogues.—1884.

MY TWO NEW

BULB CATALOGUES

ARE NOW READY.

One is devoted exclusively to NARCISSUS and LILIES, and includes all the best of these popular families. The A B C Bulb Guide consists of HYACINTHS, TULIPS, CROCUS, GLADIOLUS, IRIS, HELLEBORES, &c., and a quantity of CHOICE MISCELLANEOUS BULBS.

Copies will be Posted upon application.

THOMAS S. WARE,

HALE FARM NURSERY, TOTTENHAM, LONDON.

Probably the Best and Cheapest Offer of

AZALEA MOLLIS.

30,000 left for Sale.

8 *to* 12 *Buds*, £1 10s.; 10 *to* 15 *Buds*, £1 15s.

O. BURVENICH DE WINNE,

ROSE and PALM NURSERY, GENTBRUGGE.

FLOWERS AT CHRISTMAS.

BULBS FOR EARLY FORCING

OFFERED BY

HOOPER & CO.,

COVENT GARDEN, LONDON, W.C.

FINEST QUALITY. LOWEST PRICES.

	Per doz. s. d.	Per 100 s. d.
HYACINTHS, White Roman	2 0	15 0
" White Italian, stronger growth, a week later	2 0	15 0
" Blue Roman, pretty colour	1 6	10 6
" Double, pale rose Italian—this forces white: a lovely variety	2 0	15 0
" deep rose Italian, charming ..	2 6	18 0
NARCISSUS, Double Roman, with yellow intermixed	2 0	12 6
" Paper-White, pure white, lovely ..	1 9	10 6
" Stella, very large white, with yellow cup, new	3 6	25 0
" (Corbularia) citrina, pale lemon, a lovely frilled cup	7 0	55 0
JONQUILS, sweet scented, yellow, single	1 0	6 6
" " " double	2 0	12 6
TULIPS, Duc van Thol, red and yellow ..	1 0	6 6
" " " plain scarlet	1 0	5 6
LILIUM HARRISI, white trumpet, the grandest of all	15 0	100 0
" CANDIDUM, the White Lily ..	3 6	21 0
TUBEROSES, Double White African, splendid	4 6	30 0

All ready for immediate delivery. 5s. worth and upwards Carriage Free.

HOOPER'S BULB CATALOGUE, illustrated in colours, &c., is now ready. The bulbs are splendid, the prices extremely low.

B U L B S.

Illustrated Priced CATALOGUE of Hyacinths, Tulips, and other Bulbs, containing the best of everything and low in price, may be had Post-free on application to

WM. PAUL & SON,

PAUL'S NURSERIES,
WALTHAM CROSS.

NEW PLANTS.

CALOCHORTI, CARNIVOROUS PLANTS, GLADIOLI, Hardy FERNS and ORCHIDS, Hardy NORTH AMERICAN PLANTS in great variety, IRIS, Japanese MAPLES, LILIES, NARCISSI, ORCHIDS, Filmy FERNS, NEW ZEALAND SEEDS, Rare MOSSES, BULBS for Forcing. See our LIST No. 71, just issued.
NEW PLANT AND BULB COMPANY, Lion Walk, Colchester.

BULBOUS FLOWER ROOTS

A VERY EXTENSIVE & VERY SUPERIOR STOCK

EMBRACING HYACINTHS LILIES CROCUS TULIPS &c

IN MOST CASES
FREE BY POST OR RAIL
PRICE CATALOGUE POST FREE

JAMES DICKSON & SONS
"NEWTON" NURSERIES CHESTER
108 EASTGATE ST

JAPANESE PLANTS, &c.

Messrs. HAYASHI & CO.,

OF
MOTOMACHI, KOBE, JAPAN,

beg to inform Collectors and the Trade that they have opened a London Order-office at

24, Wellington St., Covent Garden, W.C.,

for the Sale of Plants, &c., grown in their gardens in Japan, and are prepared to offer the following Collections to Lovers of Rare Plants:

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JAPANESE LILIES—A Collection for £10, consisting of

3 doz.	L. auratum	or at	8s., 12s. & 16s.	per doz.
1 „	L. cordifolium	„	24s. and 36s.	„
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A Collection for £10, consisting of

Fifty JAPANESE MAPLES, forty different varieties, and including six of our celebrated grafted plants, containing three to seven sorts on one stem. All hardy varieties.

Or at 48s. per dozen; Grafted, 96s. per dozen.

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Collection of 12 rare vars. of Japanese Iris,
Two of each sort, 30s.

Any JAPANESE SEEDS, PLANTS, &c., obtained, to order, direct from our Nurseries.
Speciality of Miniature Firs and Cedars.

Free delivered to any Railway Station in England. Orders now booked for Collections to arrive in December and January. Early application necessary. Terms:—Cash on delivery. All Bulbs and Plants guaranteed true to name and in good condition.

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STRONG, HEALTHY, AND FULL OF BLOOM.

ACACIAS, 18s. to 30s. per dozen.
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ERICAS, HYEMALIS, WILMOREANA, CAFFRA, GRACILIS, AUTUMNALIS, &c., 6-inch pots 18s. to 30s. per dozen.
GARDENIAS, 18s. to 30s. per dozen.
LAPAGERIA ALBA, 7s. 6d. to 42s. each.
LAPAGERIA ROSEA, 2s. 6d. each.
LIBONIA PENRHOSIANA, 12s. to 18s. per dozen.
PIMELEAS, very fine, 30s. per dozen.
PRIMULAS, best doubles, named, 30s. to 42s. per dozen.
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TREE CARNATIONS, 5-inch pots, 24s. to 30s. per dozen.
GREVILLEA ROBUSTA, 5-inch pots, 12s. to 18s. per dozen.
FERNS, MAIDENHAIR, &c., in great variety; also STOVE and GREENHOUSE PLANTS.

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Gentlemen desirous of obtaining the true

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CALCOT GARDENS, READING, BERKS,
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A variety of recent introduction which is in all respects of the highest merit. Unlike most of the yellow varieties it has a free vigorous constitution and is remarkably free flowering. Market growers who have seen it are very fond of it and look upon it as being the most serviceable variety for producing cut blooms in quantity the season through. The colour is an attractive deep lemon, the flowers are large and bold.

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Half-Standards „ „ „ .. 15s. „ 18s.
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Vigorous growth, well-rooted, unequalled quality.
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The WHITE Jackman's Clematis,

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FRUIT TREES FOR SALE, in quantities.

Favourite Cluster DAMSON, standard and half; Victoria or Dolphin PLUM, standard and half; Bush and New Orleans PLUM, standard and half; Warner's King and Stone's PLUM, standard and half; 20,000 Lad and Bob GOOSEBERRIES; 20,000 Black Naples and Red CURRANTS, COB TREES; 4000 WELLINGTONIAS, 20,000 Cluster DAMSON SPAWN, 3 to 4 feet. Terms cash with order.

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CHOICE MIXED, from single varieties, 1/- and 2/6 per packet; 5/- extra large packets; double varieties, 2/6 and 5/- per packet.
COLLECTIONS, 12 named varieties, separate, 7/6
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The Nurseries, Wandsworth Common, S.W.

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Several Acres of Nursery, containing a valuable Stock, continue to be offered at a nominal price; the lease cannot be renewed.

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RHODODENDRONS, Standard, 4000 to select from, of finest named kinds, perfect specimens, from 1½ to 5 feet through the head	105/-	10/6	31/6	5/-
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LIGUSTRUM OVALIFOLIUM, 2 to 4 feet, per 100	20/-	..	10/-	..
,, common, 1 to 2½ feet				
LAUREL, common, 1 to 3 feet				
,, caucasica, 1 to 2½ feet				
,, Portugal, 1½ to 3 feet				
MAHONIA AQUIFOLIA				
BROOM, White				
YEWS, Irish				
ROSES, Dwarf, Moss, Teas, and Climbers				
CLEMATIS, fine stuff, in great variety; Virginia Creepers, Ampelopsis Veitchii				
ILEX SHEPHERDI, a fine lot of perfect specimens, 6 to 9 feet; smaller, 1 to 3 feet.				
THUIA LOBBII, 3 to 4 feet				
RETINOSPORA AUREA, 6 to 15 inches				
CUPRESSUS ERECTA VIRIDIS, 1 to 3 feet				
WELLINGTONIA GIGANTEA, 3 to 5 feet				
MAHONIA AQUIFOLIA, 12 to 18 inches				

No reasonable offer refused, or quotations will be given.

COB NUT, Webb's, 3 to 6 feet .. 25s. per 100

Collections of SHRUBS and TREES for general planting, 2 to 6 feet high, 25s. to 75s. per 100
Extra large Fruiting APPLES, PEARS, and CHERRIES, to clear, 1s. each.
SPIRÆA PALMATA, fine forcing clumps. The largest stock in Europe, 25s. per 100.
,, JAPONICA, 1cs. 6d. per 100.
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Thousands of other things too numerous for an advertisement are on offer, and inquiries or a visit will be found very advantageous.

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Roman HYACINTHS, SNOWDROPS, and DAFFODILS at Wholesale Prices.

Imported BULBS exceptionally fine this season.

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ROCKWORK SHRUBS, all the best.
STANDARD ORNAMENTAL TREES, all the best.
HARDY CLIMBERS, a splendid collection.
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New General CATALOGUE of the above and many other things, may be had gratis and post-free on application.

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B. S. WILLIAMS begs to announce that in consequence of the hot summer his stock of the above is remarkably fine this year, and well set for flower. Early orders are solicited for the following, which are now ready for delivery:—
AZALEA INDICA in variety.
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BOUVARDIAS, leading kinds.
CAMELLIAS, leading kinds.
CYCLAMEN PERSICUM and C. PERSICUM GIGANTEUM.
EPACRIS, leading kinds.
ERICAS, leading kinds.
KALMIAS.
LILACS, Chas. X., and other leading sorts.
PRIMULA SINENSIS ALBA-PLENA.
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SOLANUMS, Williams' hybrid.
STAPHYLEA COLCHICA.
For complete List and Prices, see BULB CATALOGUE, which can be had Gratis and Post-free on application.
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The stock at the Clapton Nursery is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

HUGH LOW & CO.

very cordially and respectfully solicit an inspection by all lovers of this interesting and beautiful class of plants, whether purchasers or not.

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FOREST TREE SEEDLINGS, home grown. One million 1-year LARCH, fine; and a quantity of 1 and 2 year Scotch and SPRUCE will be sold. Moderate prices, &c., on application to
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FOR SALE, Six splendid Standard Portugal LAURELS, in tubs, stems 4 to 5 feet high and nice round heads, from 5 to 6 feet through, cheap. Also Hybrid RHODODENDRONS, all colours, mixed, grown on loam, 1½ to 2½ feet high, 3s. per 100, £12 per 1000.
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All fibrous rooted, transplanted this spring.
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Clapton Nursery, London, E.

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"WHITE NEAPOLITAN."

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A. FOULON, 32, St. Mary Axe, London, E.C.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &C.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s.; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s. 6d. per Bag.
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IN THE PRESS,

THE GARDEN ANNUAL

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It contains, among other matters, the following, viz.:—

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Price, 1s.; Post-free, 1s. 3d.

N.B.—All Advertisements and Corrections can be taken up to October 18 *next.*

37, SOUTHAMPTON STREET, COVENT GARDEN, LONDON, W.C.

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Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to 10 feet high.
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,, Waterer's splendid plants, 3, 4, 5, and 6 feet, 8 to 15 eet in circumference.
,, Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimens.
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,, new Golden Weeping, a large number of very beautiful plants.
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,, Golden, of all sizes up to 10 feet We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.
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RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands.
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JUNIPERUS VIRGINIANA GLAUCA, 3 to 5 feet
ABIES CANADENSIS, 4 to 7 feet, hundreds.
,, DOUGLASII, 3 to 5 feet, thousands
,, ,, GLAUCA, 2 to 4 feet, hundreds.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, HOOKERIANA, 3 to 5 feet.
,, PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, thousands.
,, NORDMANNIANA, 6, 7, to 10 feet.
,, PINSAPO, 6 to 10 feet, hundreds.
,, PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet.
CEDRUS DEODARA, 6 to 9 feet, hundreds.
,, LIBANI (Cedar of Lebanon), 3 to 5 feet.
THUIA OCCIDENTALIS LUTEA, 3 to 6 feet, hundreds.
THUIOPSIS BOREALIS, 3 to 5 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet, hundreds.
,, PISIFERA AUREA (true), 3 to 6 feet.
,, PLUMOSA AUREA, 3 to 5 feet.

many thousands.

Knap Hill Nursery, Woking Station, Surrey.

BULBS.

B. S. WILLIAMS'

SPECIALLY SELECTED

HYACINTHS, for Pots and Glasses.
HYACINTHS, for Beds or Borders.
TULIPS, for Pots or Bedding.
CROCUS. NARCISSUS, RANUNCULUS, ANEMONES, &c.

For Prices and further particulars, see BULB CATALOGUE, post-free on application

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UPPER HOLLOWAY, LONDON, N.

THE NEW RASPBERRY,

LORD BEACONSFIELD
(A SEEDLING).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883. Strong Canes, 15s. per dozen, £5 5s. per 100.

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FRUIT TREES and ROSES.

A large and select stock is now offered for sale.

The Illustrated and Descriptive CATALOGUE of ROSES post-free.

The Descriptive CATALOGUE of ROSES post-free.

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50,000 Double DAFFODILS.
30,000 Single DAFFODILS.
70,000 Pheasant-eyed NARCISS.
70,000 Double White Sweet-scented NARCISS.
20,000 Campernelle JONQUILS.

For Prices of above and many other varieties of Narciss, also Hyacinths, Tulips, Crocus, and all Dutch, English, and French Bulbs, see our BULB CATALOGUE, free on application.

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Special Prices for Large Quantities.

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FOR CONSERVATORY AND WINDOW DECORATION.

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Extract from the "Gardeners' Chronicle," March 1, 1884, p. 280.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 11, 1884.

LOWTHER CASTLE.

THE surname Lowther, the name of the village of Lowther, and that of the chief seat of the family of which the Earl of Lonsdale is the head, are said to be derived from the name of a stream which runs through the domain, passes beneath the walls of the Castle, winds and turns through the park, as a Westmoreland stream can, deep in its rocky channel, and quits it near the principal lodge, about a mile from Penrith, where the Lowther passes Brougham Hall, and joins the Eamont a little below the village called Eamont Bridge. The word Lowther signifies "clear water," and the family have lived on its banks and largely ruled the district, by arms, influence, or wealth, from the earliest times down to the present hour. Another, and quite as probable a derivation for their name is from the common Danish title, Lother-er, implying "fortunate honour." Why they were fortunate cannot be told here; behind good fortune there is generally great merit. How fortunate they have been is recorded in their titles and honours—as knights and Lord-Lieutenants, judges, Lord Chancellors, and M.P.'s, hundreds of years ago; and in the dizzy heights they have occupied in more recent times. Sir John Lowther, who succeeded as owner of Lowther Hall in 1675, was the thirty-first knight of the family in almost direct succession, showing what rare good fortune they had met with in regard to heirs male. He was created Baron Lowther and Viscount Lonsdale, the title of Earl following in 1784.

In all great families there are sometimes great improvers who, in prosperous and peaceful times, expend their energies and coin in works useful and delightful to their successors and their neighbourhood. John, the first Viscount, was a man of this sort. He replaced the old Hall by a new one, planted woods, such as Evelyn, his contemporary, recommended, laid out the grounds and left his enduring mark upon the whole neighbourhood by his improvements. Among all the stately places of the North, Lowther bears off the palm. There are few houses more magnificent and there are bigger parks and ten times larger gardens. There are places more costly in their creation, and more extravagant in the price of their maintenance, where you feel that at every five minutes' tick a guinea or so must be spent; where you cannot help reflecting that the splendour is greater than the comfort. But at this seat of the Lowthers, any man might live and be happy with £100,000 a year, for Nature planned the scenery and country around in her happiest mood. The first Viscount, admirable landscape gardener and planter as he was, adapted the spot for residence, while pomp and pride and vulgar art have not since spoilt it. It is the fairest seat in Westmoreland, and one more delightful can hardly be found north of the Trent.

The Viscount's house having been almost destroyed by fire, the second Earl commenced the present Castle in 1808. It stands in a park

of 700 acres, watered by streams from the high hills, richly planted with varied timber, thanks to the Viscount and his successors, in the midst of mountain scenery, and you may wander here within sight of the high peaks of the Lake country, and Ulswater may be reached in a short canter. Outside the park—

> "hills on hills, on forests forests rise;
> Spurn the low earth, and mingle with the skies."

Within is a "Garden of Eden," with red and fallow deer. Sir Robert Smirke was the architect of the Castle, and it is his *chef-d'œuvre*, the durable rose-tinted stone of which it is built giving it a singularly chaste and delicate appearance, so that it carries its years like the goddess of beauty, whom no touch of time affected. There is nothing sere about the building at present, and it wears its ornament of creepers on the south wall—the deep-stained Ampelopsis, gay Pelargoniums, Roses, and the Clematis montana and C. Jackmanni—like a new and handsome house only ten years built. This south front opens upon a noble breadth of lawn, which slopes gradually upwards till the view is closed. The deer park is beyond. The village of Lowther is on lower ground, by the side of the stream, and the little village called Newtown, outside the park on the east, where the kitchen gardens are also situated, is an assemblage of houses occupied by the forester, gardener, and others. The beautiful shrubberies and pleasure gardens, sober walks of Yew, and terrace outside all, lie on the west. The house is terraced on the north, but this great western terrace is a level walk of turf 30 yards wide, entered from a garden and running three-quarters of a mile along the edge of a limestone cliff. It bounds the shrubbery from the adjacent park, and affords a long wide walk outside the mass of shrubs and trees. There are seats at intervals, the Lowther murmurs in the valley below, loud or soft as these mountain streams will according to their humour and the quantity of water flowing through their deep channels, in fair weather or in storms. The view is charming. Helvellyn is among the distant tops; but in the foreground lies a softer scene—the cultured park—and what a poor enclosure is a park without culture, and especially without arboriculture, such as that worthy of Westmoreland, the first Viscount, so well understood! On the other side of the stream, not far distant, is the little village of Askam. Just outside the park is Lowther, the very centre of scenery which is picturesque without being too wild and irksome, for up the stream to Askam, or down to Brougham Hall, you may meet with something new and charming in woodland or grassy glade at every turn.

We have lingered in the park without due notice, perhaps, of that magnificent building for for which it was formed. Brief space remains for it. The chief entrance is from the north through an arched gateway by a porter's lodge, between which and the Castle an embattled wall branches each way, enclosing a wide space which includes a lawn and wide gravelled walks and beds of flowers. A terrace in front of the house is reached from the centre of this great court or garden, by a flight of steps 60 feet wide, the terrace itself being 100 feet wide and 500 feet long. All the proportions are in keeping and they are all grand, including the open porch in the centre of this north front, the entrance hall, staircase, and saloon. The open country which is seen from this front includes a very wide prospect. The park lies in the foreground, and a herd of butter-making cows suggests the comforts of a good residential site which cannot be perfect, however excellent it may be in other respects, unless the water is good and the pasturage well adapted for butter-making. A cassowary will probably be observed striding about outside the lodge, approaching people with a melancholy eye which seems to inquire "Why am I here?—have you a biscuit in your pocket?" Some of the family have travelled and picked up pets at the antipodes—who would not who had wealth and opportunity? Beyond the park lies Beacon Hill close to Penrith, Saddle-back, a mountain of 3048 feet, and the Scotch hills beyond. The north front is 420 feet long. Inside the house the sculpture and picture galleries must not detain us; nor even the conservatory, with its graceful Palms and plants of attractive foliage or flowers; but one of the rooms is specially remarkable, containing as it does portraits of "Westmoreland worthies." The example of the second Earl of Lonsdale in forming such a gallery, where local virtues and talents are brought to mind and their remembrance perpetuated, deserves to be followed by others, who may hold, as he did, the high position of Lord-Lieutenants of their counties. Among the worthies is John Robinson, "Surveyor-General of Woods and Forests," who holds in his hand a report of acorns planted in and about Windsor Great Park from the year 1788 to 1801, the total number being 11,225,000. Considering the failure of foreign forests of timber, and the neglect of forestry at home, the time can hardly be far distant when the planter of numerous acorns may again be held in honour.

Guided by Mr. Clark, the head gardener, we visited the east garden, which fills a gorge below the level of the Castle, lying deep down in the hollow and completely sheltered by the walls of the building and by banks of trees, bordered by Laurels. At the upper end of this pleasant retreat, among flower-beds and their green borders, there is a magnificent mass of Yews in full foliage, with drooping branches; and beyond is the famous Yew walk, where long avenues of Yews flourish on the limestone soil they love. A delightful walk among these long-lived evergreens leads to the rosery. On the left is the lawn of the south front, and on the right a stone wall, overrun with Ferns, wall Rue, and others, level with the ground above, and planted along the top with a row of pyramidal clipped Yews, divides this inner shrubbery from a wood less retired, and planted thick with various trees and shrubs. Great taste has been displayed in bringing the shrubberies and pleasure grounds at Lowther Castle close up to the house and lawn, so that the family can enter and enjoy them—lovers and all—without a *détour* or long trot. Among the Roses is a great Ash, which is doing them a great deal of damage; and as the tree has reached its growth, and is no great beauty, Lord Lonsdale has signed its death warrant. It is delightful to meet with a great proprietor who is not superstitious, nor afraid to cut down a tree when it happens to be out of place, or ugly, or otherwise undesirable. The rosery is bordered on the west side by a raised walk, having some good examples of carpet bedding in the foreground, and on the other side of the path, next the plantation, Dahlias, Delphiniums, and herbaceous plants, Roses, Ivies, and several sorts of Clematis trained to poles or pillars. Mr. Clark has used the Isolepis with excellent effect in ribbon bedding, placing a row of something bright, such as Lobelia and Iresine, on either side of it. He has shown his skill outside the conservatory in the painting of the Earl's coronet by means of small bedding plants. The groundwork is formed by Herniaria glabra, and the several parts of the emblem are depicted by means of Sedum lydium, Mesembryanthemum, Echeveria glauca, and the Brighton Blue Lobelia—a profuse blooming variety. He has "mixed the colours with brains," and the effect is good.

We looked into the kitchen garden with its high walls and surrounding banks of shelter trees. Everything seemed in excellent order: but the park, with its charming landscape and tumbling river Lowther recalls and enthrals us. We can quote a lord, too, as a witness of its beauty. Lord Macartney, the great traveller, who had seen enough not to be easily surprised, was describing the Vanshoo-quen, the Paradise of Ten Thousand Trees, as a place of delight where he was never weary of wandering—a scene so rich, so beautiful, so sublime, he had rarely enjoyed, and he compared it to the park at Lowther, "which," he added, "from the extent of the prospect, the grand surrounding objects, the noble situation, the diversity of the surface, the extensive woods, and command of water, I thought might be rendered by a man of sense, spirit, and taste, the finest scene in the British dominions." We think so too. The defect which Lord Macartney hints at consists undoubtedly in the superabundance of timber, which sometimes obscures and contracts the prospect, and in the frequent dotting of single trees over the surface. Some day we may hope that some gentle and skilful hand will remedy these blemishes. At the same the hand of taste will probably effect some inroads on the ugly and modern rows of trees leading from the north front towards the Eamont Bridge lodges. Try how we might, we could not pick another hole in this stately English home. *H. E.*

New Garden Plants.

DENDROBIUM CRUENTUM, *Rchb. f.*, *Gard. Chron.*, xxi., 1884, n. 541, p. 604, May 10.

THIS discovery of the excellent collector, M. Förstermann, introduced by Mr. Lardner, has flowered rather soon. I have a flower at hand sent by R. H. Measures, Esq., at Streatham, to Mr. B. S. Williams, and two others which flowered at Ham, near Hamburgh, with Herr von Ohlendorff, under the able management of Mr. Blyth. I am told by Mr. B. S. Williams that the plant has the growth of Dendrobium Jamesianum, and is covered with small hairs. The flowers are of the lightest green, with darker green veins. Mid-line of sepals keeled outside. Petals reflexed. Lip whitish. Callus, side-laciniæ, excluding the tips and edges, brick-red. Column with brick-red longitudinal stripes in front. The flower is about the same size as that of Dendrobium macrophyllum, Reich. (Veitchianum, Lindl.), and of same firm texture. I could not find a vestige of the mauve lines which I had indicated in my above quoted description as probably products of chemical changes. *H. G. Rchb. f.*

GAULTHERIA NUMMULARIOIDES.

THE Gaultherias are plants closely allied to the Pernettya and Arbutus. They belong to the natural order Ericaceæ. G. Shallon, G. fragrans, and G. antipoda are strong-growing under-shrubs 3 to 6 feet high, while G. nummularifolia and G. procumbens are dwarf creeping species, covering the ground rapidly where they have a congenial soil; the latter, G. procumbens, is a pretty evergreen shrub, with ovate, leathery, dark green leaves, and with pendent, white, bell-shaped flowers. Its chief attraction is in autumn and winter, when its leaves change to a dull rose, and each slender stem is surmounted by beautiful scarlet fruit. The one under notice and represented by fig. 84 is highly ornamental and a most useful plant; it has wiry sub-prostrate and slightly arching stems, which are clothed their entire length with alternate, roundish, Nummularia-like deep green leaves, which are silvery-green below. This feature adds greatly to the beauty of the plant, especially so when the stems are used and interspersed with cut flowers, &c.; it is a most useful plant for this purpose, as it keeps fresh for weeks when placed in water. The blossoms are produced at the base of each leaf along the whole length and on the under-side of the stem; in size, form, and colour they resemble those of the Lily of the Valley, though they are frequently tinged with rosy-pink. For many years this plant has been most successfully cultivated in the York nurseries, where it has been tried in various ways and used for various purposes. It forms a pleasing object

when used for clothing banks on rockwork, or planted about in isolated tufts in conspicuous positions the effect is good. It has also been used with advantage in carpet-bedding; where it was planted in ordinary garden soil and exposed to the full rays of the sun, it did remarkably well. Another valuable feature of this plant is its adaptability for planting in baskets for suspending from the roofs of conservatories, &c.: no plant with which I am acquainted is better suited for this purpose than this pretty Gaultheria. About a year ago one was placed in a large wire basket, and the plant is now nearly 3 feet in diameter; its running under-ground shoots have shot out in all directions through the apertures of the wire, over the whole surface of the basket, until it almost resembles a ball of living green; some of the pendent shoots are nearly 18 inches long, giving the whole a most graceful and elegant appearance. I may remark that the plant is quite hardy, is evergreen, and that it thrives best in moist sandy peat in well drained positions. It is a native of the Himalayas. *Richard Potter, Holgate, York.*

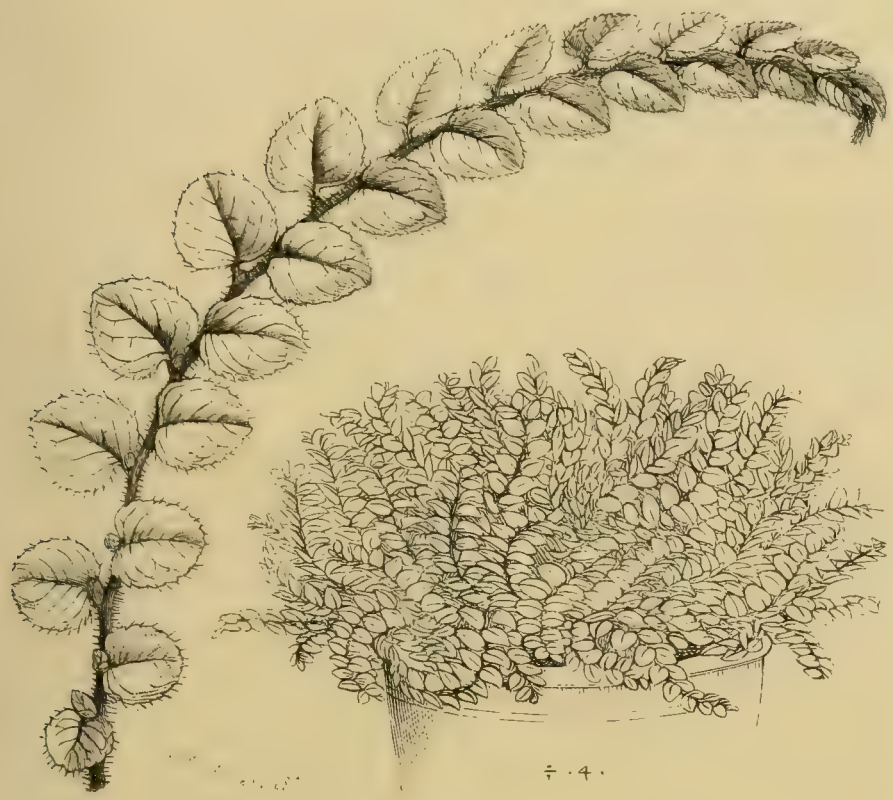


Fig. 84.—Gaultheria nummularioides. (see p. 456.)

INTERNATIONAL POTATO EXHIBITION.

Trial of New Varieties at Chiswick, 1884.—The Royal Horticultural Society has again generously assisted the International Potato Exhibition by affording all the needful means for trial culture of seedling Potatoes entered for competition. They have been grown at Chiswick, under the superintendence of Mr. A. F. Barron, and have been inspected from time to time, and finally submitted to the test of tasting by members of the International Committee. A considerable proportion of the seedlings on trial proved to be comparatively worthless, but a few were found possessing beauty of appearance, high cropping powers, and good table quality. These few are now reported on. It would be waste of time to describe the varieties that were dismissed as undesirable, and, moreover, it is no part of the policy of the International Committee to condemn anything, for as conditions vary so may results. The highest number of marks for appearance, cropping, and table quality in each case is three. The final award is made at the exhibition, but the decisions on cropping and table quality are taken at the garden. All that are now enumerated are worth growing, for only to such are marks awarded.

Hughes' Earliest of All.—A white kidney in the way of Myatt's, short growth, neat tubers, a fair crop of even size. For crop, two marks; for table quality, two marks.

Harvester.—Victoria type, growth robust, very green; tubers neat, even in size, quite clean; rather late. For crop, three marks; for table quality, three marks.

Chancellor.—A large, flattish, handsome white round, top-growth robust, stems purple, leaves large and very green. Late. For crop, three marks; for table quality, three marks.

Sunrise.—A very neat white kidney, of moderate top-growth, a good cropper, and early. For crop, three marks; for table quality, two marks.

Aspirant.—A handsome late white, in the way of Rector of Woodstock. Top-growth strong, the crop fine. For crop, three marks; for table quality, three marks.

Pride of Eydon.—A white round of variable form, apparently needing further selection, with a view to secure regularity of form. A very heavy cropper, tubers smallish, but not objectionably so. For crop, three marks; for table quality, three marks.

London Hero.—A white round, flattish, neat, smooth. Top-growth stout and short. For crop, three marks; for table quality, three marks.

Snowball.—A very handsome variety in the way of Snowflake. Top-growth very short and stout. Crop even and bright, but scarcely enough of it. For crop, two marks; for table quality, three marks.

The Suketra.—A somewhat rough white tuber of the Snowflake type, but less handsome. Top-growth dwarf and stout, crop heavy and even. For crop, three marks; for table quality, three marks.

No. 4 (Lye).—This may be described as a white Blanchard. Top-growth stout and bushy, the crop heavy and even. For crop, three marks; for table quality, two marks.

No. 2 (Ironside).—A yellowish-white round in the way of Porter's Excelsior. Top-growth dwarf and bushy, crop even and heavy. For crop, three marks; for table quality, two marks.

Seedling M.P.—A late handsome white round. Top-growth dwarf and stout, the crop remarkable for evenness; no chats, and no overgrown tubers to be found. For crop, three marks; for table quality, three marks.

Crump's Seedling.—A smallish white round. Top-growth very short, the crop fair, considering its earliness. No award was made, as the variety appears not to be adapted for an open ground competition. It is included in this report, however, because it appears to be well adapted for frame culture, and is likely for that purpose to prove useful.

Rufus.—A large handsome rosy-purple kidney. Top-growth robust, spreading, and wiry; a late and moderate cropper. For crop, two marks; for table quality, two marks.

Rosebud.—A coloured round, delicately mottled pink on white ground, but giving a rather small proportion of handsome tubers. Top-growth short and stout, crop heavy but uneven. For crop, three marks; for table quality, two marks.

No. 3 (Lye).—A purple variety of the Vicar of Laleham type, handsome and useful. Top-growth short and stout. For crop, two marks; for table quality, two marks.

Cardinal.—A light red kidney, not handsome. Top-growth strong. For crop, three marks.

No. 6 (Fenn).—A handsome purplish-red kidney, in form an equal ellipse. Top-growth moderate. For crop, three marks.

Seedling Floyd.—A white variety, in the way of Bresee's Prolific. Top-growth robust, crop heavy and rough. For crop, three marks; for table quality, two marks.

Bedfont Rose.—A late red round, of medium size and good appearance, long keeping. Top-growth strong. For crop, two marks.

THE ROYAL NURSERIES AT LANGPORT.

In the course of frequent visits to that wonderful combination of attractions at South Kensington, all of which by a greater or less stretch of the imagination are connected with the important subject of health, there were few among the indirect attractions of the place, which interested me, as a lover of flowers, more than the show of richly tinted spikes of one of our finest cut flowers for decorative purposes—I mean the exhibition of Gladioli by Messrs. Kelway & Son, of Langport, Somersetshire. When to this pleasure I was able to add the knowledge of the fact that to keep up this constant show of Gladioli, fresh, bright, and beautiful, Messrs. Kelway & Son were sending fresh supplies of spikes of bloom almost daily throughout the months of August and September, from Langport to the "Healtheries," I, in common I daresay with others who had a knowledge of the same fact, experienced a temporary impression that the firm which could show such a remarkable instance of business enterprise and public spirit, must be one of no ordinary character, and I there and then resolved that if ever I found myself in that neighbourhood I would see what sort of a place and what sort of people could afford to supply us Londoners and our country cousins with this daily source of pleasure and delight.

The latter days of August found me enjoying a holiday tour in the West. I visited the wondrous cliffs of Cheddar and its weird cavern of stalactite; I toiled upward to the summit, which affords a magnificent and extensive view of luxuriant country, with Glastonbury on the left and the Bristol Channel on the right. After enjoying Nature's sublimities which abound in this part of our island I bethought myself of my hasty resolution at the "Healtheries," and decided, forthwith, by way of a contrast, to visit the quiet every-day life, but, as I had reason to expect, no less interesting works of Nature and Art, in the Langport Nurseries. On my arrival I asked to see Mr. Kelway, sen., the chief of the establishment in which I had taken such a lively interest. I soon had the pleasure of looking upon a truly representative man, whose whole life, I at once imagined, and afterwards learned, had been devoted to his favourite pursuit—the culture of flowers. With such a devotion I had a cordial sympathy, and as the respected head of the firm gave me a hearty welcome, and was both affable and communicative, I was soon absorbed in listening to some of the striking features of an eminently useful

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life's work. Like many successful men, Mr. Kelway's beginnings were small. It was in 1851 that he located himself at the Langport Nurseries, which were thenceforward destined to gain a name and fame. At that time he had but an acre of ground, but now the firm of Kelway & Son, for the purposes of the nurseries and for the raising of seeds, occupy no less than 120 acres. Langport is situate in a low-lying district, but the bulk of the land used for the nurseries lies somewhat higher than the rest. Two residences, a large warehouse for storing seeds and making up and executing orders, and a multitude of glasshouses and sheds, are plainly indicative of the extensive business which is here carried on.

Naturally my first thought was to see something of the *chef d'œuvre* of the establishment—the cultivation of the stately and beautiful Gladiolus, and I was at once taken over various parts of the grounds and shown a sight not soon to be forgotten—of thousands and thousands, in fact whole fields, of this fine flower in full bloom! Imagine, if you can—you whose experience of Gladiolus growing, like that of the writer, has been limited to a few neglected patches of the old but effective brenchleyensis type—just imagine, if you can, the appearance of 21 acres of Gladioli! including the most magnificent spikes of endless varieties of the most exquisite tints! Imagine whole fields of these stately flowers, and rows of them each a quarter of a mile long, and then of your charity spare the writer the impossible task of describing their beauty as seen in this their home. The celebrated French cultivator of the Gladiolus, M. Souchet, late gardener at the Imperial gardens at Fontainebleau, began to hybridise or fertilise for raising new varieties of the Gladiolus in the year 1834, and with the varieties thus obtained Mr. Kelway, in the year 1851, began fertilising the Gladiolus gandavensis, a hybrid raised from an imported species from Natal, called psittacinus, or natalensis, and the seedlings produced by this hybridisation formed the groundwork of the extensive stock, now numbering upwards of 2000 varieties, grown at Langport! At the time of my visit I not only saw the flowers at their best, but it was an extremely busy season, for many hands were engaged in cutting, picking, naming, and packing the spikes of bloom for exhibition, sale, and decorative purposes, to be sent to all parts of the kingdom—a work which occupied many of the staff, for on some days as many as 1500 to 2000 spikes had to be packed and sent off. The method of packing interested me much, being extremely ingenious and well adapted for securing the safe arrival of the spikes, uninjured by a lengthy railway journey or a voyage even across the Irish Sea. The care and attention in keeping true to name such an immense number of varieties must be very great, and each year is adding new varieties to the number, each one, with all those that have preceded it, having a characteristic beauty of its own which one would not willingly sacrifice. Among the new varieties introduced during the season 1883-4 there are several which are very beautiful, and which must add another reward to the gifted and wonderfully painstaking cultivator for the long series of continuous experiments which has led up to his present magnificent stock.

Amongst the new varieties to be sent out next year, I noticed the following as being remarkable flowers:—Lady Carrington, pale lilac, streaked with carmine, and having a white throat; Her Majesty, lilac, lighted with white; Duke of Buccleuch, salmon-flaked lake, with a light centre; Mr. Gladstone, scarlet-crimson, with a light centre; Earl of Latham, purple-crimson, with a white spot on the lower petal.

In many other branches of flower, fruit, and seed growing the firm has been equally successful. Farm seeds, fruit trees, grass seed &c., all find a place, while on account of the supply of Roses being constantly sent out, the nurseries are known far and wide, especially for Teas, which are propagated and grown on their own roots, and of which I was informed they sent out from fifteen to twenty thousand annually. Among the general stock, Primulas, Cinerarias, Calceolarias, Cyclamens, &c., are all very extensively grown, and to Gloxinias and Begonias several houses are devoted for the production of seed. Of the value of this seed, its minute character, and the tediousness of the operations connected with saving and selling it, I was informed that of Begonia seed it was found that 7,200,000 seeds go to make one ounce, while the value of the seed of these two plants it appears is much greater than gold—one ounce being worth twenty guineas. No wonder that seeds in small packets are not very numerous. Again, I found that over an acre of ground is devoted to the cultivation of Hyacinthus candicans, the beautiful white bell-shaped flower of which is very much used for bouquets, and well adapted for forcing into bloom in the early months of the year when flowers are much wanted. The Amaryllis, now becoming so popular, is very largely cultivated, ten span-roofed houses being devoted to the cultivation of the bulbs, the stock of which now numbers from 15,000 to 20,000. Of Dahlias, single and double, there is also a very extensive collection of 600 varieties, to which is added annually every new variety as it comes out. With Pyrethrums, single and double, Messrs. Kelway have also been very successful, and an acre of ground is devoted to the culture of these beautiful hardy flowers. The Gaillardia, a flower now very much in demand, is also cultivated on an equally large scale. But besides their successful and extensive cultivation of flowers and plants, Messrs. Kelway & Son are probably the largest producers of Cucumber seed in the country. Every variety is grown, and new varieties constantly added. One in particular I noticed, the Emerald, a promising variety which is to be sent into commerce next season.

VIOLETS.

FEW if any flowers are more popular than Violets, as they are in equal favour among rich and poor, who prize them at all seasons, but it is only those who have frames that can pick them in quantity during the winter. To do so at that period the plants to afford the bloom must have been specially prepared by being planted out early in May, and well grown during the summer by having every attention as to watering and picking off the runners, so as to throw the strength into the crowns, for if these are not large and properly developed, with blossoms already formed in them in the embryo state, no amount of good treatment will bring them forth now. With plants such as those referred to the matter is easy enough, as all they require is a moderate warmth under shelter from glass above, to induce them to bloom with the greatest of freedom. The best way to make up the frame for them is to lay a foundation of faggots, or rubbishy wood, on which to build the bed, as by having a hollow bottom of that kind heat may be driven under by adding to and refreshing the lining. The most suitable material for forming the bed is a mixture of stable-dung and leaves, which ferment gently; and to cause them to do this, and retain the warmth generated, they should be turned over together a few times to let out the rank steam, when they will be ready for use, and may at once be packed on the faggots to a depth of 2 feet, and the frame stood in its place at the top.

To bring the Violets close to the glass it will be necessary to fill the inside with rotten leaves, and soil over them to plant in, so as to bring the heads up level with the undersides of the rafters, or even a little higher, as it is important that they should have all the light and sun possible during the short days now setting in so quickly upon us.

In taking up the plants great care is requisite to lift them with good balls, that they may receive no check, and when placing them in the frame the soil should be pressed well round them, and the plants so arranged that they stand just clear of each other. The next thing is to give a thorough watering through a fine-rosed pot, and if the sun should be very bright it will be advisable to shade for an hour or two in the middle of the day, so as to prevent flagging, and give the roots a chance to make a fresh start. With anything like fine weather the lights are best off till the end of October, as the fresh air and genial night dews are very refreshing to the plants, which hate confinement at any time; and therefore when the sashes are put on the frames they should be kept tilted at the back, or withdrawn on mild favourable days.

What interferes more than anything else with winter Violets is damp, to avoid which it is a good plan to place dry cocoa-nut fibre, or fresh soil in the same condition, between the rows and around the plants, the fibre being preferable, as the flowers lie clean on its surface, and may be picked without spot or stain on their petals. For coming in late Violets require no warmth, and any cold frame or pit will do to shelter them; but they should be got in now, and planted in the way already referred to. The sorts most desirable for frames are Marie Louise and the old Neapolitan, the first-named being the best, as it has larger, deeper-coloured blooms, and is of a hardier constitution and more sturdy in habit. Among the singles there are none better than The Queen and The Czar, which are both strong-growing free-flowering kinds, now too well known to need any description. *J. S.*

A GARDENING TOUR.

LOW FIELDS.—My next visit, after leaving Edge Hall, was to the residence of the Rev. F. D. Horner, Low Fields Burton-in-Lonsdale. We happen to have a mutual friend, and years ago I remember the presence and also the lectures of Mr. Horner's father when he was the leading physician at Hull. So it was not a work of very great time to feel perfectly at home with him. We plunged at once *in medias res*, and Mr. Horner told me more about Auriculas, their properties, the right way of growing them, &c., during the drive from the railway station to his house than I had ever heard before in my life. I confess, though I took good care not to say so to my friend at the time, that I was steeped to the lips in prejudice against florists, and florists' flowers, and everything that belongs to them. I was especially anxious to pay this visit because I knew that florists' flowers would be seen at their best at Low Fields, and that Mr. Horner is their cleverest advocate. "How do you know what points to go in for?" was met by him with the rejoinder, "We take up those to which the flower lends itself naturally." "Who is to set the fashion about your favourite's dress?" was disposed of in this way—"There is no 'fashion' about it at all. You would never have a doubt as to what ought to be done if you were an Auricula grower?" And so it went on till the long avenue of trees had been reached which leads to Mr. Horner's quiet home, and the barking of his numerous dogs in full chorus announced their master's return. The mere look of his garden and its contents was in the strongest contrast to what I had left behind in the morning. At Edge Hall the sun was, so to say, at the zenith; at Low Fields everything seemed to be reposing in quiet shade. The brightest possible colour was poured out everywhere, and giving adornment in one case, in the other there was no colour at all. But it was not difficult to understand the meaning of this. Mr. Horner's great time in the year had gone by. His plants and bulbs were all resting after their efforts, and he was just quietly leading them along to future victories. For let it be said his whole mind is given up to his favourite work. Auriculas are exacting in their requirements from season to season, and he puts them into one house, or takes them out of it and puts them into another, as he deems to be desirable. I noticed several large glasshouses that were entirely given up to his favourite flower. One was 30 feet long by 10 wide; another was 20 feet long by 10 wide, with a southern exposure; a third measured 48 feet by 12, with glass down to the ground, and an east and west run, and there were about 50 feet of frames with glass down to the ground in front, and most of them were used for Auriculas. Mr. Horner told me that the south lean-to houses carried all his specimen plants from October to May, which plants are placed in a north aspect as soon as they are repotted. Some are put under tiffany in open ground, and some in frames, and many unbloomed seedlings are left in the open air.

No heat, save under very extraordinary circumstances, is ever used for an Auricula—it would, indeed, resent it at once; it is not so forgetful of its origin and the wild mountain breezes to which it was accustomed as to stand any coddling. It must be protected from scorching suns and drenching rains, and then it is satisfied. Mr. Horner informed me that only a very few indeed remained of the favourite varieties of his early days. It seemed to be quite a sad consideration with him. One set has superseded another—improvement has followed upon improvement—and the flowers of which his father (who was a great Auricula grower) would have been proud, have now scarcely a place at all. A few of them

just linger on, more for association's sake than anything else; but those which some thirty years ago were the commonest are now among the rarest of any plants that he has. Mr. Horner possesses some 800 picked specimens, on which most of his hopes depend. He has about 1300 maiden seedlings, which have yet to declare themselves, about 1000 tiny plants which will grow into next succession, and a crop of some 2000 seeds, which he considers to be very good indeed for the year, and which he has carefully garnered in.

It is no part of my object now to write a paper on Auricula growing, or I might fill up your space with the mysteries of green-edged, and grey-edged, and white-edged, and self flowers. It did just strike me, though I kept it all very quietly to myself, that a green-edged flower may be very beautiful, but must be rather anomalous. The words which this great master of his art was continually using sounded strange in my ears—pips, paste, body, rose-leaf petal, eye, tube, and rim. Most of these took me out of the world in which I had been accustomed to live. I was in a new atmosphere altogether; and then the names of the plants themselves—where in the world did they come from?—Blackbird, Freedom, Lancashire Hero, &c. It must require a good deal of ingenuity to find suitable names of this sort for some 2000 or 3000 plants with their separate and well-marked idiosyncrasies. I think of all the surprises to which Mr. Horner treated me the other day the greatest by far was to be told that he could assign the proper name to each one of the numerous varieties from a mere inspection of the leaf. I have heard of a shepherd being able to individualise his flock, and that would seem to an outsider to be difficult enough, but there may be some expression in a sheepish countenance after all, and an animal can speak to you after a way. Who, however, can differentiate 1000 leaves, and those leaves of precisely the same plant? Yet this is what Mr. Horner can do, and his Blackbirds and Colonel Taylors, and Smiling Beauties, and many proved seedlings, are all read off by him at a glance, not only from the flower, but from the foliage, which is a very different thing. His mind is saturated with the traditions of the best Auricula lore; he has lived in its company, and tended and loved it, and thought about it from his youth up. It is to him a constant reminder of his happiest childish days. His father speaks to him again through the smiles of the flower. He has gone on from victory to victory by its aid. Not to grow an Auricula would be for him to have life robbed of its zest—it would be flat and uninteresting; and this is not the only reason why I should pin my faith to his colours. This matter of Auricula growing is a very ticklish business indeed. You should be well armed for a contest if you want to succeed in it, and my friend has been selecting and selecting for a very long time, and now he holds in his hands a strain which can distance all others. More than this, the occupant of Low Fields made a very good choice, from an Auricula point of view, when he pitched his tent there. No glare of the sun will ever be too much for him in that quiet retreat—mountain breezes bring freshness to his doors all the day long. Given only the fact that a cool, quiet, shady location is required, and this is the spot for it. As with Auriculas, so with the florists' Tulip, the Pink, the Carnation and Picotee, and other florist flowers, Mr. Horner is perfectly at home. Drawer upon drawer are full of Tulip bulbs, and by an inexorable rule he takes them out of the ground on the longest day and re-plants them in November on Lord Mayor's day; but I must not run on about this, for sheets might be filled with it. It should just be noticed that, however eminent as a florist Mr. Horner is, and however grand his florists' flowers certainly are, he by no means confines his attentions to such as these. He is a specialist in the strictest sense of that word—but a specialist with very wide sympathies indeed. I never saw a garden with so many grotesque and odd-looking things in it before. Somehow as a fantastic gurgoyle eminently befits a Gothic cathedral, so with plants—beauty and singularity often go hand in hand; and where you find one of these prized in the highest degree, the other is valued also. Mr. Horner has a very interesting bed of insectiform-podded annuals of the Scorpiurus and Medicago tribes—*e.g.*, Scorpiurus vermiculata, S. subvillosa, S. submutica, S. sulcata, and some varieties of Astragalus and Onobrychis.

The Scorpiuri are the funniest of these, and are well worth growing. Another oddity of a different sort is the squirting Cucumber, *Concombre vivace* of the French (Elaterium). It hangs its explosive fruit as innocently as the Snowdrop's nodding bell, but it is poised at such an angle as to throw the ripe seed furthest off, and to make sure of hitting some one in the face, or up the coat-sleeve of the intruder who handles it.

Linarias seemed to be greatly in favour at Low Fields; L. aureo-reticulata, L. marrocana, L. alpina, and L. triornithiphora were in blossom all over the place. In the greenhouses very many notabilities are to be seen—*e.g.*, Disa grandiflora, Impatiens Sultani, Imantophyllums, and Tigridias of all sorts, were at their best; and it is certain that though Mr. Horner does some few things so pre-eminently well, he has sympathies which are wide enough for all the rest. As might have been expected, the plant which likes him least is an Iris. I came across several Irises that looked in a very uncomfortable way; I scarcely think he will manage them. Some of the glass-houses were filled with Rivers' finest sorts of Peaches and Nectarines, and Mr. Horner knows well how to manage them; but even these houses have a use which is peculiar to themselves.

Quite a study of cereals is prosecuted, especially Maize, and it is more than likely that improved sorts of Barley will take their origin from Low Fields. At any rate there is plenty of interest to be found there already. The black Barley, Hordeum nigrum, must not be passed over without a word. There are three varieties which are ripe just now, with two-rowed ears, and two varieties with six-rowed ears. It is most beautiful from every point of view, with its golden straw and jet black ears, and bloom as of a Black Hamburgh Grape, and awns of rich brown. Triticum compositum is a fine Wheat, 6 feet high, and there are several others of note.

A water garden crowns all Mr. Horner's attractions, and I should think all who see it must wish to have the same. I can only give a list of some of the plants which were thriving in it. They are as follows:—Nymphæa alba and N. odorata, and Nuphar lutea, Villarsia nymphæoides, Hottonia palustris, Sagittaria fl.-pl., S. palustris, S. variabilis, S. simplex, S. lancifolia, Calla æthiopica and C. palustris, Crinum capense, Butomus umbellatus, Agapanthus umbellatus, Primula rosea, Pontederia cordata, Aponogeton, &c.

Florists of Mr. Horner's stamp and acquirements enormously help on the cause they have at heart, and indirect advantages also flow from them. If he does give himself up rather much to the production of flowers of a particular type he shows how a great many other things can go along with it. A love of Nature is the moving spring with him beyond all doubt, and the singularity of his efforts has an attraction of its own. It would be impossible to spend two or three days at Low Fields without finding great pleasure in it, and, it may be added, without deriving great instruction as well. *A Wanderer.*

(*To be continued.*)

THE OLD WHITE AZALEA
(INDICA ALBA) FOR FORCING.

No class of individuals in their time have done so much to diffuse a taste for gardening amongst the masses as the old florists of the past; scattered about as they were in different parts of the kingdom following their delightful hobby, though often in a humble way, their work not only led to a perception amongst their compeers of the beauties existent in plants and flowers, but was frequently not without its influence on the stratum of society above them. Form (according to the standard they originated) was what they aimed at in the kinds of flowers they took in hand, and all that their critics have had room to find fault with is that their standard was a mistake from a natural as from an artistic point of view, which is true, but, like some other things that are incorrect, the florist's idea of form is being corrected by public taste. Flowers with broad, even, rounded petals, that overlap each other so as to form something approaching an unbroken circle, are not objectionable when growing on the plant, but when they are to be used for arrangement in a cut state few that are so formal are admissible. In this way it is with Azaleas; the original old white narrow petalled Chinese kind, A. indica alba, now in the country considerably over half a century, still finds the most favour with the public, as shown by the London florists, who naturally give the preference to that which they can sell the best. The form the flowers of this old kind assume with the segments erect—not flat, as in the florists' hybrids—with their dead white shade of colour, give them when arranged in a bouquet or other ways a much more artistic appearance than present in the newer race of seedlings. The quantities of this old white Azalea that are in the hands of the London market growers are immense; one of the finest lots that we have met with is in Mr. Goubert's nursery at Kilburn, where there is a house 80 feet long by some 40 feet wide completely filled with it in large and medium-sized plants. The stock is profusely set with flower-buds, as with most of the market growers the plants are confined in comparatively small pots, and kept in a free condition of growth by the use of light manures applied during the growing season. One advantage attending the cultivation of this Azalea is that it is not near so subject to the attacks of thrips as other sorts; its woolly leaves, coupled with their slightly glutinous condition, appear not to be in keeping with the tastes of this destructive parasite, from the effects of which Azaleas suffer to an extent greater than through all other causes. *B.*

THE POTATO DISEASE.

As long as the Potato disease exists no doubt it will be the subject of controversy, and, therefore, some patience is needed on the part of readers whilst doctors disagree. Though personally having much sympathy with the now well-understood Jensenian theory of the external operation of the Peronospora spores on the Potato tubers, yet I think Mr. Plowright is somewhat begging the question in assuming that tubers which show disease on the lower sides must be infected from the interior, because I have found tubers this, as well as in previous years, the which have been as much blotched with disease on the lower sides as in the upper, and yet had no apparent evidence of disease internally. It must not be overlooked that the tubers, when swelling in the soil, force out the soil and form for each a sort of earth cave, the sides of which by external pressure are fairly solid; consequently when rain washes the spores of the fungus, either down the stalks or through the thin covering of soil usually found, the water is just as likely to carry the spores to the lower sides of the tubers as on to the upper sides: hence tubers are often found diseased alike all over. Again, I cannot admit with him that once it is shown that the spores attack the tubers externally, more will be done to check the ravages of the disease than any amount of controversial writing, for the simple reason that such discovery will be valueless unless it leads to some practical remedy being found; and doubtless Mr. Plowright will say such remedy is found in the Jensenian system of protective earthing. Now it happens—though, for Potato growers, not unfortunately—that since this system has been made known in this country (now three seasons), that little real opportunity has been offered to put it to a practical test, and of the three years none has been more free from disease than the present one; but, whilst having much faith in the protective theory, I have too much reason to fear, having regard to experience in previous years, that sometimes the ravages of the fungus are diverse in action, and that protective earthing would in such cases afford but an indifferent remedy. Certainly no great credit can be taken for the system until it has had a severe trial through some three or four bad disease seasons, should they unfortunately come. I am not with Mr. Plowright in his assumption that the leafage of many kinds of Potatos has died away because first affected with disease spots. Since he wrote we have had a marked change from heat and drought to rains and much cooler weather; in fact, atmospheric conditions such as, were the air full of spores, should make the disease rampant. But so far from that being the case, here at least I see some later sorts of Potatos having foliage as green as vigorous and free from spot as though Peronospora infestans was a myth. Still farther, and differing so greatly from what has been seen in some, indeed many previous years, all medium late Potatos, even if like Magnum Bonum and Regent, are partially ripening, yet seem to be still spotless. The fungus is either very erratic in its action or else it is imperfectly understood. As evidence of its erratic

character, I may mention that though I have lifted considerable quantities of some fifteen or sixteen kinds of Potatos, perhaps 100 bushels in all, yet I had not met with a single diseased tuber till the other day, lifting a few of Snowdrop, white kidney, I was surprised to find perhaps a score or so of tubers spotted all over, just as though affected with small-pox. On several kinds further lifted no disease has been found. Again, when looking over the seedling Potatos at Chiswick the other day, we were much surprised to light on just a kind here and there similarly and much diseased externally, whilst some cooked Potatos selected from them as apparently sound showed on being broken that they, too, were badly diseased just beneath the surface. Why, out of so many sorts, all growing side by side and under the same conditions, only these two or three kinds should have been diseased is a problem I cannot solve. *A. D.*

Orchid Notes and Gleanings.

The Culture of Pleiones.—The Indian Crocuses, as these plants are called, are just now unfolding their welcome flowers, and will continue to brighten with their soft, glowing colours the houses where their larger brethren are at present busy preparing for the winter and spring displays. Pleiones are so easy to grow, and when grown are so sure to bloom freely, that a collection of them should be found room for in even the smallest Orchid collections. Many fail with Pleiones through a notion that they are stove Orchids, which require much nursing and coddling to be a success. A knowledge of the conditions under which these plants are found growing on the Himalayan mountains would go far to dispel such a notion, as it also would help to show what gross feeders these little plants are when making their new bulbs. Pleiones are all cool-house plants. Early after the flowers fade the bulbs should be repotted in a compost of good fibry loam, chopped sphagnum, and dried cow-dung, six parts of the first to one each of the others. Pans well drained should be used, and the soil pressed down firmly about the base of the bulbs. As the young, tender shoots are pushed during the time the plants are in flower the old soil must be carefully removed, so that none of the new roots are taken in the process of repotting. A shelf in a Cattleya-house, or where the temperature ranges from 50° to 65°, and a position exposed to the full sun, should then be found for them. Water sparingly until the new growths are well away, after which an abundance of water should be given until the leaves commence to turn yellow. From this to the flowering period very little water will be needed. We grew ours all summer on a shelf, where Disa grandiflora was at home. Here they made good bulbs, and these are new flowering very satisfactorily. P. Hookeriana requires even cooler treatment than that above prescribed for the other species. High up on the Sikkim Himalayas, at an elevation of from 8000—10,000 feet, is where P. Hookeriana is found clinging to the rocks and old fallen tree trunks. Here, nestling amongst the mossy covering, which, under the influence of dense atmospheric moisture, clothes the rocks and trees, this little gem is happy. In the cold season the temperature of these regions is often several degrees below freezing point. It will be gathered from this that P. Hookeriana is a distinctly cool Orchid, and should be treated as we treat the Disas. It thrives best when fastened to a block of wood with a little sphagnum upon it. P. Hookeriana has bulbs as large as a robin's egg, smooth and deep red. The new growth is pushed along with the flower, and consists of a solitary leaf, with a long sheathed petiole, and the blade 2 inches in length. From the apex of the petiole the flower is developed—a pretty rosy-petalled flower, with a white lip and a few brown blotches on the lower lobe. P. humilis is distinguished by its long-pointed Onion-shaped bulbs, which are dark green, and are almost completely wrapped in a brown fibry coat. The flowers are white, with lines of deep crimson on their long fringed lips. P. Wallichiana has thick spotted bulbs and bright pink flowers, the fimbriated lip being marked with yellow and white. P. Lagenaria has green mottled-brown bottle-shaped bulbs, and flowers deep pink, the lip being white, with a yellow throat, and deep purple blotches on its recurved side lobes. P. Reichenbachiana is a rare beauty, characterised by a bulb like an elongated P. Lagenaria, and flowers white and pale rose. The lip is almost wholly white, with a few purple blotches on the lower lobe. P. Schilleriana is rarely met with in cultivation. It has small flattened green bulbs, which are perennial. The flowers are borne along with the foliage, and are pale yellow, with the lip blotched and spotted with red. In the narrowness of the petals of this species, and the perennial nature of its bulbs, we have the connecting link between the Pleiones and the genus Cœlogyne. *U.*

Oncidium varicosum var. Rogersii. — There is something in the habit and behaviour of this plant that is scarcely less curious and interesting than the flowers are beautiful. The sepals and petals are small, and transversely barred with brown on a pale yellow ground, while the labellum is comparatively large and clear yellow, with a brown blotch at the base. The flower-stems vary from 2 to 6 feet in length, according to the strength of the plant, and bear a profusion of flowers on loosely panicled branches. These flowers are all directed to the upper side of the branches, and vary extremely in size, bearing a striking resemblance to a swarm of highly coloured insects on the wing, uniform in colour, but different in size. There would seem to be a want of constitutional vigour to develope all the flowers properly, as sometimes happens in O. bifrons, and always in O. heteranthum. Some specimens in the cool Orchid-house at Kew are conspicuously handsome.

Dendrobium thyrsiflorum.— I send you a photograph of a Dendrobium thyrsiflorum which has the peculiarity of flowering twice a year. In May of this year it had five flower-spikes from the old bulbs; in September it flowered again from the bottom—it has done the same for the last four years, and is now making two strong growths. *H. M. Pollett.*

Aërides Sanderiana.—This grand new Aërides, which was imported some time ago by Messrs. F. Sander & Co., of St. Albans, but which was retained in their nursery until the collector's florid description of it could be tested, is now in flower at St. Albans, and fully warrants the high character received with it. The individual flowers are very large, petals white, suffused with lemon-yellow, and tipped with mauve. The hood of the labellum which covers the column is very broad, clear light yellow, the cap or crest being violet-carmine, and its spur greenish-yellow, faintly dotted with black. A. Sanderiana is a very important novelty. It reminds one of a yellow-tinted A. Lawrenciæ. Two plants of it are in flower. *J. O'B.*

GRAPES IN COOL VINERIES.

The remarks in your leading article at p. 432 on the above subject bring to my mind a vinery, some two or three miles from here, that has produced excellent crops of very useful table Grapes each year for the past twelve years, to my knowledge, and which can honestly be called a cool vinery. The vinery in question is at Orton Hall, Tadcaster, and a few remarks on its form, &c., may be useful to some, at least, of your readers.

It is an ordinary lean-to, with a steep pitch of roof, as will be easily seen when I state that it is 7 feet in width, and covers the surface of a wall about 13 feet high, the front upright sashes being about 2 feet 6 inches in height, every other of which is made to open for front ventilation. The roof is what is termed a fixed one, being formed of astragals, or sash-bars, that run its whole length save where the top ventilators are fixed, these being about 3 feet in width by the same in depth, and about 8 feet apart from centre to centre. They are hung at the bottom, and open with an ordinary iron lever to each one. The length of the house is 90 feet, and it was erected by an ordinary country carpenter some twenty years ago.

The great difference in the internal arrangement of the Vines from ordinary vineries is that they are planted against the back wall, the rods being trained to a light wire trellis fixed some 4 inches therefrom. This is necessary so that the fruit may hang clear of the wall. In this case there are only three Vines to fill the whole house. The main rods are trained horizontally along the base of the wall, and shoots led from them perpendicularly about every 2 feet. These main rods have struck out roots in several places into the border, which as a natural consequence have strengthened the Vines very much. The path runs close to the back wall.

The soil of the border is a strong holding loam resting on limestone, and the roots have free access to the outside at the front through openings left when building the front wall. They get plenty of water during the summer season, and an annual dressing of good farmyard manure each year some time during the winter or early spring, with an occasional soaking of manure-water when the fruit is swelling off in the months of July and August. The varieties of Grapes are Black Hamburgh and Royal Muscadine.

The only heat available is through flues in the back wall, and this is seldom or ever used save to keep out late frosts in the spring, to assist in ripening the wood in the autumn, and to dry up the moisture in the atmosphere, so as to prevent the fruit from decaying in the month of November, during which month I have several times seen upwards of a hundred bunches of useful Grapes hanging on the Vines. The front part of the house is useful for many purposes, and especially so for growing Tomatos in the summer, storing half-hardy plants and salads in winter, and a few Plums in pots, plunged about every 6 or 8 feet apart, frequently produce excellent crops of fruit.

I have omitted to mention that along the centre of the roof there is a bar of iron 1 inch by ¼ inch and to which each astragal is fastened by a screw, this said bar being supported every 8 feet by an inch round iron standard, so as to brace the whole structure together. Some few years ago the gardener, Mr. Croft, took rods from the back wall and laid them under the path some 3 inches deep in the border, and brought them up these iron supports. They have a very pretty effect, and produce some excellent fruit. As mentioned before, the main point of difference in this vinery from others is its steep pitch of roof, and the Vines being trained to the back wall instead of up the roof, as is usually done. In my opinion this latter point is a very important one, and assists very much in making the house more successful than cool-house vineries sometimes are under ordinary intelligent culture.

The Vines seldom or ever get infested with red-spider or thrips, and they are less liable to sudden fluctuations in the temperature from being close to the wall, as the latter naturally gives out heat in spring and summer after being warmed by the sun's rays, and it also absorbs moisture freely in the late autumn months. Were I called upon to build a cool vinery I should at once decide on having it similar in principle to this one; and amateurs who are desirous of combining Grape growing with the culture of a few greenhouse plants would, I feel sure, get more pleasure and produce from a house of this description than from any other I have yet seen. It could be heated with a flow and return hot-water pipe where a flued wall is not available; and those who have not the opportunity of employing a house carpenter, would find no difficulty in getting any respectable horticultural builder to erect a house for them at a moderate cost, especially where a wall is already built to fix it to. *H. J. Clayton, Grimslow.*

BULBS.

In *The Garden* of February 4, 1882, Mr. Wolley Dod says "It has been said of these Orchises (British), and I have reason to believe that it is true, that if prevented for a year or two from perfecting their flowers, or even from making any growth at all above-ground, the tuber will increase and the flowering become as it were cumulative, the spike being of extra size. A similar habit of remaining dormant and yet increasing in size, certainly exists in the case of some Lilies. In a year or two I hope to be able to speak with more certainty of this peculiarity in the Orchis." I am glad to be able to substantiate the above remarks by the three following cases:—1. In the park here, where Habenaria bifolia is annually cut over when coming into flower, it is much stronger than when left unmolested. 2. A plant of Lilium candidum broken over when about six inches in height, increased underground, and the following season produced a remarkably fine flower-stem. 3. A flower-spike and the two leaves of Cypripedium acaule were cut and sent, when in full flower to Mr. Goldring (for his paper on Cypripediums read two years ago in London), and the plant has flowered this season. These cases certainly go far in corroboration of the statement I made in your issue of September 20, p. 370. *A. D. Webster.*

PRESTON HALL.

This pleasantly situated house, embosomed in the leafy landscape that borders the sluggish Medway, a few miles out of Maidstone, is the residence of H. A. Brassey, Esq. ; it stands on a slight eminence, yet surrounded on nearly all sides by higher ground which nowhere approaches so near as to make the views restricted in extent. The lightly timbered aspect of the country hereabouts fosters the idea in the beholder that a great park is spread out around him, and the more perfect becomes this park-like appearance in the early summer months, when the fields have nearly all one shade of green, the great Elms that dot the landscape over with domes of still lighter green foliage enhancing the park-like character of the landscape. Looking from the north side of the mansion, the park and the agricultural land beyond it stretch up the hillside and there unite with the verdure of the downs whose nearest top is 3 miles away. A little thinning out here and there of a few intercepting trees of not much value, would open up several vistas in the direction of the hillside. The foreground is taken up on the left half a mile away by the village of Aylesford, the picturesque, albeit well-to-do appearance of which is of no little value as a pleasing object in the landscape. Other objects that force themselves on the eye are the Purple Beeches that are to be found associated commonly with Pinus austriaca, P. sylvestris, and P. insignis. Beech grows fairly well here, but scarcely so well as the Elm, for although the chalk which the Beech delights in shows itself in the deep scars of the chalk pits on the side of the hills—there is none near the surface in the valley. Sweet Chestnut is another tree which finds a favourable soil here, and young thrifty trees are found everywhere. At about 100 yards to the east of the mansion there are now standing three examples of Chestnut, which will rank as giants of the species in this country. The specimen standing nearest to the house measures at 5 feet from the ground 22 feet 7 inches in girth, and is 75 feet in height, with a circumference of 261 feet ; the other two measure respectively 21 feet 5 inches and 13 feet 8 inches. These trees have enormous main branches, especially the largest, which has the appearance of having been pollarded some centuries back, whereas the boles of the others present clear, straight growth up to three-fourths of their total altitude. In this part of England the Chestnut seldom fails to mature its seed, which is greatly valued for raising plants for timber and for coppice plants, the crop of the latter being very largely in demand for hop-poles and cask-hoops, The house itself is a moderate sized one of modern construction, and is built of a warm brown stone, some portions being highly ornate. The walls are in places well clothed with Ivy, to which Mr. Brassey attaches great value, and which add much to the handsome look of the building, The north side of the mansion is embellished by a small flower parterre with beds of a scroll pattern edged with box, and surrounded with gravel. A pretty fountain with a good sized basin full of Water Lilies, and some few Golden Yews and Bays, lend additional charms to the little flower garden (fig. 85), and being hidden from view from the lower windows is a good feature in the arrangement—a point that has been kept in view round about the house, for nowhere are beds of flowers brought into much prominence, or so that they could be seen from the windows, the only exception being a bed near the conservatory, which is at all seasons of the year kept gay. To make up for this paucity of colour in flowers there are found great numbers of shrubs and dwarf trees of a flowering character, almost every group containing the finest Thorns, Cytissus, Cydonias, Pyrus, Lilac, Viburnum, &c. Rhododendrons of good varieties abound, as do herbaceous plants, of which there are large borders always kept gay with flowers in season. From the west end of the northern terrace a walk runs due west for about 300 yards, terminating in solidly built alcoves. This walk is bordered with solitary standard Roses, planted in small circular beds, and Irish Yews, the latter promising to make a fine feature in the garden in years to come. To the right and left of this walk the well kept lawns teem with fine Conifers, especially noticeable being the Cedars of Lebanon and C. Deodara, and Sequoia sempervirens. A Lebanon Cedar was observed that had a beautiful straight bole of quite 3 feet in diameter at man's height. Many of these trees are from 30 and more feet in height, and having had great attention at all times, have grown into beautiful symmetrical specimens. Formerly the lawns were much dotted over with coniferous trees, which would have quite robbed the garden of its charming glades and breadths of turf that set off so admirably the remaining trees. But many of these have been either removed altogether, or have been grouped out so as to present noble banks of handsome specimens, that are sometimes associated with flowering trees and shrubs, and in other instances



Fig. 85.—the garden front, preston hall.

not. A little topiary work is found here in some specimens of Taxus adpressa that are cut into flat-topped table-like forms. Many fine specimens of the golden Yew in its best variety are seen about that in most cases are innocent of knife or shears, thus making beautiful objects, that command attention.

Winding umbrageous walks lead away to distant parts of the grounds, by the side of which some fine trees are met with. A splendid Libocedrus decurrens of nearly 40 feet high, having three stems, and close and perfect in form down to the ground, stands near the racquet court. Another fine tree is a Cedar of Lebanon, standing on the south lawn, which has a diameter of stem at man's height of about 3 feet, straight and smooth for many feet upwards. Near this is a Taxodium sempervirens, whose lower branches have grown out of all proportion to those of the upper half, giving a stunted look to those, whilst the whole aspect is very remarkable. At a short distance from the south front of the mansion and at right angles to it, an avenue of Cedars and other Conifers, alternately planted with Quercus Ilex, planted so as to pair across the avenue, runs in a straight course for just a mile. Most of the trees have grown well, not having suffered greatly from overcrowding with commoner trees. Still further thinning out and the removal of superfluous specimens to other sites—a piece of work Mr. Waterman, the head gardener, carries out most successfully—will allow the remaining trees space for their fullest development. He is also assisting the growth of backward specimens, or those in which indications of failing vigour are observable, by placing new soil in a trench thrown out at some 10 or 12 feet away from the stem.

This feeding of the Conifers in the thin and rather infertile soil has had marked effect on those that have been operated on some year or more. Many of the evergreen Oaks are 30 feet in height and of equal diameter of head. Whilst the Cedars, Pines, and Spruces exceed those in height by 10 to 15 feet. There are other avenues, somewhat similarly planted, running to other points of the compass, but which in consequence of the want of timely thinning of the thick protecting belt of copse have suffered very severely. the trees also being injured by winds, when the protection to which they have been used to is taken away.

From one of these avenues a hilly piece of woodland is approached that is very gay in early summer with the blooms of Pontic Azaleas and Rhododendrons. These were originally planted according to a certain plan, but having been left uncared for during many years the woodland scene had acquired the charm always to be found in utter wilderness when combined, as it is here, with much bright colouring. Here and there were Cryptomeria japonica and Aracauria imbricate of 30 feet in height, that had shot up from amongst the gigantic Rhododedrons, and which really have had to be rescued from the latter by ruthless cutting back.

Leaving the pleasure grounds by an ornamental iron gate we enter a small kitchen garden, the middle walk being gay with select herbaceous plants, those most suitable for cutting having the preference; in fact, this use of flowers is kept in view throughout the place, the employment of them being most profuse at all seasons. In this small garden was a wall case planted at the front with Cherries May Duke, Frogmore Early, and Governor Wood, and behind on the wall with Peaches and Nectarines. Another wall case was filled entirely with Peaches, mostly well set with fruits, and remarkable for healthy wood and foliage. The walls in this garden compartment were planted with divers fruit trees, but Peaches and Plums formed the major portion. Many were young thrifty specimens, whilst others were old and comparatively fruitless, and were awaiting their removal by degrees. Another small walled-in garden of about 1½ acre had a Peach case on the north wall with a southern aspect. In this the trees were planted on a low perpendicular trellis about 4 feet high near the front lights and on a trellis on the wall, the intention being to bring the latter overhead likewise, instead of stopping the shoots at the top of the wall. The open walls in this garden were planted with Plums on the west and Peaches on the east aspects. The trees were aged, but still fruitful.

There are two wall cases of considerable dimensions, the one we measured being 40 yards long by 2 yards in breadth. One of these was planted with Peaches of diverse ages, some in bearing, others being still young, and only just beginning to carry a few fruits. The other was planted with Cherries, amongst which were May Duke, Frogmore Early, and Governor Wood. This case was not exclusively for Cherry growing, as Mr. Waterman had planted the Alexander Peach and several Nectarines.

The great requirements in the way of cut flowers demand that all available spaces should be utilised, so we found the broad and sunny border in front of the cases planted with a large quantity of Roses in square beds; apparently they were plants on their own roots. The vineries are chiefly old-fashioned structures, but roomy and well ventilated. Of these there are nine divisions, the major part of which are filled with fruiting canes, that in some instances are twenty-five or more years old.

The borders, like most of the other parts of the gardens, have come under the improving hand of the present head gardener, and have been mostly renewed within the last few years; and the fine fruits now borne speak to this work having been well done, and although but few monster bunches are seen, those hanging at the time of our visit were highly creditable productions. Some of the Vines are cropped heavily for years in succession without any visible bad effects.

There is a Fig-house of a moderate size, the entire roof of which is covered with a very fruitful specimen of the Brown Turkey variety. This tree bore sixty-three dozens of fruit in 1883, and bade fair to carry an equal number this season, some of the fruit coming up to 4 oz. in weight. There is likewise a Peach-house in good bearing, in the range of which the vineries form a part. A handsome new range of glass behind the gardener's house consists of some useful divisions for the cultivation of the many cool and warm house plants wanted for indoor purposes and for cut flowers; these consist of the usual class of such things, those easily grown and propagated having the preference. A Rose-house is also included in the new range. It is planted with Teas, and bloom is furnished the whole winter from the plants in the borders. Clematises of the finest kinds were also planted, with the intention of training them over the roof, but the shade proving injurious to the light-loving Roses the plan was abandoned, the Clematises being allowed to grow up the sides only so far as the roof form handsome masses of tangled flowers and foliage, and perhaps look better than would have been the case when trained formally overhead. Adjoining is a span-roofed hothouse that contained a mixed collection of such plants as Crotons, Musas, Palms, Acalypha musaica, Ferns, Dracænas, and flowering species of various kinds. The adjoining span-roofed Orchid-house contained the beginnings of a collection that will probably attain some celebrity at a later date, and which now has some fine masses of good things, the most striking and meritorious of them being Odontoglossum vexillarium, Cattleya Mendeli, a fine variety; Cymbidium Lowianum, C. Mastersianum, Lælia crispa, L. purpurata, Cypripedium in considerable variety, and a very strong piece of Cymbidium giganteum, that Mr. Waterman does not succeed in blooming as yet. From this house is the entrance into a small warm fernery, a pretty bijou nook, with running water, healthy Ferns, gold fish, &c. The forcing pits are many, as needs must be where the demands of a family are constant and heavy. These simple structures are roomy lean-to pits, of about 10 feet in breadth, and are nearly all heated with dung linings and similar material, mixed with leaves for bottom-heat. It is a cheap method, and, moreover, supplies enormous quantities of capital manure for the kitchen garden. There are houses for the growing of Cucumbers, Melons, Strawberries, Tomatos, Pines, &c.

The orchard consists of a partly walled-in area of 4½ acres, which is planted with standard Pears, Apples, Cherries, with breaks of Filberts, and an under-crop of bush fruits, the walls being clothed exceedingly well by Pears that require the aid of a wall; and although Preston Hall stands in one of the most favoured counties, there are not a few kinds of Pears which are improved by having the aid of a wall to grow them to perfection.

The gardens possess that useful adjunct to all large country places—a nursery—in this case of several acres in extent, in which trees and shrubs are raised and tried as to their fitness to the climate and the soil; and where specimens can be grown on till large enough, in the case of shrubs more especially, to be effective. Rough vegetable crops form successional crops to the trees and shrubs, and so relieving the kitchen garden in a great measure.

Plants and their Culture.

STOVES.—GENERAL REMARKS.—The weather of the past few weeks has been so unusually bright and fine that we have thought it desirable to prolong the use of the blinds for a short period during the middle of the day. Now, however, having entered October, we shall prefer to discontinue their use entirely and take the first opportunity of thoroughly drying the same and have them taken off the houses and stored for the winter season. After a rain and whilst the outer surface of the glass is still wet, we find it is a capital plan to pass a hairbroom or, what is better still, a brush commonly called a "tar-brush" with a long handle over the glass; this is a capital tool for the purpose, offering more resistance than a hair broom, even when the latter is nearly worn down close. The tar-brush readily removes any accumulation of dust and dirt, as well as any vegetable growth that may be found on most houses, especially when exposed to the force of the wind when blowing from the direction of thoroughfares over which a heavy traffic is carried on. Like any other tool that is brought into contact with glass, it requires to be carefully handled and then no harm will ensue. Where there is any extent of glasshouses devoted to plant culture during the dull season of the year, we can confidently recommend a due proportion of these useful as well as cheap brushes to be kept for the purpose of cleansing the glass. All practical cultivators know the importance of obtaining the maximum amount of light during the winter months and a little labour in glass cleansing will be time well spent, not only in benefiting the plants but in the general appearance also from the interior of the houses. We have just been over a range of pits with these brushes, both the exterior as well as the interior being well washed. When wishing to cleanse the latter side we merely turn the light over, and wash it as it lies on the pit, then turn it back to its proper position, and wash the outside last, as some little amount of dirty water may possibly pass through the laps of the glass. This operation is quickly performed when any one has a notion for work of this kind.

Some of the late flowering Allamandas, Dipladenias, and Ixoras will continue to furnish a good supply of useful flowers for cut purposes for a few weeks to come, and thus keep up the quality of the cut bloom till there is an abundance of Chrysanthemums and other winter stock to draw upon. Ixora coccinea is still one of the very best of the genus for supplying decorative arrangements. Its splendid trusses (when the plants are in robust health) are a beautiful sight; these, too, are possessed of greater substance than many of the newer kinds now grown, and consequently better adapted for use in this way. We are hoping to increase our stock of this fine old sort for this kind of work; it will afford a pleasant change to the usual run of every-day flowers. Allamandas and Dipladenias that still yield a fair supply will require to be watered pretty freely, but not excessively. Those of each genus that may have gone out of flower should have their late growths somewhat reduced, more freely in the case of the former than the latter. Bougainvilleas and Clerodendrons also will be better for the same attention, and where room is very short they may be taken from off their trellises and trained in a more upright manner around some stakes till starting time comes round again.

There will not be any too much room in the majority of places for accommodating plants in pots between this period and the turn of the year. Now the Chrysanthemums will need a good space that must of necessity crowd other plants for the time being; the requisite room at least must be reserved for them although it is not essential that they should be housed for a week or two. By-and-by, when the fruit-houses become fit places for some of the stove stock, there will be less need to crowd the stove proper; but extra pressure will in most cases be needed in making the most of the room, and the modern warm pits are a great boon for many plants that would otherwise have to be grown in the stove itself. Poinsettias, for instance, would be quite at home in a dry warm pit, where they could have abundance of air in favourable weather: free ventilation and a dry atmosphere will greatly aid in bringing their showy bracts to perfection. If a good strong growth has already been secured, the same treatment will also help to keep the plants

from becoming so much drawn. By all means if possible avoid keeping this useful plant in a damp atmosphere, which is invariably prejudicial to the production of well-proportioned bracts. Any stock that received their last shift somewhat early will now have filled their pots pretty well with active roots; these plants should soon be treated to occasional doses of liquid manure, which will help them to retain their foliage in a healthy state, without which fiuture results will not be so satisfactory. Euphorbia jacquiniæflora will also succeed well under the same treatment as that accorded to the Poinsettia, although we have seen it finely done in a higher temperature with a dry atmosphere.

We have some Gardenias still in a cold house, but shall soon bring them into the stove to supply coat flowers during the winter. This is a very accommodating genus of plants, a cool course of treatment during the summer months being inducive to winter flowering. A few of the stock of Epiphyllum truncatum vars. may be introduced into more warmth; with us the buds are pushing and only need a little pressure to bring them to perfection. Plants of Plumbago rosea and P. coccinea, if of good length of shoot, will produce a very pretty effect if trained up wires near the roof. Tall plants of Thyrsacanthus rutilans will also display their graceful racemes to the best advantage in a similar position, aiming to arrange them so that the same will catch the eye when walking through the house. The earliest of the Eranthemum pulchellum and E. Andersoni will now be useful; both of these plants will thrive well in a damp position where many plants that flower during the winter will soon spoil. An intermediate house will be most useful for such plants as Centropogon Lucianus, Begonia insignis, and other winter blooming varieties; the same house will also help to retard any portion of the stock of stove plants that can be safely ventured in a lower temperature, thus being productive of a longer period of bloom without at any time having an undue amount. The day and night temperatures of the stoves may be gradually lowered, we do not, however, advise a too sudden drop in either. For bright sunny days 80° will be sufficiently high, whilst by night 65° to 67° will be about a safe standard, lower than that may be productive of a damp, stagnant atmosphere. A rise of from 7° to 10° may be allowed during dull days. *James Hudson, Gunnersbury House Gardens.*

The Flower Garden.

A New Use for Dahlias.—So much has the single Dahlia been regarded as a plant to produce flowers for household decoration, and so little has it been planted with a view to garden effects, that it is not possible to feel other than pleasure on witnessing the singularly decorative results which have followed from its employment in this way at Heckfield. Though employed as a bedding plant in a small way last year, when certain good results, where wisely planted, became evident, it was not till the past summer that Mr. Wildsmith more largely employed single Dahlias as bedding plants, or for the dressing of large mixed raised baskets, but he has this year faced the entire length of the dense green hedges of Cupressus Lawsoniana which margin either side of the broad centre walk of the kitchen garden, and thus created an effect that is beautiful beyond description. Under ordinary conditions of growth the single Dahlia is loose, straggling, and lacking in effect. A few plants perhaps have fair habit, but as a rule the majority are the reverse of compact. In such case it is hardly possible to fall into ecstacies over the plants, beautiful as each individual flower may be. But the arrangement adopted at Heckfield so far overrules this looseness of habit, that by securing the plants and strongest shoots to the hedge, the Dahlias are made to form a face to the path that, whilst giving to the spectator all the floral beauty at a glance, yet is devoid of formality, because the shoots are not rigidly tied in, but just enough to ensure the needed result. A little variation in height does not detract from the charm of the arrangement, but it is proved that the divergent plants are the most floriferous, and as these are of necessity a little drawn by the hedge they are all that can be desired for height. That the flowers in all their rich variety of colouring are looked at with a background of dense rich greenery rather adds to their beauty—indeed the entire walk, with its tall margin of Dahlias and its foregrounds of carpet planting and tiny but singularly elegant Conifera and other suitable plants, forms a *coup d'œil* which can just now hardly be equalled. The colours of the Dahlias used are white, yellow, scarlet, cerise, crimson, and other striking hues; and to his present stock Mr. Wildsmith will, in Duchess of Westminster, Dorothy, Queen of Singles, &c., add other attractive ones next year. Still further additions to the arrangemement will be made by the introduction of a few of the dwarfer and more compact habited bedding or bouquet double kinds, as these will serve to make a denser base cover of bloom to the hedge than is now seen. Although there is so much of charm and beauty in the effect at present, yet all that may be added to and intensified another year; and doubtless under the superintendence of one of the best flower gardeners of the day will it be. A photographic picture of this walk, recently made, effectively illustrates the planting and the resulting beauty; and it must not be forgotten, too, that all this loveliness and colour is seen in October—a time when many flower gardens have nearly given up the ghost. Single Dahlias are specially autumn flowers, and though tender enough, yet remain beautiful, if fitly planted, right up to the last. At Heckfield the Cactus section of Dahlias grows to a great height, and though their blooms are valued for decorative purposes, it is the single forms to which this new plan of usage opens out a grand future. *A. D.*

Fruits Under Glass.

Vines.—All varieties of late Grapes, including kinds such as Lady Downe's Seedling and Gros Colmar, which take a long time to colour, should now be ripe, and as a means to preserve them in good condition the treatment recommended for ripe Grapes in our last Calendar should be observed, while for the purpose of giving the Vines every advantage in maturing their wood perfectly and developing their buds, as well as affording a free passage for air, which is all-important to the good keeping of the fruit, the sub-laterals, providing the principal foliage is healthy, may be clean cut out. The mulching material upon external borders should now be taken off, and the inert surface soil be carefully removed, so that no strong roots are injured, and replaced with fresh compost of a description similar to that previously recommended for the purpose; over this a coating of dry leaves sufficiently thick to exclude severe frosts should be placed, from which rain must be warded off by sashes or any other means available. The roots of our late and early Grapes, as I have before remarked, are confined to inside borders, but those that produce the mid-season supply are placed wholly in external ones, which are treated as above, and the coverings are not removed until warm spring weather sets in, when it is taken away piecemeal, to avoid a check. Coverings of this kind are productive of good in mitigating both radiation of heat and moisture, and consequently in preserving the borders if they are moist when covered in a healthful condition, the benefit of which is apparent by the satisfactory manner in which Vines so treated push and develope their early growths compared with those which are not nursed in like manner. Where this system is adopted it rarely happens that the borders require water before the time the Vines are started, when, if necessary, a soaking heated to a temperature of about 85° should be afforded them. Such Vines as have the run of both inside and outside borders should, now their fruit is ripe, have the latter, if in an unsatisfactory state, removed and replaced with suitable compost; the mode of procedure has, however, been so frequently described that it is unnecessary to repeat it here. It would be discreet for those who are placed in low situations, where early frosts are prevalent, to protect with hay-bands the portions of stems externally exposed belonging to Vines which have not matured their foliage, for should an early frost occur, as sometimes happens, sufficiently severe to penetrate the stems and cause stagnation of sap, defoliation will follow and weaken the Vines to an extent in accordance with the degree of the maturity of the wood. We have ourselves experienced disappointment from this cause, but injury has by some cultivators been obviated by thawing the stems with warm water, before the sun affected the foliage. Where pot Vines are employed for very early forcing they should be got in readiness by being top-dressed with sound loam and crushed bones, by having the bottoms of their pots examined to see the drainage holes have not become clogged, and by being placed into their permanent quarters for starting by November 1, in a night temperature ranging near 55° if the weather remains mild, but 5° lower should it be cold.

Melons.—Owing to the continuance of exceptionally favourable weather we still find the flavour of Melons excellent, and late ones swelling promise to finish the season now drawing to a close very satisfactorily, for the plants are clothed with substantial foliage, and are without a symptom of disease. These are essential indications of good quality, but will not unfortunately in themselves produce it. With the assistance of fine weather, however, we expect to have presentable fruits well on in November. A very important point in the production of Melons after the present date is the command of the necessary amount of artificial heat to keep the temperature as follows, viz., 70° at night, and 80° by day, which should be allowed to run up to 90° from sun-heat. Early closing should be practised in order to forward the crops, and very little damping will suffice to keep the atmosphere sufficiently moist, while new growths should be closely stopped in, and the fruits fully exposed to the sun. No time is more opportune than the present for procuring a supply of soil; that most suitable is a strong loam from the surface of an old pasture, which should be formed in stacks in such a manner as will prevent rain from penetrating and soddening it.

Peaches and Nectarines.—The Peach season has neared its close; the latest varieties we have in our late house, which is 100 feet in length, are Prince of Wales, Thames Bank, Walburton Admirable, and Lord Palmerston. The fruits of the two former are all now used, and there remain but a few dishes of the two latter varieties. The three former deserve all that can be said in their praise, while Lord Palmerston, which is noble in appearance, is better flavoured than we have ever previously had it, but even in this favourable season it is tough both in flesh and skin, and wanting in piquancy of flavour, for which reasons we have condemned it to be replaced by Sea Eagle, a late variety highly spoken of in reliable quarters. Our latest Nectarines are Victoria and Prince of Wales; the former needs no eulogy from us, the latter is unworthy of it as it is uninviting both in appearance and flavour. Still keep the early houses as cool as possible, and by no means allow the trees to be excited from any cause, or suffer from want of water at the roots; and as soon as they have lost their foliage proceed with the final pruning. There will be but little to do in this way if previous directions have been executed, but should they have been neglected use the knife freely in cutting out useless wood, and avoid as a great evil leaving the young wood crowded. After pruning, the trees should be carefully washed with a solution of Gishurst Compound, in strength 5 or 6 oz. to a gallon of water, and in removing that disagreeable and troublesome pest, brown scale, use a small stiff brush saturated with the insecticide, and in so doing take particular care that the buds are not damaged. Let the house also be thoroughly cleansed, and the borders top-dressed, after the mulching material and surface soil had been removed, with sound calcareous loam mixed with a dash of old mortar and wood ashes. The planting season having now arrived, where trees to be lifted are at hand there should be no delay in getting it done. One of the chief points belonging to the operation is to provide the borders with ample drainage, which should consist of an efficient main drain and about 10 inches of rubble; the borders may range 2½ feet in depth, and be firmly formed of strong loam mingled more or less freely, according to its nature, with old mortar and wood ashes. In planting remove the jagged points of the roots, spread them out evenly, cover with a few inches of the compost, which should be well firmed; and finish by mulching with short manure, and giving enough water to settle the soil around the roots. Trees that are shifted before all the foliage falls will be benefited by being for a time occasionally syringed. *Thomas Coomber, The Hendre Gardens, Monmouth.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 13	Sale of 1000 lots of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 14	Sale of Natural History Specimens, at Stevens' Rooms Meeting of the Fruit and Floral Committees, at the Royal Horticultural Society's Gardens, and Monthly Show Sale of Established and Imported Orchids, at Protheroe & Morris' Rooms
WEDNESDAY,	Oct. 15	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Camellias, Azaleas, and Bulbs, at Protheroe & Morris' Rooms. Sale of Fruit Trees, at Osborne's Nursery, Hampton, by Protheroe & Morris. Clearance Sale of Greenhouse Plants, at Olantigh Nursery, Chigwell, by Protheroe & Morris.
THURSDAY,	Oct. 16	Sale of Imported Orchids, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Nursery Stock, at Ivery's Nursery, Dorking, by Protheroe & Morris. Sale of Orchids and Plants, at the Castle Nursery, Lower Norwood, by Protheroe & Morris.
FRIDAY,	Oct. 17	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 18	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris Rooms.

THOSE who look upon horticulture simply as a more or less costly luxury or recreation would take a different view of the subject could they but witness the grand display of POTATOS in the transept of the Crystal Palace. Horticulture may be a recreation, the purest and best of its kind, but it is something much more than this, and as regards the food of the people it is scarcely less important than agriculture itself. It stands on a higher platform than agriculture, as much more skilled labour and much more science are bestowed upon it than the ordinary farmer thinks well to employ. We think the farmer is wrong in this matter, but whether or no, the object for us to aim at is to secure progress so far as possible from good to better, from little to plenty. The show at the Crystal Palace is eminently calcuated to promote both objects. No means are better suited to teach the grower what sorts he should grow according to circumstances, none are better adapted to show the sterling qualities of some of the older sorts, the promise of others, and the worthlessness of the remainder. Selection, cross-breeding, hybridisation, all are brought to bear, and aided by judicious cultivation founded on long experience have made Potato culture a profitable business. This year, too, there has been a general absence of disease, which has been all in our favour, but for one circumstance, that we fear has to a large extent rendered nugatory the elaborate experiments carried out by the Scientific Committee of the Royal Horticultural Society; but that is a matter which the general public will learn with unruffled complacency. It will not, however, we trust, lead to the discontinuance of the trials another season. Much is said, and very unfairly sometimes, as to the little that is done for the advancement of practical horticulture by the Society. The fact is, the public sees only the shows and marvels at what it sees or sneers at the admitted evils connected with exhibitions according to the mood it happens to be in. Of the really valuable work done so quietly and unostentatiously at Chiswick, the outside world knows nothing. This is in no small degree owing to the irregular publication of any record. No number of the *Journal* has appeared for some years, and although the horticultural Press in some degree supplies the deficiency, it cannot be expected that its conductors should overweight their pages with detail, which, however valuable for reference, is unsuitable for the general reader. Be that as it may, it is unfortunate for the best interests of the Society that the trials and experiments carried out at Chiswick are not made more widely known. This year, in addition to the particular experiments we have alluded to, and of which we shall probably shortly be able to give some account, a trial has been made of numerous seedling and new or so-called new varieties, with a view to determine their qualifications. This is a most important complement to the display at the Crystal Palace. Some of the principal results arrived at are given in another column.

Another indication of the magnitude of horticultural operations and their importance to the trade of the country and the physical welfare of the people is afforded by the publication of the fifth edition of Dr. HOGG's most useful *Fruit Manual*. A quarter of a century ago it was a modest-looking book, small in size, and with comparatively few pages. It has expanded into a bulky volume of nearly 800 pages, of which more than 250 are devoted to Apples alone, more than 200 to Pears, 44 to Grapes, 50 to Peaches and Nectarines, and so on in proportion.

We shall have other opportunities of alluding to this indispensable volume. In the meantime we may say that Dr. HOGG has elaborated and improved his scheme of classification of Apples, and has given the outlines of a similar scheme for Pears, adding certain details on which we may hereafter comment. We do not think we exaggerate when we say that this fifth edition is five times better than the earlier ones, and that the nine years which have elapsed since the publication of the former edition have been profitably spent in elaborating and improving the present.

We find, on cursory inspection, that comparatively little attention has been given to the influence of locality or stock on the quality of fruits; not by any means that these matters are entirely passed over, but that they receive less systematic treatment than their importance deserves. In truth, to do justice to this part of the subject, a separate volume, giving details for the whole country, and not from a few districts only, would be requisite. We may hope that the report of the Apple Congress, which is in the press, will supply full details of this character as regards the Apple. In country districts more particularly a larger, fuller knowledge of good varieties and varieties suitable for cultivation in particular localities is demanded. Cottagers, and people of higher position and larger means, still too often go on growing indifferent sorts simply because their fathers did so before them—an excellent practice when the results are good, but which would be better altered when comparatively worthless scrubs continue to be grown in place of the really valuable sorts evolved by modern progress; and this is as true of Potatos as it is of hardy fruits generally. The cost and trouble of growing approved good sorts are not greater than are demanded by inferior varieties. It is true that for market purposes quality is often sacrificed to quantity—to the requirements of place and season, the convenience of carriage, the state of foreign competition, and other matters which interfere with the realisation of the abstract good. Nevertheless, the British public may in the long-run be trusted to appreciate the better qualities of produce if it have the opportunity of becoming acquainted with them, and to endorse with practical approval the process of evolution which has converted worthless Crabs into fine table fruit, and caused a development in the Potato which would make RALEIGH, and GERARD, and BACON stare with astonishment, all sympathetic though they undoubtedly would be, with the results of the movement of which they were in some sort the originators.

—— THE LATE MR. BENTHAM.—The proposal to place a memorial to Mr. BENTHAM in the Kew Herbarium, in which so much of his lifework was accomplished, including the *Flora of Australia and Hong Kong*, and the magistral work undertaken in connection with Sir JOSEPH HOOKER, the *Genera Plantarum*, has, we are pleased to say, met a favourable response from many, who are pleased to have the opportunity to mark their sense of the exceeding value of BENTHAM'S disinterested labours. What precise form the memorial should take must depend on circumstances. In the meantime the Editor of this journal would be pleased to receive the names of those desirous of co-operating in the matter. We may add that a lengthened biographical notice of Mr. BENTHAM appeared in the last number of *Nature*, containing a large number of most interesting and remarkable details as to the early life of the great botanist, and which show a new phase of character, which will be read with astonishment by those who have hitherto considered Mr. BENTHAM in the light of a shy recluse and an untiring worker.

—— THE SPYERS' MEMORIAL.—Shortly after the death of the well-known Orchid grower several of his friends contributed to a fund raised for the benefit of his widow and children. The sum of £218 was forwarded to the Editor of this journal, as Treasurer to the fund, from various subscribers, and it will be satisfactory to them to learn that this money has been expended on the erection of a suitable cottage adjoining the nursery of Mr. F. SANDER, of St. Albans. The cottage is now completed, and has been erected under the supervision of Mr. SANDER, and we can testify to its convenience and suitability. The actual cost of the erection has been £236, and the freehold land on which it is built has cost a further sum of £30, so that an additional sum of £50, or thereabouts, will be required to cover the total expenses, and recoup Mr. SANDER, who has been responsible for the outlay. The legal arrangements have been generously undertaken by Mr. PHILBRICK and Sir TREVOR LAWRENCE, and it is understood that the property will be held in trust for the benefit of Mrs. SPYERS and her children, and that in the event of their death the cottage will revert to the Gardeners' Royal Benevolent Institution. It is hoped that these arrangements will be satisfactory to all parties. To Sir TREVOR LAWRENCE, Mr. SANDER, and Mr. O'BRIEN, the thanks of all concerned are due for the active interest they have shown in the matter. It need hardly be said that Mrs. SPYERS is deeply sensible of the efforts made on her behalf.

—— "FORESTRY," having changed hands, Mr. FRANCIS GEORGE HEATH has retired from the editorship.

—— THE RIVIERA.—Messrs. TRÜBNER & CO. promise in the forthcoming publishing season *The Wild Flowers of the Riviera*, by CLARENCE BICKNELL.

—— ROSES.—"E. V. B." is engaged on a new book on Roses, in which numerous quotations from the poets of all countries and times on the subject of the Rose will occur. It is to be published by Mr. ELLIOT STOCK.

—— "TREE GOSSIP."—Messrs. FIELD & TUER, of the Leadenhall Press, announce for immediate publication *Tree Gossip*, by FRANCIS GEORGE HEATH.

—— INTERNATIONAL FORESTRY EXHIBITION, EDINBURGH.—We are requested to state that Messrs. LITTLE & BALLANTYNE, of Carlisle, have been awarded a Gold Medal for their collection of ornamental and forest trees, and a Silver Medal for tree seeds and forest tools, and not a silver one only, as previously reported.

—— PLUMBAGO LARPENTÆ.—On looking over the whole of the Chiswick Gardens of the Royal Horticultural Society, no hue of blue could be discerned that could compare with the rich colour found in this plant. On one side of the rockwork, about half way up, there is a large patch of it, thoroughly established in a position that it appears to like very much, and rich indeed in its regal deep blue and lilac flowers. Other hues of blue, such as that of Salvia patens, or the blue of Violas, looked poor and washed out by the side of this Plumbago. This plant never appears to do so well as when it is raised above the level of the ground. Give it a slightly elevated spot, on which to grow, a sandy soil in which it can root freely and where its roots can penetrate for some distance, and let it be a sunny position, and then this charming and useful plant will be one of the gems of the garden.

—— EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY.—The usual exhibition of Chrysanthemums, &c., will take place in the Lyric Hall, Broadway, Ealing, on Wednesday, November 5. Handsome prizes are offered for twenty-four cut blooms, sixteen incurved and eight Japanese, open to all England.

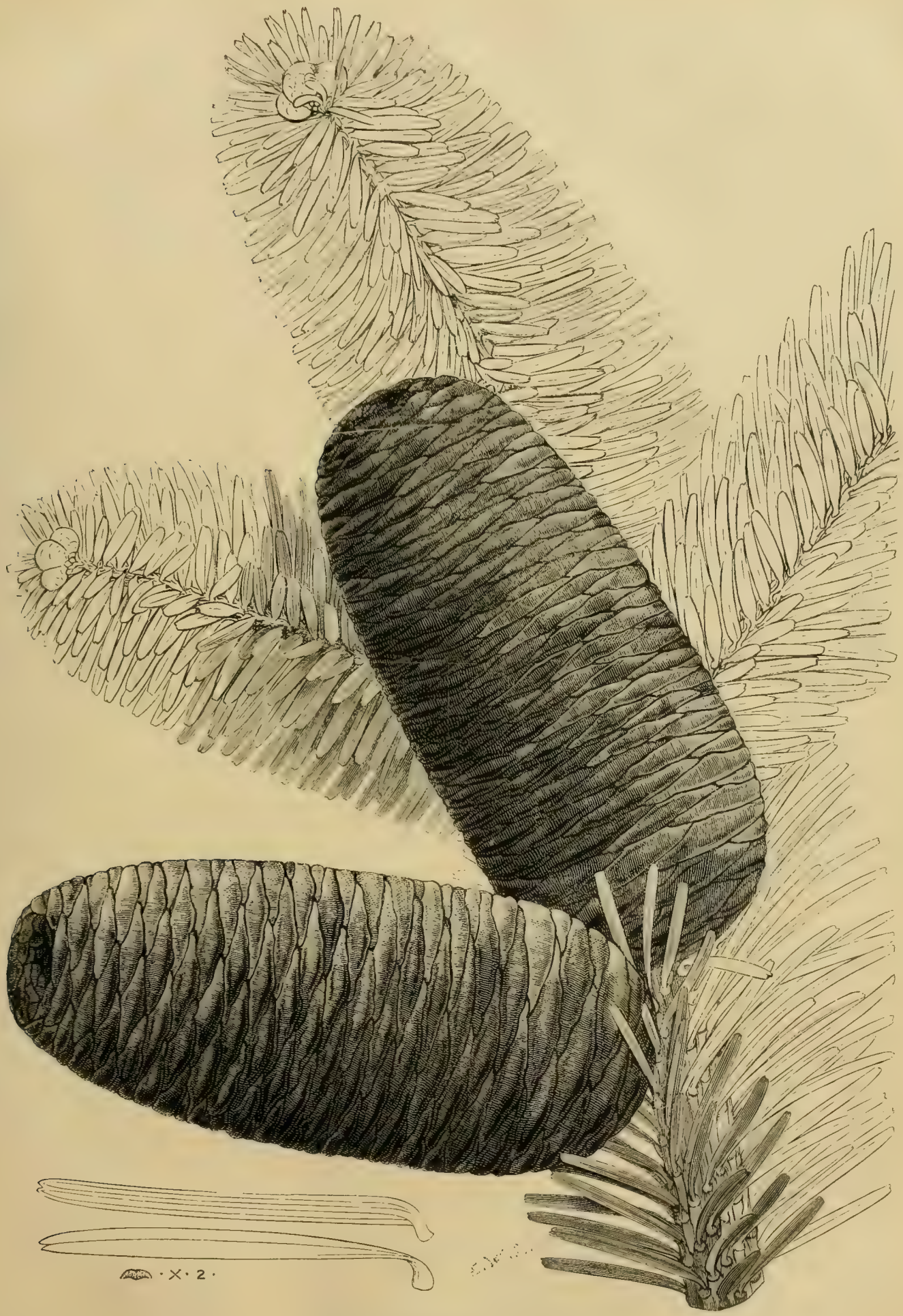


Fig. 86.—Abies Webbiana. (see p. 467.)

—— Plumeria lutea.—The members of this genus of Dogbanes afford a curious instance of trees with stems and branches of a fleshy or subsucculent nature. The present is a good example, and comes from Peru. Like the rest, it delights in a warm, moist atmosphere when making its growth, with a liberal supply of water at the roots. After growth is completed, and the plant has done flowering, water should gradually be withheld to induce a state of rest. The temperature should also be lowered, and the atmosphere kept tolerably dry in order to imitate its natural conditions and ripen the wood. The yellow flowers are large, somewhat suffused with pale purple or pink, and produced in cymes terminating the current season's growth. There is a tall flowering specimen in the Water Lily-house at Kew in full leafage, a decided improvement on those species that flower after the leaves have fallen.

—— Darlingtonia californica.—In the well kept establishment at Mount Merrion, near Dublin, there is a magnificent specimen of the above growing in a north house, with upwards of two dozen pitchers, some of which are fully 3 feet in height, and measuring 8 inches across the wings. Mr. Welsh, the gardener, in addition to this, grows the interesting Australian Pitcher plant, Cephalotus follicularis, with pitchers well coloured and of a good size. This he grows in an intermediate temperature.

—— Kniphofia Macowani.—It is surprising in many instances how slowly many good garden plants get disseminated. The subject of this note, although introduced ten years ago, is comparatively a scarce plant, the distinctness and beauty of which ought to be sufficient recommendation and inducement for hardy plant lovers to possess it. Being dwarf, and less bulky than the majority of those cultivated, a suitable place on the rockwork might with propriety be set apart for its reception. The individual flowers are of a beautiful soft orange-scarlet colour on the exposed side, but otherwise pale yellow. The tube is uniformly cylindrical, and characterised by the absence of the constriction near the base, and the dilatation below the mouth that is so conspicuous a feature in most species. The shortly six-lobed spreading limb is rather unique in its way, and resembles that of many Heaths. The plant is figured in the *Botanical Magazine*, t. 6167, and is now flowering freely in the Kew collection.

—— Lectures at the Forestry Exhibition.—The following lectures have been delivered in connection with this Exhibition:—Dr. Lyons, M.P.: "Forestry in Europe and Asia." Professor W. R. MacNab, of Dublin: "On a Piece of Wood." Ed. Jack, Esq.: "The Forest Resources of New Brunswick." Professor McIntosh, of St. Andrews: "Timber Boring Marine Animals." Major Bailey, R.E.: "Forest Surveys in India." Dr. Howitz, of Copenhagen: "Eucalypts at Home and Abroad." James Meldrum, Esq.: "The Forests of Johore." Dr. Crombie Brown: "The Aridity of Spain; its Cause and Cure."

—— Cassia corymbosa as a Bedding Plant.—It is surprising how well this old-fashioned greenhouse plant is doing in one of the circular beds at the side of one of the broad walks at Chiswick. It has grown vigorously, and is now blooming freely, handsome alike both in foliage and blossom.

—— Outdoor Grapes.—Having had such a truly ripening summer it may naturally be expected that outdoor Grapes should just now present a respectable appearance. One thing seems certain, and that is, mildew is on these outdoor Vines exceedingly rare, the long-continued drought and warmth having evidently proved inimical to its existence. With its absence, conjoined to the presence of so much solar heat outdoors, Vines have had an excellent time of it, and the Grape crop should not only be good, but abundant. It would seem as if those responsible for the arrangement of the schedules of prizes which are being offered during the season at South Kensington had some prophetic conception of the nature of the summer when they agreed to introduce classes for six bunches and two bunches of outdoor Grapes at the next show, to be held on October 14 and following days. As the prizes are good, the competition should be large, and a very interesting display of outdoor fruit should result. Some difficulty may perchance present itself in the showing satisfactorily whether the Grapes shown are in all cases of outdoor growth, but the honesty of the exhibitors must prove the best safeguard. Where wood of Vines has in the open air ripened so admirably, fruit certainly should be not less well matured.

—— Pomological Congress at Rouen.—From the *Journal of Horticulture* we learn that the Congress at Rouen awarded a Gold Medal to the collection exhibited on behalf of the Woolhope Club by Dr. Bull. Herefordshire Apples seem to have been superior to those of Normandy, the Pears were not far behind, while the Black Alicante Grape was far ahead. Dr. Hogg was presented with the Gold Medal of the Society, in recognition of the services he has rendered to the study of Pomology.

—— Fungus Foray in Epping Forest.—The annual fungus foray of the Hackney Natural History Society took place at Epping on Saturday, September 27, when six species were determined which had not previously been recorded in the Epping flora, and two of these were new to this country. The latter were Hydnum diversidens, Fr., found by Mr. H. Wharton and Mr. J. C. Webb, and Boletus duriusculus, Kalch., both being edible. On the whole but few fungi were found, owing to the general dryness of the season.

—— The Gardeners' Royal Benevolent Institution.—At a committee meeting of the above Institution His Grace the Duke of Westminster was elected President in the room of the Duke of Buccleuch, deceased; and George Lambert, Esq., Chairman at the late anniversary, was elected Vice-President in the room of H. G. Bohn, Esq., deceased. It has also been decided to have an addition to the list of pensioners in January next; but in consequence of the few vacancies the number to be elected will not be so large as last year. The Augmentation Fund has risen to £715, but £400 more are wanted, or the Institution will lose the £500 promised by a would-be benefactor.

—— Lilium auratum.—According to reports from various parts of England, home-grown Lilium auratum roots are very small, and in many cases an entire failure, owing to the very dry season. Last October there were submitted to us sample bulbs, with the statement that the secret of producing home-grown bulbs had been solved. It was thought at the time the great size of the bulbs was the result of chance, but this year Messrs. Collins Bros. & Gabriel, 39, Waterloo Road, have sent us samples of home-grown bulbs of this season's growth, and taking into consideration the very dry season the bulbs are exceptionally fine. Weight and girth of roots sent:—1. 1 lb. 8½ oz., 16 inches in circumference; 2. 1 lb. 5¾ oz., 15¾ inches in circumference. 3. 1 lb. 5 oz., 15½ inches in circumference. 4. 1 lb. 5 oz., 15¼ inches in circumference.

—— Lespedeza bicolor.—Comparatively few hardy shrubs flower so late in the autumn, consequently this recent addition to the outdoor garden is of sufficient importance to deserve our prime consideration. It enjoys a wide distribution in Northern China and Japan, and is therefore tolerably hardy in our climate. If the slender woody stems are cut down annually they will shoot up afresh to the height of 2 or 3 feet, and flower with remarkable freedom in the axils of the upper leaves. A number of plants in the Leguminous collection in the pleasure-grounds at Kew are very attractive. The flowers are deep rosy-purple, with a paler keel, but in a wild state are prone to variation. A figure appeared recently in the *Botanical Magazine*, t. 6602.

—— The Tulip.—There is much reason to fear that the cultivation of this once popular florists' flower is in danger of becoming seriously diminished. During the past few years death has removed a few leading growers, and veterans at the work are asking, not without some concern, Where are the young men that should come forward with a view to taking our places? Each occasion of holding the National Tulip Exhibition at Manchester sees a recruit or two taking their place in the ranks, but the newcomers do not compensate in point of numbers for those who fall aside from the main body. It may be that young men find a greater variety of recreations to engage their attention, and floriculture suffers in consequence. Twenty-five years ago there were not nearly so many social occurrences and enjoyments as there are in the present day, and floriculture offered more markedly than it does in these times attractions for those seeking some pleasant recreation. There is this to be said in favour of the Tulip, that it engages the constant attention of the cultivator only for a period of the year. The time to plant is early in November, and as preparatory to this there must be due preparation of the bed; some attention is necessary during the winter in the way of protection and general oversight; and close and constant supervision from the time that the flower-buds show themselves until the flowers fade. There are now such fine varieties in cultivation that it would be a pity if they became lost to cultivation through lack of cultivators, and yet this danger is probable. Time was when numerous and fine collections of Tulips were grown about London. It would be satisfactory to know that a new interest is being awakened in this gorgeous flower within the metropolitan area, but at the present time we look in vain for the faintest indication of it.

—— Yeovil Chrysanthemum Show.—An exhibition of Chrysanthemums and other plants, flowers, fruits and vegetables, is announced to take place in the Town Hall, Yeovil, on November 18. It appears to be the first attempt to establish an exhibition of Chrysanthemums in this town.

—— Potatos.—There seems to be a general consensus of opinion amongst market growers of Potatos, that prices were never so low as they are at present, for even good samples of the esculent. A large grower in the metropolitan district recently stated that one of him men has accepted as low as 40*s.* per ton rather than bring the load home again, whilst from 50*s.* to 60*s.* was the ruling figure per ton. It must be understood that this exceedingly low price is offered and paid, not for crops on the ground, but rather for good 'picked ware after they have been carted a long distance to the market. This low price must not be taken as showing that the crop generally is relatively an unusually large one, as that would be an error. We have seen seasons when a much larger and better sample per acre has been lifted, but never a year in which so large an area of land has been planted with Potatos. Last year the crop was an abundant one, and because prices ruled somewhat low large stocks were held over and planted this year in the hope that it would prove the most profitable way of utilising the tubers. The result seems simply to have been that the immense crop of the year has glutted the market, and no one who can afford to hold his hand will send Potatos for sale. Still, there seems to be such a vast number of growers who must sell both to live and to pay their rents, that no abatement in price follows or indeed may be expected to follow for some time. The introduction of robust free-cropping and fairly safe disease-resisting sorts has inspired general confidence in Potato culture, hence the increased breadth of land put under cultivation. Perhaps those who can afford to hold over for a few months will find their reward, whilst those who wish to secure a store of good tubers cheaply should make the most of the present abundance.

—— The Autumn Revival.—We are so accustomed to regard the spring-time as the only period of yearly revival in Nature that it seems almost an anachronism to place such a heading as the above before a paragraph. So, too, are we in the habit of associating the autumn with the decline and decay of vegetable life for the year that the intimation that such a season is intimately connected with renewed life and vigour seems hard to credit, and yet so it is, as all gardeners and students of Nature can tell, although there can be little doubt but that this revival is more generally seen in gardens than in places that are purely natural in character. The summer has, by reason of its heat and drought—both singularly long with us—promoted unusual restfulness with many hardy plants, and now that cooler weather and genial showers prevail these plants are once more awakening from sleep, and, like giants refreshed, are bursting out into renewed growth and vigour. We see this renewed life specially in all the hardy Primrose family, which has materially suffered from drought, and in many cases lost every leaf. Daisies, too, have gone to an unwonted rest; so, also, have Anemones; and Violets that have been hard pressed by drought and spider now put forth new foliage, and are becoming green and beautiful. All bulbs left in the soil are already feeling the exciting

influences of the cooler temperature. These are but a few of the many hardy plants which, revived and renewed, are bursting forth just as though the month were April and not October. Even in our kitchen gardens the renewal of growth seen in all kinds of winter vegetables has been remarkable, and leads to the hope that the coming winter season may not be too severe for the sake of the abundant growth thus made so vigorously yet so late.

—— West Kent Natural History, Microscopical, and Photographic Society.—The annual cryptogamic field meeting will be held on Saturday, October 11 next. Dr. Flaxman Spurrell will meet the members and their friends at the Abbey Wood Station on the arrival of the train leaving Cannon Street Station at 2.25 P.M.; St. John's, at 2.38 P.M.; Lewisham, at 2.42 P.M.; Blackheath, at 2.45 P.M.; and conduct them through Abbey Wood, and, by the kind permission of Messrs. Chillingworth, Mitchell, and Stapeley, through their private grounds to Erith. Tea, &c., at the "Prince of Wales" Hotel, Erith, at 6.15 P.M. In order to make the necessary arrangements, members are specially requested to advise the Hon. Secretaries, Messrs. Henry Hainworth and Hugh Wilson, as early as possible, of their intention to be present at the meeting.

—— Chrysanthemum Show at Devizes.—For the past three years or so a capital exhibition of Chrysanthemums has taken place in the Corn Exchange, Devizes, in aid of the Benevolent Fund of the town. In addition, a sale of useful and fancy articles takes place in the same building, and the proceeds from both are handed over to the district visitors for distribution to the deserving poor. The exhibition for the present year will take place on Tuesday, November 18, and handsome prizes are open to all England. Mr. C. H. May, The Elms, Devizes, acts as hon. secretary, and the arrangements of the show are made by Mr. Thomas King, Devizes Castle Gardens.

—— Begonias.—Mr. Robert Owen, of Yewdon, Henley-on-Thames, has sent us a large box of very handsome blooms of the tuberous Begonia, which betrayed slightly the effects of several degrees of frost that has been experienced in that locality, but which has not always extended to higher lying situations around, as we were informed by others. The blooms exhibit all the points of colour, form, and habit that are now most prized, in some instances in a very marked degree. Especially noticeable in most was the size of the interior petals, and the increased roundness of all. The colours were as varied as could be found in the finest collections, very fine being a pure single white, the reflex of whose petals was not marred by a pink tinge, as is sometimes seen. A single canary-yellow was likewise good in form and colour. The footstalks of most of the flowers possessed great strength, and Mr. Owen says that his strain is so strong in this respect that the blooms are carried fairly well above the foliage—a great gain when the plants are used for bedding, or for the decoration of the greenhouse. This strain is the result of five years' careful selection and hybridising. The foliage is very short, and lies rather close to the ground, the flower-stems semi-erect, and in some cases quite so. The raiser intends to take possession next month of larger premises at Maidenhead, and with that view has already erected five ranges of houses of large capacity for the cultivation of the Begonia and other first-class florists' flowers.

—— National Chrysanthemum Society.—The first meeting of the Floral Committee of the above society was held on Thursday evening last, at the "Old Four Swans" Hotel, Bishopgate Street, City. Several very interesting exhibits of cut flowers of Chysanthemums were staged, and the following awards were made:—

First-class Certificate to Colonel J. R. Mallock of Pinewood, Bagshot, for Japanese Chrysanthemum, Margot.

First-class Certificate to Mr. Davis, Camberwell, for Japanese Chrysanthemum, Mademoiselle Lacroix.

Vote of thanks to Mr. Davis, for a collection of early flowering Chrysanthemums, including several new and rare varieties.

This specially appointed committee, consisting of the following gentlemen—Mr. Berry, Roehampton; Mr. Butcher, Barnet; Mr. Davis, Camberwell; Mr. Kemp, Clapton; Mr. Lowry, Mill Hill, N.W.; Mr. Payne, Stamford Hill; Mr. Townsend, Putney; Mr. Springbet, Waltham; with E. Sanderson, Esq., and R. Ballantine, Esq., as Chairman and Vice-Chairman respectively; and W. Holmes, as Hon.-Sec.—will meet at the "Old Four Swans," Bishopgate Street, City, at 7 o'clock on the evenings of October 16 and 30, November 27, and December 11, specially to consider the merits of any new or rare varieties of Chrysanthemums that may be submitted.

—— Yellow Cactus Dahlia.—Mr. Cannell sends us a pure yellow form of the so-called Cactus Dahlia, which is very pretty and in which the florets are much flatter than in the ordinary quilled varieties. It is a mistake to assign these, as some do, to the Juarezi type: these are merely variations of the ordinary show Dahlias.

—— Sale of M. Oscar Lamarche's Orchids.—Most of these Orchids, which came to England for disposal under the hammer, were sold by Messrs. Protheroe & Morris, at their rooms, 67, Cheapside, when a spirited competition took place for the best plants. We have space to notice only a few of the higher-priced ones, viz.:—Vanda Lowii, from M. Schiller's collection, Hamburgh, which was 4½ feet high, with thirty-two leaves and two young growths, brought £68 5s.; another Vanda Lowii, £32 11s.; Vanda tricolor Wioti, in bloom, rare, £10; an Epidendrum prismatocarpum, a fine piece, with over a hundred bulbs, £18 18s.; a Cypripedium caudatum, £8 10s.; a Cattleya labiata Pescatorei, £24; an Anguloa Clowesii, £14 14s.; and a Cattleya Warneri, £21 11s.

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Oct. 6, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather during the first few days of this period was showery and unsettled, but afterwards became fine and dry, though at many stations some fog or mist prevailed. The temperature has been about equal to the mean in the "Channel Islands" and in "Scotland, N.," and slightly above it in the north and east of Scotland, but from 1° to 3° below it in all other districts. The maxima, which were recorded on different days in the various parts of the kingdom, ranged from 60° in "Scotland, N.," to 65° in "England, E.," "England, S.," and "Ireland, S." The minima were registered in most places on the 5th, when the thermometer fell to 30° in the "Midland Counties" (at Loughborough), to 32° in the east and south of England, and to between 33° and 35° in Ireland and other parts of England; over Scotland the lowest readings were between 37° and 39°, while in the "Channel Islands" the minimum was 49°. The rainfall has been less than the mean in all districts, the fall being especially slight in the east and south. Bright sunshine shows a considerable increase in duration; in "England, S.W.," 59 per cent. of the possible number of hours was recorded; in "Scotland, E.," 51 per cent.; and in most other districts between 40 per cent. and 50 per cent. In "Scotland, N.," however, the percentage was only 29. Depressions observed:—During the first half of this week depressions continued to travel in a north-easterly direction outside our extreme north-western coasts. The wind remained moderate or fresh from between south and west over England, but in Ireland and Scotland a strong southerly gale prevailed on September 30. By the morning of the 4th, however, the barometer had risen quickly at all our stations, and an anticyclone, which subsequently extended as a band of high pressure from Ireland to the south of Scandinavia, had appeared over our south-western districts. The wind consequently became light or moderate generally, and gradually veered from west to north and north-east at our southern and south-western stations, while light westerly airs or calms were experienced in the north.

—— Gardening Appointments.—Mr. George Potts, late Gardener to Lord Teynham, Tower House, Woolwich, has been appointed Gardener to Sir William Ogg, Oakfield, Dulwich.—Mr. C. A. Pearse, Gardener to Sir Francis Stapleton, Bart., Grey's Court, Henley-on-Thames, as Gardener to the Dowager Viscountess Downes, Baldersby Park, North Riding, Yorkshire.—Mr. R. Cox, late General Foreman at Daylesford House Gardens, Chipping Norton, as Head Gardener to Lord Norton, Hams Hall, Minworth, Warwickshire.

ABIES WEBBIANA.

For the cones whence our illustration (fig. 86) is taken we are indebted to Mr. A. D. Webster. Few, if any, of our Conifers are more handsome than this denizen of the Himalayas. The bold overlapping densely crowded foliage, of a silvery-white on the under-surface, and the noble dark purple cones, indeed render it a most striking species. The botanical history is well known, and the tree is adequately described in the text books; it is only necessary for us therefore to allude to one or two points of structure, such as the leaves, which diverge on each side from the branch, leaving a wide furrow or parting between them on the upper surface. The buds are subglobose, pale cinnamon-brown, and covered with resin. As to the leaf structure some discrepancy exists between the accounts given by Bertrand and by MacNab; the former says the structure is the same as that of A. Pindrow, which he further states has a disconnected scanty layer of strengthening fibres (hypoderm) beneath the epidermis; MacNab, however, describes the hypoderm as continuous, and so we also find it. The outline of the leaf-section is different in the two forms; in Webbiana the margins are pointed and recurved, while in Pindrow they are blunt, rounded, and but little recurved. These little details are important, because while in the opinion of some Webbiana and Pindrow are distinct species, in that of others they are only two forms of one and the same. Certainly in English gardens the two look different, and the question whether they belong to one species or not is one which will be answered by each observer according to his proclivities. Brandis, in his *Forest Flora of North-Western and Central India*, leans to the view that the two forms are varieties of one species ranging from Affghanistan on the west to Bootan and Sikkim on the east.

The form called Webbiana occurs on rocky ridges at higher elevations, and is a smaller tree with shorter less bifarious leaves and usually thicker and shorter cones. Var. Pindrow occurs on better soil in sheltered places and is a large tree with longer [narrower] leaves and generally cylindric cones. P. Webbiana occurs in various parts of the Himalaya at elevations of from 8000—13,000 feet, forming extensive forests mixed with Maples and Birches, and often associated with Picea Morinda and Pinus excelsa. In Sikkim it occurs with Yews, Oaks, Rhododendrons, and Bamboos. It thrives best in cold damp glens. From the dark colour of the adult foliage it gives the name of "black forests" to several mountain forests of the north-west Himalaya. In this country it is "spring tender," owing to the early period at which it starts into growth. In its native country it attains a height of 120—150 feet and a girth of 9—15 inches. The tree forms a tall cylindrical crown, like that of a Lombardy Poplar. The bark of the young trees is silvery-grey, becoming darker as it advances in age. The wood is whitish, inodorous, and soft, useful for indoor constructions, but not suitable for use where exposed to the weather.

On the Jhelum, according to Brandis, the leaves are used as fodder, and are stored for winter use. Wallich, who originally described the tree, speaks of a violet dye being yielded by the cones in Nepal. Captain Webb, after whom the species was named by Wallich, first met with the plant in Nepal, and in Lambert's *Genus Pinus* occurs the following passage from his pen as to its beauty:—"The silvery hue of its bark, the beautiful contrast of the leaves with the rich purple of the cone glittering with globules of transparent resin, produce, in combination, one of the most striking objects that can well be imagined."

Major Madden, in his valuable paper on Himalayan Conifers, reprinted in vol. v. of the *Journal of the Horticultural Society*, London, 1850, says that Pindrow grows at lower elevations than Webbiana; and also that in habitat, and several marked peculiarities and constant differences between the two forms, which the natives attribute to climatal causes:—"This persuasion of the force of circumstances in the transmutation of species is by no means uncommon in the Himalaya." Hooker mentions Webbiana as the most abundant Pine in Sikkim. Veitch (*Manual of Coniferæ*) considers A. Pindrow to be distinct from Webbiana, and more tender in cultivation. As to Webbiana he recommends that young plants should be protected by a slight covering during frosty weather, so small an amount of trouble being well worth taking to preserve so beautiful a tree. As the tree gets older it ceases to need even this precaution.

THE NATIONAL FOOTPATH PRESERVATION SOCIETY.

A PRELIMINARY meeting to inaugurate this Society took place on the 30th ult., at the temporary offices, 6, Fetter Lane, Fleet Street, London, Mr. P. W. Freeland in the chair, who, having briefly opened the proceedings, called upon Mr. Allnutt, the promoter, to state his views on the Association.

Mr. Allnutt then explained at some length the objects of the Society, viz., to preserve to the public foot and bridle paths, also all rights of way by land and water, vacant spaces, such as village greens, &c. The Society will also advocate the purchase of land near towns and villages for public recreation grounds. The Society was to be a central Society from which branches should be established at various towns all over the country. At Henley, Reading, and Birmingham there were already local societies in existence; but in many places where footpaths were encroached upon no protective organisation existed, and this want the present Society proposed to meet.

The Rev. J. M. Taylor said that it was most important to preserve to the public the numerous footpaths in the country. Footpaths, he said, were continually meddled with by the landowners, and there was a frequent tendency to narrow then until it was an impossibility to walk through a field of corn without brushing the Wheat on either side. There ought to be a 4-foot track, but farmers and others in many instances ploughed up the footpath so that it could not be defined. He did not know if there was a specified width to which footpaths should extend.

Mr. Hugh Browne said that one of the objects of the National Footpath Preservation Society was to get a settlement of that question by obtaining a minimum width fixed by law.

The Rev. J. M. Taylor then spoke of a labourer in Buckinghamshire, who, when going though a field of Wheat on a public footpath got wet up to his thighs; he straightway returned home and obtained a sickle, with which he cut the Wheat right across the whole field until the footpath was wide enough to walk over without a person getting wet through. The farmer summoned him, but the magistrate said, that the defendant was perfectly in the right, as there should have been sufficient room left for him to have gone through the field, and not a mere hare track. Mr. Taylor then spoke of the value of footpaths in his locality—his parish being very much scattered, and stated that it would be a great boon to the poor if the existing footpaths were properly defined.

Mr. Allnutt remarked that the paths should not only be shown on the Ordnance maps, but a description of them, which he thought was of equal importance. should be printed.

Mr. Hugh Browne (solicitor, Nottingham), in an energetic speech, said he thought the difficulties for the Society to overcome were twofold, viz., bad law, and bad administration of bad law. The feudal system which lawyers have invented has very little historical basis except on the right of might. The lawyers assume that the landowners have created or dedicated the footpaths which cross their land. This presumption is untrue, and is bad law. Then, as to the administration of bad law. The first people who have to deal with the footpaths are the county magistrates, and these magistrates are themselves landowners. A boy is summoned for trespassing on a footpath he has been accustomed to use—perhaps he has taken some Mushrooms—he is told that he has no right there; the boy replies that he has always been accustomed to go there; to which the magistrates reply that it was only by favour; and so this charge of taking Mushrooms is the first step taken towards closing the path. Mr. Browne then referred to the action of the magistrates, stating that in his own experience he had found the unpaid magistrates were better disposed towards the maintenance of public rights than the paid magistrates, the reason being that the unpaid were subject to the criticism of the Press, while the paid were practically free from such criticism, and could, and did, do as they pleased. Some time ago a footpath leading from Kirkby to Newstead was stopped by a landowner. The case was taken before a jury, but it was a notorious fact that the jury were biassed, and although most conclusive evidence was adduced that the path had been a public path for very many years, the jury were directed to find a verdict adverse to the public right of user, and some poor men who had ventured to defend the public right which they and their fathers had held for two generations, were cast in costs of some £200, and also the legal liability to pay a considerable sum to the landowner, but which, the speaker added, that gentleman, to his credit be it said, had the honesty never to ask for. Mr. Browne then described the efforts of a landed proprietor to stop a footpath near Newstead Abbey in which he was eventually successful, and stated that such attempts were constantly being made in the country, with, in the main, equally successful results. A society like the National Footpath Preservation Society, would unite the scattered efforts of those who stood up against these practices. It should be made known throughout the country that wherever there is an infraction of the law by the stopping of footpaths the law will be appealed to. A few years ago a bicyclist could be ridden down with impunity by any man on horseback or in a carriage, but the bicyclists formed a society and now it is known that if a man is ridden down he has a society at his back to punish the offender, and less is heard of such outrages. Such a society as this should be supported by all politicians irrespective of party, the object being simply to protect the rights of the people. Let the Eighth Commandment apply to men who robbed the people of these footpaths—if a man is a thief we wish to have him prosecuted, and why should not the same rule apply to the land robber? If once it is generally known that imprisonment will ensue in the case of a theft of a footpath, rely upon it there will be no more such instances.

Mr. Simmons then proposed, and Mr. Browne seconded, that Mr. Henry Allnutt should be secretary to the Society, Mr. Simmons remarking that he had known Mr. Allnutt many years and he was sure the Society could not be represented by a more able or experienced gentleman.

FLOWERS IN SEASON.

MR. WARE sends us some lilliputian flowers which are both interesting and pretty. They would adorn a rockery or a cold frame where gems are sheltered from harm; but we cannot advise him to bring them under the notice of the Floral Committee.

COLCHICUM PARVULUM.—Corm ovate, oblong, 1 inch long, covered with a single brownish, smooth coat. Flowers about three-quarters of an inch across, pale lilac. A native of Italy and Greece.

COLCHICUM ARENARIUM.—A pretty little species with pale lilac flowers, 1½ inch across; the segments are oblong, the outer ones rather broader than the inner. The anthers are introrse, or certainly not extrorse as they ought to be if plants would only conform to rule, and the three styles project beyond the stamens, their stigmas dusted with pollen, apparently obtained from the anthers as the styles are pushed up beyond them. It is a native of Corsica.

LEUCOIUM ROSEUM VAR. LONGIFOLIUM.—A minute bulbous plant, with two to three linear channelled leaves about 2 inches long, and a central erect thread-like flower-stalk, 3—4 inches long, with a single nodding rose-coloured flower about half an inch in length. L. roseum itself is smaller still.

LEUCOIUM AUTUMNALE.—A graceful bulbous plant, not much like its congener the common Snowflake, and with long linear grass-like leaves and erect flower-stalks, bearing a reddish spathe, from which issue two to three pendulous, stalked, bell-shaped, whitish flowers, each rather less than half an inch in length. South Europe and Northern Africa.

SEDUM ERYTHROSTICTUM.—The merits of S. spectabile, whether as a hardy plant or for pot culture, are pretty generally recognised, and not by gardeners only, but by the butterflies — Tortoise-shells, Red Admirals, Peacocks, and Painted Ladies all frequent the flowers, so that those who like vernacular names might well speak of it as the Butterfly Sedum. S. erythrostictum, however, a closely allied species, is very little known, even under the name of S. alboroseum; it is, however, well worthy of more extended culture. It is of taller, looser habit than S. spectabile, which is rather an objection, but our plants are grown in the shade, which may account for their straggling habit. The flowers are very numerous, in dense spreading clusters. The star-shaped flowers are whitish, with a pink flush; but the most striking feature about them is the deep rose-coloured carpels in the centre, which form a marked contrast to the pale petals. The plant was figured in the *Refugium* by Mr. Baker in 1868, t. 33; but Miquel's name, in the *Annales of the Leyden Museum*, has precedence. Our description at p. 337, 1878, was taken from living specimens.

RUDBECKIA PURPUREA.—The comparative scarceness of this plant in gardens, considering that its introduction dates as far back as 1669, must be accounted for by the difficulty of propagating it either by seed or division of the rootstock. This is to be regretted, seeing that it is one of the choicest and most neatly habited in the genus. The long drooping ray-florets are rosy-purple, while those of the disc are velvety-crimson, giving the plant a very characteristic individuality. It furnishes the subject for the second plate in the *Botanical Magazine*, and a flowering plant may be seen in the herbaceous collection at Kew. Formerly it was regarded as a species of Echinacea, owing principally to the three or four seriately arranged bracts of the floral involucre, and the rigid pointed scales of the receptacle being longer than the disc florets, whereas in the type the bracts of the involucre are mostly two seriate and the scales of the receptacle shorter than the corollas. *J. F.*

CORK.—The following arborescent plants, rarely if ever known to flower in this country, have flowered in our hothouses this year:—Magnolia champaca, Saraca indica (Jonesia asoca), Psychotria leucocephala, Chrysophyllum Glaziovii (Theophrasta imperialis). Last year Gustavia speciosa and augusta flowered and fruited: we have raised seedlings of both species. *Marcus M. Hartog, Queen's College, Cork.*

CRYPTOGAMIC MEETING OF THE ESSEX FIELD CLUB.

THE meeting of the Essex Field Club, held at the "Roebuck" Inn, Buckhurst Hill, last week, was by far the most important cryptogamic meeting hitherto held in or near London. Two whole days were spent in ransacking the Forest from Epping and its neighbourhood in the north to Buckhurst Hill in the south. Not less than a hundred persons sat down to the Club tea at the "Roebuck" on Saturday, and perhaps twice that number attended the general exhibition of the fungi and microscopes later on in the great ball-room of the inn. The members and numerous visitors enjoyed unusual advantages for becoming practically acquainted with fungi, for the majority of our best cryptogamic botanists were in the Forest with the excursionists and in the ball-room in the evening.

The gentlemen who acted as guides and referees were Dr. M. C. Cooke, of London; the Rev. Canon Du Port, of Mattishall; Mr. William Phillips, of Shrewsbury; Dr. H. T. Wharton and Mr. Worthington G. Smith, of London; Dr. Flaxman Spurrell, of Belvidere; the Rev. J. M. Crombie, Professor Boulger, Mr. James English, Mr. Thomas Howse, of Guildford, and others. Unfortunately Mr. C. B. Plowright, of King's Lynn, although he had promised, was unable to attend. Mr. Robert McLachlan, F.R.S., accompanied the party on Saturday.

The weather was very fine and warm, and fungi scarce; still, the Forest was searched with such good effect that many hundreds of examples were brought in. Mr. William Phillips, Mr. Scott Wilson, of Weybridge, and one or two other gentlemen, spent Friday night at an inn in the Forest, and Dr. Cooke and Mr. Phillips spent the whole of Saturday in arranging the fungi in proper botanical sequence and attaching names and qualities, whether poisonous or non-poisonous, to all the fungi exhibited. The Rev. Canon Du Port, Drs. Cooke and Wharton, with Mr. Wm. Phillips and Mr. W. G. Smith, were at the "Roebuck" Inn till 9 o'clock on Friday evening for a similar purpose. A large number of excellent diagrams were forwarded by Mr. David Houston, and what with the living fungi, the dried examples, the microscopes, and the drawings, nothing better could have been desired. The visitors took a great interest

in the specimens exhibited, and at the close of the meeting many examples were taken away, either for further study or experiment for the table. Although the Forest had been thoroughly searched for fungi by Dr. Cooke and Mr. Smith for about a quarter of a century, and for a less time by Mr. English, about eighteen species of the larger fungi were lighted upon that had never before been recorded from the district. Of these several were new to Britain.

After tea the meeting was addressed by the President, Professor Boulger, by Mr. Wm. Cole, and by Dr. M. C. Cooke. Mr. W. G. Smith then read a paper called the "Politics of the Potato Fungus," containing a humorous defence of his own position and a by no means unwarrantable protest as to the manner in which original observations are treated. A collection of fungi was sent from Burnham Beeches, another from Suffolk, and a third from Surrey. As the referees were present in the room during the meeting a good number of "leading" questions were of course asked and satisfactorily answered, not only regarding large fungi, but about the small ones which often infest food plants. It was intimated that at next year's meeting, if all things were well, Dr. Bull, of Hereford, would be present as one of the referees. Circumstances for the study of fungi were very different thirty years ago, when Dr. (then Mr.) Cooke and Mr. W. G. Smith, the oldest members (as botanists) of the newer school of mycologists tackled the fungi. At that time there were no excursions or fungus meetings, and no personal instruction. The only English book was Hooker's *British Flora*, with Berkeley's volume of *Fungi* (1836), and a few mouldy, badly got up foreign books, printed in Latin, and chiefly without illustrations. Some of the younger men, who now have every possible advantage, are apt to forget the great difficulties of making the first start. Thirty years ago only four or five persons in this country knew anything about fungi. The Rev. M. J. Berkeley, Mr. C. Edmund Broome, and the late Mr. Fredk. Currey were the chief authorities in those times; the two former gentlemen we happily still have with us.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The Botanical Club, a body connected with the Science Association, held a meeting recently in the hall of the Union League, Philadelphia. Professor W. J. Beale, of Lansing, Mich., presided, and Professor J. C. Arthur, of Geneva, N. Y., recorded. About fifty members were present. Papers were read by Dr. N. L. Britton on the "Flora of New Jersey;" Professors C. R. Barnes, of Lafayette, Ind., on "The Course of the Fibro-Vascular Bundles of Scotch Pine;" C. E. Bessey, of Ames, Iowa, on "The Opening of the Flowers of Desmodium;" McCloskie, of Princeton, N. J., on "Fertilisation of the Wild Geranium;" Dudley, of Ithaca, N. Y., on "The Duration of the Stems of the Small Rush;" and Seaman, of Washington, on "The Study of the Fibro-Vascular Bundle by Means of Oblique Sections."

A Botanical Excursion.—There is a peculiar something about scientists which was pleasingly illustrated as they wandered in groups through the grass, one or two lingering here and there to gather a weed or inspect a Thistle. There was a gentleman in a flat, white helmet and yellow boots, and another in a tall pith helmet and green goggles. There was a man of enormous fatness, who mopped himself with a handkerchief the size of a tablecloth, and a long, thin man, who would not perspire, and wore a comforter around his neck. Then, with few exceptions, the worst hats ever imagined, and the most extraordinary shapes, were worn by both sexes of botanists, and the very worst hat of all was worn by a man who carried a tin pail to preserve his specimens. But all the little eccentricities of appearance were soon forgotten when in conversation. These people knew so much, and found such pleasure in the knowledge of the attributes of the many worthless weeds, trailing vines, or tiny wild flowers growing at their feet. To them a Primrose was a thousand times more than a Primrose, and a hat nothing more than a covering for the head.

The approach to the Bartram domain presented unforeseen difficulties to the ladies of the party, but it was evident that their botanical studies had taught them to overcome such impediments. First came a five-barred fence. The girls went over it with a skip and a jump, and the matronly dames with a bold determined climb which defied criticism. Next came a drove of cows. The cows fled. Then it was suggested that poison vines might abound, and the only effect it had on the ladies was an argument as to the true Latin definition of the unpleasant plant. Finally, in the midst of trees and surrounded by lawns in a careless state of undergrowth, appeared a very old house of grey stucco, and the visitors were informed that the point of their journey was reached—the first botanical gardens ever planted in the United States.

John Bartram's Life.—John Bartram was not only a farmer but a nurseryman and gardener of high botanical attainments. He travelled all over the country for plants and trees and made a home for them on his acres. Many specimens were sent to him from distant lands until his grounds became celebrated among Philadelphians a hundred years ago, and to-day a wonderful but heterogenous growth of trees, plants, shrubs, and Vines, grow in one happy family together—a wilderness of strange beauty and a paradise for a botanist. [*American Paper*. We must apologise for not stating which one, having mislaid our copy! Ed.]

HOME CORRESPONDENCE.

Euphorbia Cyparissias.—The change in appearance caused by the attacks of parasitic fungi is sometimes very remarkable. A common illustration is afforded by the Cystopus, which attacks Crucifers.



Fig. 87.—Euphorbia and Æcidium.

Reissek, long ago, in the *Linnæa*, xvii., p. 641 (1843) alluded to similar changes in a species of Thesium. The figure (fig. 87) which accompanies this affords another illustration of the same phenomena in Euphorbia cyparissias, gathered in the Valley of Zermatt. The ordinary appearance of the plant, with its linear, closely crowded leaves, is well known to growers of rock plants, but when the leaves are affected with Æcidium they become broadly ovate, and when, as often happens, all, or nearly all, the leaves are affected, the appearance of the plants is entirely altered. *M.*

Awards at the International Forestry Exhibition.—Your correspondent, "E. H.," at p. 377, seems to have entirely mistaken the duties of the jurors in class 4. He may not have seen the schedule of classification by which, I have no doubt, the jurors would have to be guided. If "E. H." will turn up that list he will find on p. 2 that class 4 is "Ornamental Forestry" in three sections, viz., section 1 being "Growing specimens of rare and ornamental trees and shrubs, in tubs or otherwise." He will observe that this does not confine the competition to plants suitable for our British climate; but, if I may be allowed to put it, the jurors were to give the highest award to the rarest plants, no matter where they grew so long as they were "growing specimens of rare and ornamental trees in tubs or otherwise." My first paragraph answers the first part of "E. H.'s" second paragraph, I need not, therefore, refer to it; but the latter part of this paragraph requires notice. "E. H." admits that Messrs. Veitch have the most rare plants, and therefore he answers his own question as it were. I suspect it was not before the jurors to give countenance to the most ornamental and judiciously arranged collection: I say so because I do not see that in the schedule before me. They were judging "rare and ornamental plants," not decorations or effectively arranged collections. "E. H." might be right if the latter were so under purview, but that was no part of the merits of a collection. It is quite evident that other nurserymen have many more plants than the winners of the Gold Medal; but it is also as evident that these plants are not so large or so well grown generally, therefore not so valuable, plant for plant; and if these collections were purged of all common plants and duplicates, I fear the show would be small indeed. This is a thing that can be seen by an ordinary observer who knows anything about plants, and no doubt exists as to the very valuable collections of many exhibitors in this class; but when we see as many as forty plants of one variety it is easily seen why Messrs. Veitch & Sons were awarded the Gold Medal. It is notorious that some of the leading firms have many specimens wrongly named, and this alone would turn a point, if the jurors worked by points. This of itself shows either a want of knowledge or of carefulness on the part of an exhibitor, and must have lowered his collection in the estimate of the jurors. I think if "E. H." would take another walk round and study the collections from a juror's point of view he will see that the ornamentation of the exhibition grounds, number, or hardiness of the plants was not before the jurors at the time of judging. As an impartial observer I must say that there can be no doubt as to the judging being correctly done; though I also admit that I at first thought that the jurors had committed a mistake. But when I was referred to the classification list I could hold that opinion no longer. I hope "E. H.," and such as are of his opinion, will take the trouble to get a list and look over it, and then compare the awards with it, and thus settle an unpleasant matter. If the other complaints are as void of foundation, the Executive Committee may laugh at a few discontented exhibitors, who can hardly be expected to take an impartial view of the subject. *A Lover of Pines.*

Cyclamen hederæfolium.—My experience with Cyclamen hederæfolium this season coincides in a measure with that of Dr. Allman. One of our plants has produced some thirty blooms, ten of which are pure white, while the remainder are of the ordinary colour. None of our other plants have been thus eccentric, but all are producing blooms, and plenty of them, of the normal colour. Can any cause be assigned for this strange departure from the usual course? *John C. Tallack, Prideaux Place, Padstow, Oct. 6.*

—— I see in the *Gardeners' Chronicle* of Sept. 27, p. 406, that Dr. Allman, of Ardmore, Dorset, says that his Cyclamen hederæfolium, hitherto rose colour, have this year flowered pure white. I have grown these Cyclamens for twenty years, and have many hundreds of rose-coloured and white, also purple, but have never known a rose-coloured Cyclamen become white. I have observed, however, that the seed of both purple and rose-coloured self whites came up white, and so close to the bulbs of the parent plant that they appear the same plant. I believe Dr. Allman will find that that is the case in his garden. *J. T. B.*

Bomarea conferta. — This is flowering beautifully at the nurseries of Messrs. Rodger, McClelland & Co., Newry—upwards of forty flowers in a truss, the deep orange-scarlet flowers very showy and effective. Tuberous-rooted Begonias bedded out are just now a grand sight on the rockwork. Darlingtonia californica and various Sarracenias have stood out through the winter and are growing nicely. These nurseries contain many novelties rarely to be met with, and are always worthy of a visit to those interested in the cultivation of plants. *A. O.*

Impatiens Sultani.—I have very little to add to my former note on the above plant. I may say, however, that my best plant is growing in a 9-inch pot, and is a good specimen, of a bush shape, about 2 feet 6 inches high, and as much through; there are at present about 250 expanded blooms on it, and it is certainly an object of beauty, especially when the sun shines on it, the blooms then glisten with a peculiar metallic lustre which makes it very attractive. I have plants of it growing in all sized pots between and including 4½ and 9 inch, and they do well in all; but I prefer the large plants. Small ones, however, are very useful for house decoration, lasting well in rooms. The treatment I give them is about the same as that usually given to ordinary double Balsams, raising them in heat and growing them through the summer in a cold frame. The soil I use is good loam, mixed with a small portion of leaf-mould, to which a few half-inch bones are added. There is a total absence of all coddling, all the special care taken is to give them plenty of water when required. *John C. Tallack, Prideaux Place, Padstow, Oct. 6.*

Seedling Lapageria.—I have this day forwarded to you three Lapageria flowers for your inspection. The plant is a seedling, and at present, although not large, is carrying a great many flowers, all about the

size of those I send. The flowers are much paler than others which we grow here, but I have not seen one that can come up with it in size of flowers. *Charles Rann, Crawley.* [The flowers are of a delicate rose colour, mottled with white, and, as our correspondent says, of extraordinary size—nearly 4 inches in length and 3 inches across. ED.]

Pontederia azurea.—I send you by this post a blossom of one of the most interesting water plants, viz., Pontederia azurea (syn. Eichornia). It has flowered three times or more in the open air here, planted in pond-water with Limnocharis Humboldtii. It may prove hardy; and, if so, it will be one of the most lovely water plants. *J. T. B.*

Clove Carnations for Forcing at Mr. Goubert's Nursery, Kilburn. — These favourites of every one who likes good old-fashioned flowers, are to be found grown in goodly numbers, especially the old Crimson Clove, which finds perhaps the most admirers. The vigorous free-growing disposition of the plant with its freedom in blooming make it second to none, and its delightful scent, rich colour, and the lasting property of the flowers, go to make it one of the best flowers for cutting. Its merits out-of-doors have been long known, but the ability of the plant to bear forcing has only recently been proved; one or two of those who grow flowers for Covent Garden Market tried it and found that it can be brought on with warmth, so as to produce flowers freely in the spring, at which time, as might be supposed, they are held in high estimation. Mr. Goubert forces it most successfully; recently long rows of plants in pots consisting of several thousands, were ranged on the sides of the walks through the nursery, preparatory to their being soon taken under cover. The plants were remarkable for their vigour, they are at first grown in the open ground and then potted before the growing season has too far advanced to admit of their making plenty of roots so as to fill the soil in the pots. *T. B.*

The Celery Maggot.—A correspondent in the *Gardeners' Chronicle* for Sept. 27, p. 406, asks the question, "Is it the fact that this pest of our gardens has been much less troublesome this season than usual? Such is certainly not the case in this neighbourhood." We have seen a good deal of Celery lately, and in every case it has been badly infested with the maggot, and our own is no exception to the rule. We have kept ours in check by hand-picking, and destroying all the affected parts. Previous to this season we have been in the habit of using soot liberally as a stimulant, and we were never then troubled with maggot. Is it possible that the free use of soot is objectionable to the Celery fly, and that it may act as a preventive to the fly depositing its eggs on the Celery? *B. Ashton, Kirkham Abbey Gardens, York.*

—— Your correspondent, "Twickenham," in the issue for September 27 speaks of the remarkable absence of fly in Celery this season, and asks for information from other districts. He may consider himself fortunate in his escape, for all around this district there is not a row without it; in many places not a leaf is left. I send you a few pieces for inspection, and this not an exception, but almost a mild form of it. Every bit has been handpicked, which has proved a great expense to market growers. *Salopian.* [The sample was very badly affected. ED.]

Hedychium Gardnerianum at Birdhall.—One is always sure to see something curious and interesting, if not among Orchids, at least among hardy or greenhouse plants here, every day in the year. Going through to-day, Mr. Gough, pointing to the above, said he had had it for upwards of twenty years, and this year had determined to be done with it, and put it out of the conservatory as it failed for some time to bloom. Whether the season was suitable, or unusually warm, it seemed to agree with this rather rare but old plant, for it threw out four long spikes of very peculiar blooms. It is a great acquisition to the conservatory at this time of the year; besides its unique appearance and soft yellow colour, it deliciously scents the whole house, and would not be parted with now on almost any terms. It would be interesting to know if by any system of treatment it could be had in bloom every year. *W. J. Murphy, Clonmel.*

Blooming Plants at the Hale Farm Nurseries.—Amongst the most effective during September were Lilium speciosum album Krætzeri. A good sized bed of this Lily, planted thickly, was a complete mass of pure white flowers. It is the best of the white varieties of L. speciosum. A companion bed of L. speciosum purpurascens was also in full bloom. This is the darkest coloured of all the forms of L. speciosum, and is a beautiful kind either for pot culture or out-of-doors, where these Lilies are found to do satisfactorily. Milla bifolia was beautifully in bloom. Its pure white flowers are alike handsome on the plant or when cut. Oxalis floribunda rosea is a pretty late-flowering plant, not so often met with as it deserves to be. Its rosy coloured flowers were present in abundance. The autumn Crocuses (Colchicum) album and pallidum were a mass of bloom. The pretty Zauschneria californica and Leucojum autumnale were blooming side by side; both these plants are acceptable additions to our not over-numerous autumn flowers. Of Iris Robinsoniana there is a large quantity here raised from seed, so that the plant is likely to become more plentiful than it has been. *T. B.*

Fumigating.—As the defects and evil consequences of fumigating Orchid-houses with tobacco smoke, have been under discussion lately, I may observe that I have successfully adopted the French system of evaporating tobacco juice, the refuse of cigar making. The moist vapour penetrates into the heart of the young vegetation and effectually destroys aphis, and thrips whether black or yellow, without in any way injuring the plants. I put the tobacco juice into shallow pans which are placed upon burning charcoal in small earthenware or iron stoves. *H. J. Ross, Castagnolo.*

Norwegian Names of Plants.—In the present volume of the *Gardeners' Chronicle*, p. 340, under a note upon Rubus chamæmorus, "J. W. D." calls attention to the names under which several edible berries are known in Norway, and the desirability of knowing to what plants they belong; the following list, compiled from Blytt's *Norges Flora*, may therefore prove useful to him and others wishing to know something about the names of some Norwegian berry-bearing plants :—

Bjornbær	=	Some form or subspecies of Rubus fruticosus
Blaabær, Blaabærlyng	=	Vaccinium myrtyllus
Blaabring	=	Some form or subspecies of Rubus fruticosus
Blem	=	Rubus Idæus
Blokkebær	=	Vaccinium uliginosum
Brembær, Bring, Bringbær, Brong	=	Rubus Idæus
Jarbær, Jardbær, Jordbær	=	Fragaria vesca
Kolbær	=	Some form or subspecies of Rubus fruticosus
Kraakebær, Krækjebær, Krækling	=	Empetrum nigrum
Mikkelsbær	=	Vaccinium uliginosum
Molta, Moltebær, Moved	=	Rubus chamæmorus
Myrebær	=	Rubus chamæmorus and Vaccinium oxycoccus
Myrtyta	=	Vaccinium oxycoccus
Nakkebær	=	Fragaria collina
Olbær, Rips	=	Ribes rubrum
Skintryte	=	Vaccinium uliginosum
Skrekling	=	Empetrum nigrum
Solbær	=	Ribes rubrum
Stikelbær, Stikelsbær	=	Ribes Grossularia
Svarte Vinbær	=	Ribes nigrum
Taagebær, Taeger, Talgebær, Teicbær	=	Rubus saxatilis
Tranebær, Trante	=	Vaccinium oxycoccus
Tryte	=	Vaccinium uliginosum
Tyta, Tytebær, Tytelyng	=	Vaccinium Vitis-idæa
Ulvill, Vinbær	=	Ribes rubrum

N. E. Brown.

Vegetable Marrows.—Although the name of these popular garden products would lead to the impression that they are necessarily nutritive, it is to be feared that no such conclusion is warranted, but that rather the designation simply implies succulency, and nothing more. But whether nutritive or not, the Vegetable Marrow is a favoured market subject, and eagerly sought after by town dwellers, who rather like them large and not too young; still, where the demand is great, as it has been with growers this year, it is often difficult to permit the fruits to remain long enough on the plants to become large, the temptation to cut as fast as moderate size is attained being strong. A grower of some 6 acres of Marrows mentions that this year has found them to be singularly profitable, and that he has often loaded three vans with them, making up thousands of dozens of the fruit, during the week. Marrows specially are profitable in the fact that they need little labour to be expended in caring for them, from the time of planting till the end of October, if spared so long. The plants can not only take care of themselves, but will fairly well clean the soil. Again, they are not very exhausting as a crop, although it is advisable to give them the help of a good dressing of manure at starting. Potatos, Peas, or spring corn, will follow well afterwards. It is the capacity to grow such diverse crops as these which enables market growers to enjoy advantages not possessed by most farmers. Of course it is of the first moment that Marrow plants should be got out early; indeed, some growers, that they may get the first pull from the market, will employ numbers of movable frames, and, making up shallow dung-beds, give the plants such a start that, when others are planting out, these protected ones have filled the frames, and are full of fruit. The frames being lifted off, the plants grow as they may. Large growers of necessity sow their seed in the open ground; but though the plants may be later, yet they grow rapidly when once well rooted. *A. D.*

Tomatos.—I herewith send you a Jumbo (seedling) Tomato, selected from the Orangefield, and grown by Mr. Johnston, gardener to the Marchioness of Camden, Bayham Abbey, for the last six years, bearing marvellous crops of heavy fruit every year, and cutting from early in May, keeping on till the end of October. The last few years this Tomato has taken 1st prize at Brighton and other shows with fruit weighing on an average 1½ lb. The largest one I enclose for your opinion weighed exactly 2¼ lb., and measured 1½ foot in circumference when cut. The other bunch enclosed, to show its free bearing qualities, weighed 2 lb. 15 oz., and of those exhibited at the Tunbridge Wells show in July the average weight was 1½ lb. *Q.* [The fruits were of enormous size, fine crimson colour, and slightly ribbed on the under-side. ED.]

Thorny Trees.—The gipsies who plucked branches from the Crittenden Damson trees referred to at p. 392, for the purpose of making with the long spines skewers for butchers, should seek for trees of that terribly armed and appropriately named shrub, Gleditschia horrida, which produces the firmest and most sharply pointed of spines to be found on any similar tree or shrub in cultivation. Fortunately so dangerous a tree is seldom met with out of nurseries, and a large number of gardeners, perhaps, have never seen it. The spines are very hard, and some 3 inches in lengh. I remember it well as a tree to be cautious of when a boy, for those in the nursery were dwarf and seldom removed. It was in that day sometimes called Christ's Thorn, but incorrectly, as that is Paliurus aculeatus. *D.*

Church Decorations.—It is perhaps late to be thinking of church decorations, in connection with Thanksgiving service or Harvest Festival, and yet I would like to call attention to the great wealth of wild fruits and berries there is, and to point out how suitable and beautiful they are for the purpose. Take those of the Laurel for instance, and what can look better, in a decorative point of view, than the branches of that shrub, with their long racemes of highly-coloured, blue-black fruit, and then again, where the poor voracious birds have not carried them away, there are those of the Berberry, among which there is great variety, both of form as well as rich colour. B. aquifolia is perhaps a little stiff, but B. Darwinii is exceedingly graceful, the regular drooping curve of its slender branches rendering it just the thing for vases, where sprays of it show off to perfection. The Mountain Ash, too, is fine for the same purpose; and then there are lots of Cratægus, and we need only go to the hedgerows for twigs full of Sloes and shoots borne down by ripe clusters of Blackberries. Surely all these would be more appropriate for decorative purposes in sacred buildings, than heaps of cultivated fruit and vegetables, such as we often see; but I am on tender ground here, and had better leave that part to those who ought to know more about it. *J. Sheppard.*

Single Dahlias and Bees.—Have you or any of your readers in going among beds of single Dahlias observed bees on almost every flower? At first I merely thought they got wet and waited until the sun shone before departing on their busy mission of collecting their winter store of honey. I am now alluding to the larger, not to the smaller honey bee. Within the last few days some gardening friends have drawn my attention to the fact that this is general, and that those bees seem not dead, but stupefied. On examining more closely it will be found that the "honey" of the single Dahlia, which it is to be presumed attracts them, is of a sticky gummy character, and seemingly calculated to produce the drunken effect noticeable. Perhaps some of your readers who have greater opportunities may further inquire into the accuracy of my supposition. *W. J. Murphy, Clonmel.*

Azaleas Affected with Thrips.—The insects that gardeners have to contend with are numerous, and only by incessant watchfulness can they be kept under, and there is no disguising the fact, that where plants are kept so far free from insects as to prevent their ever gaining a head, there the best results may be looked for. The surest means of reducing the never-wholly-absent work entailed in the destruction of insects is on greenhouse plants, to see that in the autumn the stock is so far as possible freed

from them, for at this season their increase is at the least point. As regards several of the most troublesome, such as red-spider and thrips, the greater number, so far as the mature insects are concerned, perish; but before making their exit, never fail to leave eggs enough for another year's stock of their unwanted progeny. In this state the embyro can be most successfully dealt with. Amongst the different kinds of greenhouse plants there are none that contribute so much to perpetuate thrips as do Azaleas, for though the mature insects are now either dead, or have less vitality in them, especially in the case of plants that have been stood out-of-doors for a time, still their eggs may be seen sealed up on the leaves beneath the little black, varnish-like specks, under which they remain secure until enough warmth is present to bring them to life. Fumigation is useless, as if the plants were smoked until they were half killed, it would not affect the eggs of the thrips in the least; yet they can be effectually destroyed if the right means are taken. For this purpose there is nothing so safe and so effectual as strong tobacco water, in which the plants should either be dipped repeatedly, or, if too large to be so dealt with, syringed thoroughly two or three times at intervals of a week or so, leaving the water to dry on the plants. Where this work is well done, thrips will give much less trouble during the ensuing summer, as if at all affected it will only be by such as are communicated from plants of other kinds. Where a like course to this is not followed, Azaleas that have been attacked with thrips during the past summer will again swarm with them early in spring, communicating the pest to everything near on which they will live. In like manner all the plants that have been affected by red-spider should be dipped and washed with insecticide, in the case of aphides fumigation with tobacco smoke should be repeated until they are quite free from the insects. In this way a clean start in spring may be looked for, which does much to lessen the ensuing summer's work.

Gladiolus, The Bride.—Mr. Riches has done good service in calling attention to Gladiolus, The Bride, which is one of the most useful and beautiful among white flowers that any one can grow either for the decoration of the conservatory or greenhouse, or affording a supply of cut bloom. I saw it on several occasions, during the early part of this season, at shows, worked up in bouquets as well as in epergnes, where it was very telling, owing to its graceful form. It must not be assumed, however, that because the corms stood out last winter that they are quite hardy, as we had no frost, and I fear that any one following Mr. Riches' advice and planting in the open ground in October would stand a chance of losing them, unless the situation happened to be a very sheltered one or they were protected. We grew ours in 32-sized pots, in each of which we placed from five to seven corms, and stood them in cold frames, where they were kept till they began to show flower, when they were at once arranged in the greenhouse with other varieties of G. Colvilei, all of which have very rich colours and markings, and come in fine for mixing and dressing up with The Bride. As soon as the corms are ripe, as they will be when the tops die down, we shall shake them all out and repot in light rich loamy soil, and let them come gradually on, as before. Those who are not so fortunate as to have a stock of these useful small-growing Gladiolus will find this a good time to obtain them and start with them, as a number may be sent cheaply through the Parcels Post, and they will then be ready for starting at once. *J. S.*

FRUIT NOTES.

Gros Maroc Grape.—At p. 397 a question relative to the above Grape is asked, and mention is made of the difference in some of the exhibits of the same variety at South Kensington on September 23. I do not doubt but what all the bunches exhibited under the name of Gros Maroc were true to name, but where there was any difference from the typical form I should think it highly probable, if the facts were known, that the Vine was not growing on its own roots, but had been grafted or inarched on some other variety. [This was not so in this particular instance. Ed.] It is a well known fact amongst Grape growers that in some cases the influence of a stock over the scion is very great—so much so that a variety may be altered in its character, both in regard to flavour and form of berry, as to make it appear altogether a distinct kind. We have here a Madresfield Court inarched on Gros Colmar, yet the produce is neither the one thing nor the other, but partakes a little of the character of both. This freak of Nature, if we may so call it, is not the rule, but rather the exception. *J. Horsefield, Heytesbury.*

—— Whilst it was evident to close observers of the Grapes at South Kensington at the recent show that there were very distinctive differences between the form of berry seen in bunches of this Grape sent from diverse gardens, yet one feature pervaded every example, and that was the little yellowish fungoid-like eruptions which clustered more or less about the stems of the berries. This feature appeared to be more marked in this Grape than in any other. Perhaps the stock may have something to do with the shape of berry, but large, and rounded like to the berries of Gros Colmar, but blacker, and carrying more bloom, was the prevalent characteristic. The bunches from Gunnersbury showed the most oval form in berry; those from Burghley the densest coating of bloom, whilst those from Heckfield were the handsomest, and had the largest and most rounded berries. Gros Maroc would seem to be a grand yet old Grape that has long been neglected, and the high-class merits of which are but just discovered. *A.*

Apples and Pears.—Although there are not many of these this year, what there are promise to be fine, not so much perhaps in size as in high colour and flavour. For these latter good points we are indebted to the sun, which has been very warm, and has put the finishing touches on the fruit, as is shown by the skins of both Apples and Pears. Cox's Pomona are quite a sight, and Blenheim Orange and Cox's Orange Pippin have already rich looking cheeks that will greatly improve after they get into the fruit-room, where they must soon be placed, although I like to let them and all late keepers hang on the trees as long as they will. The mistake many make is in having a general gathering, without regard to sorts, instead of which they want watching, and taking only when they are ready, as they differ in time of finishing as much as two or three weeks. On looking over Apples to-day to decide on what should be picked, this fact made itself very apparent, as I could see at a glance that Sturmer Pippins and Claygate Pearmain were quite safe for at least a fortnight to come, and the same with a few other kinds, which, if got in now, would only shrivel and spoil. The same remarks apply to Easter Beurré, Beurré Rance, Ne Plus Meuris, and Josephine de Malines Pears, none of which are at all fit yet to be gathered, and of those that ripen in October and after, such as Marie Louise, Doyenné du Comice, Glou Morçeau, and others, will only hold on, they will improve much daily so long as the weather is fine. For Pears on walls it is a good plan to strain a net along, as is done for Peaches, to catch any that drop, so as to prevent bruising, and to pick out all fallen ones daily, and under pyramids, espallers, and bushes, it is well to have a little straw, as then the fruit may be left later than would be wise without something to save them. Ours were all heavily mulched with long littery manure, which had been on all the summer, and I always find that the trees are greatly benefited by the increased moisture, and shade the roots get by having it over them. *J. S.*

Ecklinville Pippin Apple.—I find this variety to be a first-rate culinary Apple, also large and handsome, and a great bearer. The tree is a free grower, and forms a splendid pyramid. I think, when more known, it is very likely to supersede many of the early varieties of culinary Apples, coming, as it does, into use in August, and keeping well into November. I purchased some trees from Messrs. Veitch & Sons in the year 1882, and this year we have gathered over 4 dozen fine fruits from each tree. I can strongly recommend this Apple to all who have not got it. *J. J. Lowry, Belmont, Mill Hill.*

Strood Cluster Damson.—Some two years ago this Damson was alluded to, and made the subject of a leading article, in the *Gardeners' Chronicle*, when it was clearly shown that what had been put forth as the Crittenden Damson was a wrongful designation; and in your issue of September 20 last the beautiful delineation of this desirable variety will doubtless, if not corrected, be the means of perpetuating the misappropriation. In consequence of the neglect of the raiser of this fine variety to take advantage of advertising it, and making it known to the world, thereby securing to himself a source of great profit, he indiscriminately supplied it to others, in consequence of which it has been put forth differently designated as the Crittenden, Fairlight, and by mistake even the "Stroud" Damson. The Damson in question originated in the nursery of Mr. William Herbert, of Strood, in Kent, who was afterwards a tenant of Mr. Roach Smith. After the death of Mr. Herbert, Mr. R. Smith introduced the Damson to his friend, the late Mr. Thomas Rivers, of Sawbridgeworth, and assisted him to a large quantity of buds and suckers, by means of which he was soon able to supply, not only the English, but the American market. Mr. Crittenden, of Higham, near Strood, had in previous years purchased trees of Mr. Herbert, and thus the Damson came to be called "Crittenden." The late Mr. Alfred Smee, F.R.S., engraved this Damson in his work called *My Garden*, from specimens supplied by Mr. Roach Smith; but, although he knew well its history, he persisted in calling it the "Rochester' Damson. Mr. Roach Smith had previously published a notice of this Strood Damson in his pamphlet *On the Scarcity of Home Grown Fruits, with Remedial Suggestions* (Liverpool, 1863). *J. C.*

Heads or Tails?—A curious heading this to a gardening paragraph, but it is suggested by the novel and interesting sight of a number of Vines fruiting grandly, and yet literally growing on their heads. The story of the Lady Downe's-house at Heckfield has in driblets from time to time been told, but a short summary of its history will just now not be uninteresting. Planted originally in a south-west lean-to it was found, owing to the admirable cropping powers shown by the Vines, and the value of the crop for late keeping, expedient to take away the back wall of the house, and carry down a lean-to on the other side, thus converting the house into a broad but rather low span. In time the Vine rods brought down this new slope filled all the available space, and just as an experiment, literally unable then to say whether it would or would not prove either successful or desirable, Mr. Wildsmith layered the young leaders of the rods a few years since, with the result that all rooted, so that the novel spectacle was presented of a vinery, the plants in which were rooted and making good growth at both ends; and it seemed hard to say which were the heads and which were the tails. In process of time the Vines began to fail somewhat, for they were dependent entirely upon inside borders, and it was resolved to make now the most hazardous experiment of severing the rods of one-half the Vines at the ridge or apex of the roof that the, old roots might be removed, that portion of the border be remade, and new Vines be planted. It was done, and, curious to relate, the severed tops, still rooted by their heads in the opposite border, seemed not one penny the worse, but fruited as well as ever. Thus encouraged the other half were cut away last winter, and the remainder of the original border renewed and replanted, whilst all of one side the house remains covered by Vines growing and cropping as mentioned. Oddly enough, too, the crop on these old heads of Vines is a superb one—we doubt if, for the area, it has ever been better; the branches are numerous, are fine, and the berries unusually large and splendidly finished. Thus we have told a plain unvarnished story of a singular experiment in plant physiology and culture, the which, if productive of no practical good, may ever be quoted with exceeding interest. [A charming illustration for those who still believe in the old sap dogmas! Ed.]

Warner's King.—I have just gathered a fine sample of this Apple: six weighed 5¼ lb., twelve weighed 9½ lb., the girth varying from 12 to 13¾ inches. Perhaps other gardeners would communicate their experience, as locality makes such a difference in the size and quality of fruit. *H. L., Ulverston.*

Pyrus malus pendula, Elise Rathke.—This is offered by A. Rathke & Son, of Praust, Germany, as a new Apple tree with pendulous branches. The tree is not only ornamental, but is said to be very productive; the fruit is a good winter Apple of middle size, of a yellowish colour, with a vinous taste, and it may be preserved till the month of March, or even as late as April. Whether this novelty is one calculated to hit the popular taste remains to be seen. We have Apples of somewhat pendulous growth, but this appears to have it in as marked a manner as the Weeping Ash, judging from the representation of it on paper.

The Blenheim Orange Apple.—It has been stated that this fine Apple has cropped well in some parts of the country, notwithstanding the general scarcity of this important fruit. In the tract of country lying between Warwick and Stratford-on-Avon come the villages of Barford, Charlcote, and Wellesbourne, with others, may be seen fine trees of the Blenheim

Orange Apple, with a healthy, vigorous growth, equal to anything seen in Kent, and bearing heavy crops of very fine fruit. This line of country is famous for its fine Apples of this esteemed variety, and it is said that in a good season the cottagers make a good sum of money by what their trees produce. It may be that Warwickshire was less affected by spring frosts than other parts of the country, for in not a few orchards fairly good crops of Apples could be seen.

PEACH BELLE DE SAINT-GESLIN BLANCHE.—A late Peach of moderate size, globose, with a moderately deep suture, yellowish, velvetty. It is a white-fruited sport from Belle de Saint Geslin, a much esteemed French late Peach.

APPLE TOM PUTT.—A medium-sized or rather large Apple, roundish conical, slightly ribbed near the sunken eye; stalk short, set in a deep basin; colour yellowish, striped with scarlet; flesh very white, tender, perfumed. A fine bearer; fruit mid-season. Mr. Barron speaks highly of it in the September number of the *Florist and Pomologist*, where there is an excellent coloured plate representing the foliage and fruit.

CRITTENDEN DAMSON.—In your notes appended to the admirable figure given of the [above in your last you say it is generally raised from its own roots. Allow me to say that for thirty years it has been budded on the Mussell stock, in our and other nurseries, and succeeds admirably. The trees thus raised grow with greater freedom, produce larger fruit, and the trees are nearly free from the spines which crowd all the trees raised from suckers. During the last twenty years other stocks have been used with success, making it suitable for light soils. It is stated that the trees require little thinning. In the best managed plantations all the Crittenden Damsons are heavily pruned annually, otherwise the fruit would be little better than Sloes, because of the enormous crop, and the trees so prickly that it would be difficult to pick the fruit. Older trees lose the spines, as in the case of the wild Pear, &c. *Geo. Bunyard, Maidstone.*

LADY LUCY PLUM.—Referring to "T. B.'s" notes on this fruit, I may say that the proper name is La Delicieuse or Cooper's Large—a Plum that bears immensely, and comes in after the main crop is over. Abbey Seedling is Waltham. The market growers' names are of no value for nomenclature: recently I saw some fine young trees, the growth of which seemed familiar, but the foreman said they were Early Maria Apples, but they proved to be Queen Caroline. *G. B., Maidstone.*

SEEDLING VINES, &C.—Some few years since I purchased at a cheap rate some "London dung" which I saw in the heap; on getting it out on the land we at once saw that it contained the refuse from some market, and were in due time rewarded with a crop of Vines, Dates, Apples, and Pears, but it had no manurial value. *G. B.*

A SECOND CROP OF PLUMS.—Accompanying this I send a spray from a Victoria Plum tree, with a ripe fruit attached. This spray, as you will see, is of this year's growth, so that the processes of wood growth, blossoming, and ripening of fruit, have all been begun and completed in the short space of the growing season of one year. It is not an inapt illustration of the kind of season we have had; and does it not run amuck of the theory which lays it down that no fruit is produced except on two-year-old wood? I ought to add that there are several other fruits on the same tree, in an equally ripe condition, on wood of the same age, and that the first crop of fruit was taken off the tree more than three weeks ago. *G. Paul, F.G.S., Moortown, Leeds.*

DIOSCOREA RETUSA.—Most of the Dioscoreas are grown for the beauty of their leaves, which are often beautifully marked with streaks and blotches in various shades of colour. The present is an exception, and although the flowers individually are small and insignificant, they together with their attendant bracts are capable in the aggregate of producing a very handsome effect. They are of a creamy-white colour, and produced in pendulous catkin-like spikes that occupy the axils of the leaves in clusters. The finger-like leaves are digitately pinnate, clothing the twining stems, which are so pliant and manageable that they can be used to decorate the rafters of a house, or cover a frame or lattice-work, where the graceful tassel-like inflorescence would be seen to advantage. It was originally described and figured in these columns, and is now flowering in one of the stoves at Kew.

The Rosery.

PROPAGATING ROSES.—Although the time for propagating Roses, by means of budding, is well nigh past, there are other ways by which they may be increased, and one of the best of these is that of striking them from cuttings, which, if put in at the proper season, root readily and make superior plants, as, being on their own bottoms, there is none of that trouble from suckers which most stocks throw up more or less. Manettis are very subject to this evil; many amateurs, not knowing them from the real Rose, often let them grow, and when this is done they soon overpower and kill the plant, or so starve and weaken it as to prevent it from blooming.

On their own roots Roses escape all this, and if they do push up from below they are all the stronger and better after for making the additional shoots. There are two periods at which cuttings may be formed and put in, and they are spring and autumn, but at the first-named season they must be got and made from forced plants, when the wood is firm, which corresponds with the condition it is now in on those in the open. The most suitable shoots for getting the cuttings from are those of a medium or intermediate size, as they have not so much pith in them as the larger, which is greatly in favour of their callusing, as instead of turning black, or shrivelling, they heal over at once.

The way to make the cuttings is to divide the shoots into lengths of three or more buds each, the lower of which should have the leaf pulled away from it, and the wood cut through close under, when, after the spines are carefully rubbed off, they will be ready for putting into the ground. The soil most suitable for striking Roses is that which is sharp and sandy, and the proper situation is a warm sheltered one, where, if they can have the protection of handlights, or a frame, to cover and keep them close, all the better, as the more they are out of the drying influence of wind and air, the greater the chance of success will there be. Not only may Roses of the Tea and perpetual kinds be propagated by treating them in the manner referred to, but the stocks for grafting and budding have to be raised in the same way, at least those of the Manetti must, for though the Brier may be got from cuttings, most of them are obtained from the hedgerows or by sowing the seed. The cuttings of Manetti should be made about 9 inches long, and when trimming them up have all buds cut clean out except one or two at the top, otherwise they will always be a great bother through starting and making a number of shoots. In putting the cuttings in the quickest way is to dig a piece of ground and then mark it out with a line, by the side of which a trench should be cut to the required depth, and the cuttings placed in it at 3 or 4 inches apart, when the soil may be returned and at once trodden firmly and closely against them, leaving only just the top bud or extreme points of the shoots standing out. By having them in thus deeply there is little of the wood exposed, and therefore, instead of drying and shrivelling, it remains plump and fresh till the roots form.

Those who have young plants of Manetti from cuttings struck last year may soon utilise them by taking them up for grafting, as next month and the following is a good time for the performing of that operation, so that any one having new or choice Roses they wish to increase may do so, and have good strong plants ready for turning out in the spring. To be successful it is necessary to make up a hotbed, which is better even than a close propagating box, as the warmth it affords is regularly moist and more genial. The grafting is done by cutting down the stock to within 2 inches or so of the roots and carefully slicing away one side of the stem, just paring through the bark and taking away a small portion of wood, when the scion should be trimmed in a similar manner to fit it; and if the two are then tongued they will hold and unite neatly and closely together. To keep them in position and enable them to do this they must be bound tightly by tying them round with a piece of Raffia-grass or matting, and if then covered with wax, made and sold for such purposes, few, if any, will fail. In putting the grafted plants in the frame they may either be plunged in pots or placed in soil, and if the former, cocoa-nut fibre will be found good material, in which they may be nearly buried; and if the heat is kept regular the scions or grafts will soon start, and a union take place. To aid and quicken this, it is a good plan to cover the frame and keep it perfectly dark by having mats over the glass, and as the buds burst, light may be gradually let in to strengthen the growth. *J. S.*

INTERNATIONAL FORESTRY EXHIBITION.

REVISED LIST OF AWARDS.—On Saturday afternoon last the Executive Committee of the Forestry Exhibition issued a revised list of awards, the sub-committee appointed to carefully re-examine the stands, and to call in the aid of experts when necessary, having finished this work. A number of exhibitors have obtained higher awards than the previous adjudicators allowed them, but none of the awards already given have been withdrawn. The revised list is as follows:—

Gold Medals.—Wm. Adams, Queensferry Street, Edinburgh; James Dickson & Son, Newton Nurseries, Chester, for trees and shrubs; The Lawson Seed and Nursery Company, for trees and shrubs; Messrs. Little & Ballantyne, Carlisle, for coniferous and deciduous trees; Thos. Methven & Son, Edinburgh; L. Mougenot, Paris; W. Scott Morton & Co., Edinburgh; James Veitch & Sons, Royal Exotic Nurseries, Chelsea, and Special Diploma for trees and shrubs; Vilmorin, Andrieux & Co., Paris; Stuart & Co., Edinburgh; Commissioners of Woods and Forests, London; Cape Colony; G. Alexander, Ceylon; The Maharajah of Johore; Government of Denmark.

Silver Medals.—A. J. Arrowsmith & Co., London; Bombay Burmah Trading Corporation, and Special Diploma; Brown Brothers, Edinburgh; Ciceri & Co., Edinburgh; James Dickson & Son, Chester, for tools, seeds, &c.; James Duncan, Pilrig, Edinburgh; P. & R. Fleming & Co., Glasgow; A. Gardner & Son, Glasgow; Thomas Gibson & Son, Edinburgh; Andrew Gordon, Edinburgh; Gray & Co., Edinburgh; John Hislop & Son, Edinburgh and Haddington; The Lawson Seed and Nursery Company, for seeds; Little & Ballantyne, for cones, seeds, and tools; Wm. Low, Edinburgh; Henry Pooley & Son, Glasgow; Wm. Robertson, Edinburgh; Thomas Robinson & Son, Rochdale, and Diploma; J. Sagar & Co., Halifax, and Diploma; Shanks & Co., Glasgow; R. Sorbie & Son, Sheffield, and Diploma; Taylor Brothers, Sheffield; Thornton & Co., Edinburgh, and Special Diploma for Indiarubber plants; E. Rostrum, Denmark.

Bronze Medals.—Bombay Burmah Trading Corporation for Cutch and articles dyed therewith; W. R. Clapperton & Co., Princes' Street, Edinburgh; Martin Clark, Silvermills, Edinburgh; Wm. Gibson, Glasgow; R. Hartland, Cork; J. M. Imrie, Edinburgh; Robert H. Kyle, Edinburgh; R. T. Linton, Edinburgh; Paterson, Smith & Innes, Edinburgh; Selig, Sonenthal & Co., London; Wm. Wills, Leith.

Diplomas.—W. B. Aitchison, Edinburgh; Henry Anderson, Edinburgh; the Duke of Athole; James Bennet, Edinburgh; Jas. Cruickshank, Edinburgh; D. & J. Fraser, Edinburgh; A. J. Main & Co., Edinburgh; W. H. Maxwell of Munches; R. Paterson, London; W. Richardson & Son, Edinburgh,

Highly Commended.—A. Holmboe, Norway.

Commended.—N. Ahlbottn, Leith; James Dickson & Sons, Edinburgh; J. Palmer & Son, Annan; Peter Tait, Craigleith.

A meeting of exhibitors was held on the 7th inst. at 5, St. Andrew Square, for the purpose of receiving the report of the committee appointed by exhibitors dissatisfied with the awards originally made by the jurors. The report, according to the *Scotsman*, in concluding, states that:—

"In conducting the above revision the Executive had not had the courage to withdraw awards that had previously been allowed in opposition to the judgment of the original jurors, though why they should have refused to do this while assuming the right to advance others contrary to the same judgment seemed to be quite inconsistent and absurd. The consequence was that they had an amended list, contradicting a vitiated list, and the final production left them further removed than before from the original jurors' awards. Those who were satisfied must be congratulated, and those who were not must endeavour to derive satisfaction from the reflection that the awards could in no sense be said to be representative of the original awards, and that their value as awards of merit emanating from competent jurors had been, through the successive ordeals through which they had passed, shattered and completely destroyed. This was a disappointing determination to their great Forestry Exhibition. The points of experience gained by them might be summed up as follows:—(1) Dissatisfaction and discontent might be expected to arise if the composition of the Executive Committee be not as it

should be, and that they had better shun an exhibition altogether if they had not perfect confidence in all the individual components of the Executive; (2) it should be an essential condition that a proper and thorough understanding be entered into with the exhibitors as to the power and control of the Executive as regards the awards, and that all jurors' reports and awards should be received and published verbatim; (3) exhibitors should combine and, if possible, insist upon a sub-committee of their number acting in concert with the Executive, or, if not, that they should appoint a committee of their own specially to look after the general interests of exhibitors."

Remarks having been invited, Mr. Wells, Leith, said he must certainly admit that the Executive Committee had atoned for their behaviour to the exhibitors, and he thought the letter which Sir James Gibson-Craig sent to their Secretary was an ample apology for their misdoings. There was not sufficient care taken in making the awards on the first occasion, but after the experts were appointed he for one had due attention given to his exhibits, and he could see that to other exhibitors near him these experts did give each proper attention.

Mr. Syme, of the Lawson Seed and Nursery Company, moved the approval and adoption of the report.

Reports of Societies.

Crystal Palace: The Hardy Fruit and International Potato Show: *October 7 to 11.*—The first-named exhibition, which, as originally promoted, was to have been an accessory to a harvest festival, but which last was abandoned, from the efficient reason of want of space in the building, was a worthy response to the invitations of the Crystal Palace Company. The fruits staged by our well-known Kentish growers, and from Messrs. Cheal & Sons, T. Rivers & Sons, Veitch & Sons, and Lane & Son, amongst nurserymen, were of wonderfully good quality in regard to size and colour, as seen in the culinary kinds of Apples, and this was especially to be remarked in dessert Pears. Very fine lots were brought from Nova Scotia, under the auspices of the Nova Scotia Fruit Growers' Association, whose agents in London—Messrs. Northard & Co., 20, Tooley Street, E.C.—offered a Silver Cup, that was supplemented by the Crystal Palace Company with £14 10s. additional prize-money.

The winner of the Cup and £5 was Dr. H. O. McLatchey, Wolfville, Nova Scotia. The 2d prize was awarded to the Fruit Growers' Association of Nova Scotia; and the 3d prize to Mr. H. O. Duncannon, Falmouth, Hants county, Nova Scotia; extra prizes being awarded to Mr. R. W. Starr, Starr Point, Fort William, Nova Scotia; to Messrs. E. & O. Chase, Cornwallis, and to E. C. Dickie, Canard, Cornwallis, in the same province. In these collections many sorts occur with which English growers are but little or not at all acquainted, at the same time our standard sorts are likewise seen in capital conditions of size and colour. But although some of the native kinds find their way to our markets during late autumn and winter there does not seem to be anything which can worthily take the place of our best sorts in the two great classes, dessert and cooking Apples.

Open Classes.—For the best collection of Apples, dessert and culinary, six fruits of each, Mr. Haycock, gr. to R. Leigh, Esq., M.P., Barham Court, Maidstone, was 1st, with ninety-eight dishes of splendid fruit, consisting of all the best kinds, of which fifty dishes were of dessert varieties; 2d, Messrs. T. Rivers & Sons, the Nurseries, Sawbridgeworth, with 112 kinds. This firm showed also a late red Guigne Cherry de Winkler, some fruits of Siberian Crabs in variety, Monarch Plum in good condition, Lord and Lady Palmerston Peaches, and Golden Eagle Peach, all pretty to look at. The 3d prize was taken by Mr. A. Waterman, gr. to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford, Kent, with sixty-four sorts, amongst which were many very superior fruits, viz., Blenheim Orange, Ribston, Dutch Mignonne, Lady Henniker, Beauty of Kent, Cox's Orange, Peasgood Nonesuch, Warner's Gloria Mundi, and Claygate Pearmain. 4th prize was awarded to Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston, who had ninety-eight dishes of various degrees of merit, the culinary kinds being very fine. Messrs. Lane & Sons had 142 dishes of Apples, of much merit. For the best collections of Pears, six of each.—1st, Mr. C. Haycock, with fruit of superior excellence, many having the appearance of having been grown under exceptionally favourable conditions of growth, so fine and spotless were they, this being very remarkable in Beurré Superfin, Marie Benoit, Beurré Hardy, Brockworth Park, Pitmaston Duchesse, Triomphe de Jodoigne, and Durondeau; 2d, Mr. G. Goldsmith, Hollanden, Tonbridge, who showed in his usual excellent style Brockworth Park, Beurré Clairgeau, Doyenné Boussoch, Marie Louise, Beurré Diel, and Delices d'Hardenpont, being very fine; 3d, Mr. A. Waterman, who had many equally fine fruit; 4th, Messrs. T. Rivers & Sons.

Fruit.—Amateurs' classes for twenty-four dishes of Apples, which were rather numerously represented.—1st, Mr. C. Haycock, Barham Court, whose Belle du Bois, Reinette du Canada, Ribston Pippin, Lord Derby, Lord Suffield, White Nonpareil, and Golden Noble, were capital examples; 2d, Mr. S. Ford, gr. to W. E. Hubbard, Esq., Leonardslee, Horsham; 3d, Mr. A. Waterman, Preston Hall. For the best twelve dishes of Pears.—1st, Mr. C. Haycock, with superb Pitmaston Duchess, Durondeau, Louise Bonne, Beurré Hardy, Duchesse d'Angoulême, Beurré Superfin, the colour and general condition of all the kinds shown being first-class. 2d, Mr. Goldsmith, with a collection but little inferior to the first; 3d, Mr. W. Dance. For the competition for the best twelve dishes of Apples.—1st, Mr. Goldsmith, Hollanden, the sorts Golden Noble, Ribston, Warner's King, Halldoor, Blenheim Orange, Reinette du Canada, Beauty of Kent, being very good; 2d, Mr. C. Longly, Crabbe House, River, Dover; 3d, Mr. J. Sharpe, gr. to F. Hatchett, Esq., Parkfield, Lee, Kent.

Vegetables—open—of which there were several collections shown. Mr. A. Waterman was awarded the 1st prize for a well grown lot, in which were to be noticed many of the best kinds of seasonable out-of-doors kinds. 2d, Mr. J. Neighbour, gr., Bickley Park, Bickley; 3d, Mr. J. H. Goodacre; the 4th prize was withheld. There was to have been a collection of agricultural productions, sufficient of each sort to be shown to be a fair representation; but only one prize was awarded—that a 4th, to Mr. Goodacre, Elvaston. Gourds were shown in great numbers and variety, 1st and 2d prizes being taken in their respective order by Mr. Sturgess, gr. to Dr. Freshfield, Mount House, Chipstead, Redhill, and by Mr. J. Sharpe, Parkfield, Lee. A 4th prize was awarded to Mr. C. Osman, South Metropoliton Schools, Sutton. For the best collection of Pumpkins.—Mr. S. Osman, with a nice lot of both large and small species and varieties; he also got an extra prize for the heaviest Pumpkin shown; 2d, Mr. G. Sturgess. For the finest ornamental Gourds in collections.—1st, Mr. T. Glen, gr. to Mrs. Montefiore, North Park, Crawley—this was a very varied collection, consisting of many singular and grotesque forms; 2d, Mr. C. Osman.

Vegetables (Amateurs).—For the best twelve dishes, not more than two dishes of any variety.—1st, Mr. J. Neighbour; 2d, Mr. C. J. Waite, gr., Glenhurst, Esher. For the best six dishes.—1st, Mr. T. Beckett; 2d, Mr. L. Harris; 3d, Mr. Patchell. Prizes were offered by Messrs. Sutton & Sons, Reading, of 6 gs., 5 gs., 4 gs., 3 gs., 2 gs., 1 g., for collections of vegetables, the 1st prize being awarded to Mr. W. Meads, gr. to Viscount Barrington, Becket Park, Shrivenham; 2d, Mr. C. Waite; 3d, Mr. C. Osman. For the 4th, 5th, and 6th, there was no competition.

Miscellaneous Awards.—To Messrs. Cheal & Son, Crawley, an extra prize was awarded for a collection of seventy-six dishes of Apples and one of twenty-three dishes of Pears. Messrs. T. Rivers & Sons received an extra prize for Plums and Peaches. Messrs. J. Laing & Co., Forest Hill, S.E., for a collection of Begonias, lifted from the open ground and still loaded with bloom in a quite fresh condition, received an extra prize; as did Mr. H. Deverill, Corn Hill, Banbury, for a collection of Rowsham Park and other Onions, very fine bulbs from home grown seed. Mr. J. Butler, the Gardens, Orchardlane, Sittingbourne, for Pear, Pitmaston Duchess; and Mr. C. Langley, gr., Crabbe House, River, Dover, for 6 dishes of Pears. A First-class Certificate was awarded to Messrs. J. Veitch & Sons, Chelsea, for the new Apple Sandringham, which received a recognition at the Chiswick Apple Congress in 1883. A large collection of Apples, not for competition, was exhibited by the same firm, and a great number of useful and ornamental Gourds was sent from Chiswick, that showed how decorative these plants might be made in the garden.

The International Potato Exhibition.—The annual display of Potatos under the auspices of the International Potato Show Committee was held in association with the great hardy fruit show at the Crystal Palace on Wednesday last and two following days. The display, whilst in some respects less pretentious than in some previous years, yet materially surprised the promoters, because at nearly all previous provincial shows during the autumn Potatos have been presented much rougher than usual, and it was generally anticipated that the same defect would have characterised the Crystal Palace exhibits. Happily, in a considerable degree that anticipation was falsified, for if the general average of quality, or let us rather say, appearance and beauty of the tubers was not up to that of some previous years, yet was it much higher than the promoters had been led to look for. Roughness of skin, and even scab, is no detriment to table quality, but certainly detracts somewhat from the appearance of Potatos. Still, though these features largely prevailed, there can be little doubt but that those who saw an International Potato Show for the first time were amazed at the beauty evidenced and delighted with the varied hues and forms displayed. The tables for the show were on this occasion all ranged beneath the lofty centre transept, and if the space occupied seemed less than usual, at least shorter ranges of tables, so elegantly dressed with plants, proved most convenient to the exhibitors, judges, and visitors. As usual, the show attracted a considerable gathering of the horticultural fraternity, as it is now regarded as one of the most interesting events of the year.

Before entering upon a record of the classes and the awards of the judges we must give due prominence to the interesting fact that for the first time in the history of the shows one exhibitor swept off the 1st prizes in all the chief classes—Mr. Hughes, gr. to Colonel Cartwright, Eydon Hall, Byfield, Notts, having taken, not only the 1st prizes in the classes for twenty-four, eighteen, twelve, and nine kinds, but being also 1st in one or two smaller ones, and 2d in the six kinds, with still other winnings. Literally, it has been a Nottinghamshire year. Mr. Hughes' exhibits were all first-class, and as he showed some seven or eight dozen dishes, his success shows him to be the champion grower of the year. In the premier class for twenty-four kinds, nine tubers of each sort, and in which Messrs. James Carter & Co., High Holborn, gave the 1st prize of £10, as we have said, Mr. Hughes was 1st; Mr. Ellington, of Mildenhall, the champion of last year, coming 2d; Mr. W. Kerr, of Dungarvel, N.B., was 3d; Mr. G. Allen, gr. to Sir F. Burdett, Ramsbury Manor, Hungerford, a new and most promising exhibitor, was 4th; Mr. E. S. Wills, gr. to R. Startwright, Esq., Edgcote Park, Banbury, was 5th; and Mr. Thomas Pickworth, Loughborough, 6th. Very beautiful quality and splendid form were seen in the best collections, which seemed to include all the best kinds in cultivation that are in commerce. A selection made from this class shows, as amongst the very best and handsomest of their sections the following sorts:—White rounds: Schoolmaster, Porter's Excelsior, Bedfont Polific, Prime Minister, Sunrise, Fillbasket, Vermont Champion, Early Border, Early Regent, Fidler's Prolific, White Emperor, and Harvester. Of white kidneys:—International, Snowdrop, Cosmopolitan, Recorder, Snowflake, Magnum Bonum, Sanday's Seedling, Woodstock Kiney, Edgcote Seedling, Chancellor, and Alderman. Of coloured rounds:—Reading Russet, Vicar of Laleham, The Dean, Radstock Beauty, Adirondack, Blanchard, Matchless, Peachbloom, and Grampian. Of coloured kidneys:—Mr. Bresee, Cardinal, Edgcote Purple, Prizetaker, Sir Garnet Wolseley. Mottled red:—Beauty of Hebron, Queen of the Valley, American Purple, and Trophy. Cardinal, red kidney, and Edgcote Purple were Certificated last year, and both were seen in splendid form in several collections. There were twelve lots in competition. The class for eighteen varieties has long been regarded as the Messrs. Sutton's, as they give all the prizes, but limit the competition solely to gentlemen's gardeners. Here Mr. J. Hughes was 1st; Mr. Holt, gr. to Major Allfrey, Wokefield Manor, Mortimer, Berks, was 2d; Mr. Miles 3d, Mr. G. Allen 4th, and Mr. Jas. Lye, Market Lavington, Wilts, 5th. The quality shown here was of hardly so refined a form as seen in the previous competition, but still the exhibits were most meritorious. Nearly all the kinds shown are to be found in the list given above. In the class for twelve kinds of Potatos we find Messrs. Daniels Brothers, of Norwich, and Messrs. Brinkworth, of Reading, amongst the donors of prizes. There was here excellent competition Mr. Hughes being 1st again, Mr. Ellington coming next, with rather smaller samples, but exceedingly pretty ones; Mr. Pickworth was 3d, Mr. Lye 4th, and a new name, that of Mr. R. West, gr. to J. R. Wigram, Esq., Northlands, Salisbury, 5th. The familiar kinds were in this class again to the front, as also were they in the following class for nine kinds, in which all the prizes were offered by Mr. C. Fidler, of Reading. Here Mr. Hughes again took the lead, Mr. Tom Tooley, of Banbury, Oxon, coming 2d; Mr. R. Dean, Ealing, 3d; Mr. W. Kerr, who had in his collection the pretty Defiance Kidney and a white round named Brownell's White, was 4th; another North-countryman, Mr. R. Ironsides, Keith Hall, Aberdeenshire, coming last, having some beautiful samples of Grampian, Cosmopolitan, Cromwell, and Lady Truscott. With six kinds Mr. Dean was a good 1st, having Mr. Bresee, Cosmopolitan, Vicar of Laleham, Sunrise, Snowflake, and The Dean; Mr. Hughes coming 2d; Mr. S. Stanton, Maidford, Towcester, 3d; Mr. Tom Tooley 4th, and Mr. Kerr 5th. The classes for three dishes of kinds in sections of shape or colour were less well filled than usual, but others of a similar kind for exhibitors who have not previously taken a 1st prize at these shows were productive of considerable competition, as reported below. In the open class for three white kidneys, Mr. Kerr was 1st, with King Offa (a very white kind), Pride of America, and Myatt's Ashleaf; Mr. Ellington, who was 2d, had Magnum Bonum, Lord Beaconsfield, and International; and Mr. Creed, Faversham, was next; Mr. J. Bloxham, the Gardens, Brickhill Manor, Bletchley, was 4th. With three coloured kidneys Mr. Hughes was again to the front with Edgcote Purple, Mr. Bresee, and Prizetaker; Mr. Kerr coming 2d, having a beautiful dish of the mottled red and white kidney, Sir Garnet Wolseley; Mr. Ellington and Mr. Wills coming 3d and 4th. Mr. Ellington was 1st in the class for three white rounds, Messrs. Hughes, Kerr, and Pickworth following; whilst in the class for three coloured rounds Mr. Dean came 1st, with Vicar of Laleham, Matchless, and Reading Russet; Mr. Wills coming 2d, Mr. Ellington 3d, and Mr. Hughes 4th. The Messrs. Sutton & Sons liberally offered all the prizes in four single dish classes, twelve tubers, to be shown in this case as under, all the kinds to be solely of English origin. Any white round kind.—Mr. H. Howard, of Bridge, Canterbury, was 1st, with grand Schoolmaster; Mr. Lye coming next, with fine Porter's Excelsior; Mr. Ironsides following with Donaldson's Victoria alba, very like Victoria; and Mr. Scotchbrook, Whittlesea, 4th, with Schoolmaster again. The best dish of red rounds was from Mr. Howard also, who had fine Vicar of Laleham; Mr. R. Dean and Mr. Kirtland, Bletchington, Oxon, coming 2d and 3d, with

the same kind; and Mr. Hughes coming 4th, with large though rather rough Reading Russet. A beautiful dish of International, shown by Mr. Scotchbrook, was the best white kidney; Edgcote Seedling, shown by Mr. Wills; Cosmopolitan, by Mr. Allen; and Woodstock Kidney, by Mr. Ironsides, following in that order. Mr. Sidney Ford, Leonardslee, Horsham, had the best coloured kidney in beautiful Prizetaker, Defiance and Edgcote Purple following. In all the classes the competition was excellent. Messrs. James Carter & Co. gave all the prizes in the class for the best white kind put into commerce last winter, Mr. T. McKinlay coming 1st with a fine dish of Chancellor; Mr. Ross, Welford Park, Newbury, was 2d with Welford Park Seedling; Mr. Dean followed again with Chancellor, a very fine, handsome kidney; and Mr. Hughes came 4th with Fidler's Prolific, formerly known as Beauty of Eydon. In a similar class for the best-coloured Potato, Mr. C. Fidler, of Reading, giving all the prizes. Mr. R. Dean, Mr. Hughes, and Mr. Ross, had fine examples of The Hero, Mr. Wills coming 4th with Edgcote Purple.

We may add here that among others interested in horticultural matters who gave special prizes in the above classes were Mr. P. McKinlay, Mr. Shirley Hiberd, Mr. Wm. Earley, Mr. R. Dean, Messrs. Webb & Sons, Stourbridge; Messrs. Barr & Son, Covent Garden; Messrs. Thomas Gibbs & Co., Down Street, Piccadilly; Mr. H. M. Pollet, Bickley; and Messrs. Hooper & Co., Covent Garden.

Classes were published for seedling kinds, all of which, before being eligible for awards, must, as is well known, have been grown at Chiswick during the summer, and where the awards are really made. There are no prizes in these classes, but simply Certificates of Merit are awarded. Chancellor, Harvester, round white; and London Hero, the latter not yet in commerce, a handsome pebble-shaped white, received Certificates to the credit of Mr. R. Dean. M.P., a very fine cropping white round, brought the same honours to Mr. Ross; and Substrata, a flattish white kind, to Mr. Holmes. Mr. Fenn, of Sulhampstead, was awarded a Certificate for his handsome flat red kidney James Abbis, and Mr. Ross also for his white kidney, Miss Fowler. Mr. Ellington received a similar award for Ellingtonia, a handsome red kidney streaked with purple. All these kinds have been proved to be of first-class quality and fine croppers. Of others that stood high up in the number of marks were Rufus, flat red round; Rosebud, flat rose-coloured round, and Bedfont Rose, fine round pale red kind, all raised by Mr. Dean. Bedfont Rose is one of the best keeping Potatos yet raised. We must add that Mr. Hughes worthily took a Certificate for his handsome white kidney, Pride of Eydon.

EXTRA CLASSES OF POTATOS, for those who have not taken a 1st prize at an International Potato show.—For the best three dishes of white round Potatos, of which there were many competing lots, 1st, Mr. E. Chopping, Milton, Sittingbourne; 2d, Mr. G. Allen, with Porter's Excelsior, Schoolmaster, and First and Best, in both lots; 3d, Mr. Jas. Lye, Market Lavington; 4th, Mr. W. Skarrot, gr. to Miss Harrison, Maidenhead Thicket, Bucks. For coloured rounds.—1st, Mr. G. Kirkland, Bletchington, Oxon, with Reading Russet, Vicar of Laleham, and Adirondack; 2d, Mr. J. Lye, with Beauty of Kent, Blanchard, and Vicar of Laleham; 3d, Mr. W. Skarrot; 4th, Mr. G. Allen, gr. to Sir F. Burdett, Ramsbury Manor. For three dishes of white kidneys.—1st, Mr. W. Skarrot, with Magnum Bonum, International, and Cosmopolitan; 2d, Mr. G. Allen, with Woodstock Kidney, Snowdrop, and Edgcote Kidney; 3d, Mr. E. Chopping; 4th, Mr. R. West, gr. to J. R. Wigram, Esq. For three dishes of coloured kidneys.—1st, Mr. R. West, with Sutton's Prizetaker (very fine), American Purple, Mr. Bresee; 2d, Mr. Rogers, Syer House, Wittlesey, with Cornwall Beauty, Beauty of Hebron, and Trophy; 3d, Mr. G. Allen; 4th, Mr. W. Skarrot. Messrs. Sutton & Sons, Reading, offered prizes for the best four dishes of Potatos put in commerce by them, twelve tubers of each, distinct. This competition was open to noblemen's and gentlemen's gardeners, and the awards were made by three gentlemen's gardeners who were not competitors. The 1st prize was adjudged to Mr. J. Hughes, gr. to Colonel Cartwright, Eydon Hall, Byfield, Notts, his kinds being Woodstock Kidney, of fine size and quality; Sutton's Reading Russet, First and Best, and splendid Prizetaker kidneys; 2d, Mr. C. Osman, with Reading Hero, Early Regent, Reading Russet, and Fillbasket; 3d, Mr. G. Allen; 4th, Mr. Lazell, gr. to R. Hartland, Esq., Phipps Bridge, Merton. Messrs. Sutton & Sons, Reading, showed thirty-nine varieties of Seedling Potatos, not yet in commerce, that show capital qualities of form, colour, and size, of which Fox's Seedling and Magnum Bonum have been the parents. Seedlings numbered 216 and 220 were certificated. The same growers showed an excellent collection of forty-six sorts named, both in rounds and kidneys, and another collection of fifty-four kinds, in which those of American origin predominated. From the Bedfordshire Experimental Gardens, Girtford, Sandy, came many of Laxton's hybrids, fine quality being conspicuous in most, the parents being generally Myatt's Prolific, Early Border, and Magnum Bonum. Mr. Fidler, Reading, had eighty-two dishes of capital tubers of Sutton's, Fidler's, and American raising. Messrs. Harrison & Sons, seed growers, Leicester, showed tubers in quantities of such kinds as International, Bresee's Peerless, White Elephant, Pride of America, Woodstock Kidney, Red Emperor, Grampian, Reading Hero, St. Patrick, Mr. Bresee, Wormleighton Seedling, Centennial, and others of good quality—in all fifty-two kinds. Messrs. Carter & Co. showed large heaps of Early Rose, Early Ashleaf, Magnum Bonum, Beauty of Hebron, Schoolmaster, and several more well known, esteemed and trustworthy sorts.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENDING WEDNESDAY, OCTOBER 8, 1884

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
2	29 83	+0.14	60 5	42 0	18 5	52.3	— 1 9	46.6	80	E. : S. S.W.	0 04
3	30 02	+0 31	60 2	48 2	12.0	53 0	— 0 9	42.2	67	N.W. : N. NW	0 00
4	30 38	+0 69	59 0	30.5	18.5	40 6	— 3.9	43 2	70	N. NW.	0 00
5	30 43	+0 74	60.6	43.5	17 1	51 0	— 2 2	43 4	78	N N F	0 00
6	30 21	+0 56	59 5	48.3	11 2	53.7	+ 0 8	49.4	85	N.E.	0.04
7	29 89	+0 20	61 0	51.5	9 5	54 8	+ 2 2	48 9	79	E N E	0 02
8	29 54	—0.14	58.5	15 0	43 5	51.0	— 1.2	44 9	80	W. : W N W	0 08
Mean	30 04	+0 36	59 9	45.6	14 3	52.2	+ 1 0	45 5	78	variable	0 18

Oct. 2.—Misty in early morning; slight showers during the day. Fine clear moonlight night.
— 3.—Fine day and night.
— 4.—Very fine day and night. Eclipse of the moon from 8.15 P.M. to 11.49 P.M.
— 5.—Fine day and night, dull, and mostly overcast.
— 6.—Fine, dull day and night; frequent slight showers of rain.
— 7.—Dull, and very windy mostly.
— 8.—Fog in early morning; fine bright day. Moon occasionally seen at night.

LONDON: *Atmospheric Pressure.*—During the week ending October 4, the reading of the barometer increased from 30.03 inches at the beginning of the week to 30.09 inches by 9 A.M. on the 28th, decreased to 30.07 inches by 2 P.M. on the same day, increased to 30.22 inches by midnight on September 29, decreased to 30.04 inches by 9 A.M., and increased to 30.17 inches by midnight on October 1, decreased to 29 95 inches by midnight on the 2d, and was 30.66 inches by the end of the week.

The mean reading of the barometer for the week was 30.18 inches, being 0.16 inch higher than last week, and 0.29 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 63°.5 on September 30, the highest on October 4 was 59°. The mean of the seven high day temperatures was 61°.5.

The lowest temperature was 40°.5 on October 4; on September 29 the lowest temperature was 55°. The mean of the seven low night temperatures was 47°.6.

The greatest range of temperature in one day was 19°.3, on September 30; the smallest was 7°.2 on September 29. The mean of the seven daily ranges was 13° 9.

The mean temperatures were—on September 28, 58°.9; on the 29th, 57°.5; on September 30, 53°.7; on October 1, 55°.4; on the 2d, 52°.3; on the 3d, 53°; on the 4th, 49°.6; of these September 28 to September 29, and October 1, were above their averages by 4°.4, 3°.1, and 1°, the rest were below by 0°.6, 1°.9, 6°.9, and 3°.9 respectively.

The mean temperature for the week was 54°.3, being 2°.3 lower than last week, and 0°.2 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 106°.5, on October 1. The mean of the seven daily readings was 98°.7.

The lowest reading of a minimum thermometer with its bulb placed on grass was 29°.5, on October 4. The mean of the seven readings was 38°.1.

Rain.—Rain fell on four days to the amount of 0.16 inch.

ENGLAND: *Temperature.*—During the week ending October 4, the highest temperatures were 70°, at Leeds, 69°.6 at Cambridge, 68°.2 at Brighton; the highest at Plymouth was 62°.8, at Wolverhampton 63°.2, at Blackheath 63°.5. The general mean was 65°.9.

The lowest temperatures were 32°.1, at Nottingham, 36° at Cambridge, 37° at Truro; the lowest at Brighton was 46°.8, at Liverpool 44°.4, at Preston 44°. The general mean was 39°.5.

The greatest ranges were 34°.6 at Nottingham, 33°.6 at Cambridge, 31° at Leeds; the smallest ranges were 21°.4, at Brighton, 21°.5 at Preston, 21°.9 at Liverpool. The general mean was 26°.4.

The mean of the seven high day temperatures was highest at Truro and Cambridge, 64°.1, at Brighton 62°.5; and was lowest at Bolton, 57°.7, at Liverpool 58°.2, and at Wolverhampton 58°.4. The general mean was 60°.7.

The mean of the seven low night temperatures was highest at Brighton, 50°, at Bristol 49°, at Plymouth 48°.2; and was lowest at Wolverhampton, 42°.5, at Nottingham 44°, at Bolton 44°.3. The general mean was 46°.4.

The mean daily range was greatest at Cambridge, 18°.9, at Nottingham 16°.9, at Leeds 16°.6; and was least at Liverpool, 10°.4, at Bristol and Preston 11°.8. The general mean was 14°.3.

The mean temperature was highest at Brighton, 55°.1, at Truro 54°.6, at Blackheath 54°.3; and was lowest at Wolverhampton, 49°.3, at Bolton 49°.9, at Nottingham 51°.3. The general mean was 52°.5.

Rain. — The largest falls were 0.99 inch at Preston, 0.59 inch at Bolton, 0 37 inch at Liverpool; the smallest falls were 0.01 inch at Cambridge, 0 05 inch at Sheffield, 0 06 inch at Leeds. The general mean fall was 0.25 inch.

SCOTLAND: *Temperature.*—During the week ending October 4 the highest temperature was 61°, at Paisley; at Greenock the highest was 57°. The general mean was 59°.8.

The lowest temperature was 40°.8, at Aberdeen; at Paisley the lowest temperature was 45°.1. The general mean was 43°.

The mean temperature was highest at Leith, 52°.4, and lowest at Greenock, 49°.9. The general mean was 51°.2.

Rain. — The largest fall was 2 47 inches, at Greenock, and the smallest fall was 0.43 inch, at Aberdeen. The general mean fall was 1.04 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

WATER MOSS. My pond is full of a weed, of which I enclose specimens [Fontinalis antipyretica] I have had it raked out, and keep swans, but I cannot keep the weed down. What else can I do? *L.*

Answers to Correspondents.

AMERICAN SOCIETY: *Miss A. W. D., Brookline, Mass.* The name is that of the Society of the district in which the show was held.

BERRY: *W. S. P.* The word "berry" has a distinct technical meaning besides its popular one. We take it the word is used in your case in the popular sense. If so, it includes all fruits or seed-vessels which are fleshy or pulpy in consistence, whether edible or not.

BRACKEN: *X.* To plant 10 acres of land with Bracken would require you to plant the rhizomes or root-stocks of old plants at intervals of 5 or 6 feet all over the surface, and trust to chance seedlings, and the growth of the old roots, to cover the soil. The land ought to be light and suitable for Ferns, or they will make but poor progress, as old Ferns do not bear moving with impunity.

COMPOSITION FOR TREES AGAINST RAVAGES BY VERMIN: *T. Wynne.* Nathaniel Ahibotter, 50, Shore, Leith.

DAHLIA PICTA FORMOSISSIMA: *N. Y.* There is nothing unusual in this, for the genus is very variable, an attribute that has given us many good blooms.

FUNGI: *A. B. S., Edinburgh.* It is necessary that fungi for naming should be sent perfectly fresh and unmutilated, not putrid, like these examples. No. 1 may be the fungus you name, Agaricus campestris; 2, some Lepiota, possibly Agaricus cristatus; 3 and 4, species of Coprinus, now little more than an inky fluid. —*C. Warwick.* A small specimen of Lycoperdon giganteum. When young, fresh, and snow-white in colour, it is delicious and wholesome fried in thin slices.

MEALY BUG ON THE VINE: *E. D. E.* As you have tried paraffin and fail to keep the insect under, why not try the older remedy of painting the Vines with dried and powdered clay, mixed to the consistency of paint with gas-tar, applied warm at the winter dressing, after a thorough washing and scraping off the loose bark?

NAMES OF FRUIT: *J. L. D.* Lord Grosevenor. — *T. Thirlby.* Peach Lord Palmerston, not always good; Princess of Wales is as late, and a better fruit. No October Peaches are good in all years.—*J. Smith, Castle Malwood.* By taking no note of our rule to name only six sorts you have put us to much trouble and expense. *Pears:* 1, Napoléon; 4, Automne Bergamotte; 2, 3, 37, 45, Glou Morçeau; 10, Beurré de Capiaumont; 15, 43, 44, 50, Marie Louise; 13, Flemish Beauty; 29, 30, 52, Vicar of Winkfield; 9, 19, Beurré d'Amanlis; 24, 54, Louise Bonne of Jersey; 48, Fondante d'Automne; 16, Comte de Lamy; 51, Gansell's Bergamotte; 12, Easter Beurré; 5, 7, 39, Duchesse d'Angoulême; 6, Passe Colmar; 33, Caullac; 47, Beurré Diel; 57, Beurré Rance; 42 and 46, quite decayed. — *W. S. Dowson.* Jefferson Plum. — *D. Donald.* Maiden's Blush. — *H. L. E.* 1, Winter Majetin; 3, Jacques Lebel; 4, Hicks' Fancy. *Pears:* 1, Beurré Rance; 2, Beurré d'Aremberg. — *E. Purbery.* 1, probably Bedfordshire Foundling; 3, Winter Codlin; 4, Hambledon Deux-ans; 5, Margil; 6, Braddick's Nonpareil. — *St. Leonards.* 1, 4, Beurré

Hardy; 3, Emile d'Heyst; 5, Althorp Crassane; 6, Knight's Monarch; 2, not known.—*L. Hartley.* 1, Old Crassane; 2, Beurré d'Amanlis; Apple, Tibbet's Pearmain.—*Percy Ingram.* 1, Lane's Prince Albert; 2, Hanwell Souring; 5, Gloria Mundi, highly coloured; 6, Golden Winter Pearmain; others not recognised.

NAMES OF PLANTS: *G. Paul.* Nicandra physaloides. *W. Lewis.* Pyrethrum uliginosum. — *J. A.* 1, variety of common Laurel; 2, Coronilla Emerus; 3, Cotoneaster frigida; 4, Ampelopsis hederacea; 5, Cupressus Lawsoniana; 6, Thuia occidentalis.—*Fairfort.* Without label, dark-centred scales, Lastrea dilatata; 2, Lastrea spinulosa—not characteristic; 3, Lastrea Filix-mas—a small specimen of the var. incisa; 142, 143, Athyrium Filix fœmina, ordinary forms.—*G. D.* Onoclea sensibilis.—*G. B.* Osmunda regalis cristata.—*Buckland.* 1, Atropa Belladonna; 2, Clethra alnifolia; 3, Verbascum Thapsus; 4, Commelyna cœlestis; 5, Fuchsia magellanica; 6, Acanthus spinosus; 7, not known; 8, Pyrethrum lacustre.

PEACH STONE AND VINE ROD: *Deodar.* We cannot say with certainty that the results would be as stated, although it is probable that a branch of a Vine stuck in the soil in Queensland would bear fruit the third year; the other case is less likely unless worked on an older stock.

PINKS: *E. F. G.* Flowers poor in form, and the colour that of Anne Boleyn. Their duration of bloom is their only recommendation.

SINGLE MARIGOLD: *Messrs. Garraway.* Very pretty border flowers.

TOMATOS: *James Parker.* The foliage is very thin, and seems to be scalded by the sun shining on them, possibly when in a wet state.

VINES DISEASED: *A Constant Reader.* Your Vines show undoubted traces of Phyiloxera; in fact a few shrivelled insects were found on the roots forwarded. Take them out of the soil as thoroughly as you can, and burn every particle of the Vine. Send us all particulars as to where you obtained the Vines, how cultivated, in what soil, and how long the Vines have shown symptoms of something having affected them, and also send larger roots, packed in damp moss to prevent drying up.

CATALOGUES RECEIVED.

G. COOLING & SON, Bath—Fruit Trees, Roses, &c.
RODGER, M'CLELLAND & CO., Newry—Hardy Perennials, Grasses and Alpines, Aquatics, &c.
MR. C. TURNER, Slough—Roses, Fruit Trees, Trees and Shrubs; also Carnations, Picotees, and Pinks.
DAMMAN & CO., Portici, Naples—Seeds, Wholesale List.
S. DIXON & CO., Hackney—Chrysanthemums.
WRENCH & BARNES, Woodbridge—One Man Cross-cut Saws.
JOHN WATERER & SONS, Bagshot—Rhododendrons, Trees, &c.
H. CANNELL & SON, Swanley, Kent—Flowers and Bulbs.
W. RUMSEY, Waltham Cross—Rose, Fruit, and other Trees; Shrubs.

COMMUNICATIONS RECEIVED:—A. R.—N. L.—J. B.—H.—W. F., Isle of Man (next week).—H. H. D'O.—W.—C. R.—J. S.—Messrs. Sutton.—J. C. T.—Little & Ballantyne.—H. M. P.—F. T.—J. V. & Sons.—J. H. (next week)—A. R. L. (next week)—R. E. (next week)—A. Francis.—T. Short.—A. A. H.—R. R. W.—Philomelos—Messrs. Carter & Co—"Strebor."—W. P.—J. T—W. W. & S.—Robertson Munro.—J. Gordon.—H. E.—W. G. S.—William Earley.—F. W. Burbidge.—H. T. S.—W. J. M.—Wild Rose.—W.—J. P.—R. E.—F. Tafnal.—W. Parker.—P. & S.

Markets.

COVENT GARDEN, October 9.

MARKET well supplied with all classes of goods, prices remaining with little or no alteration. A large arrival of St. Michael's Pines this week. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Pine-apples, Eng., lb.	4 0-	5 0
Cobs, per 100 lb.	55 0-	57 6	Peaches, per doz.	3 0-	8 0
Grapes, per lb.	0 6-	4 0	Pears, French, doz.	1 0-	2 0
Lemons, per case	21 0-	..	Pines, St Michael's, each	3 0-	6 0
Melons, each	1 0-	1 6			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0-	4 0	Lettuces, Cabbage, per dozen	1 6-	..
Beans, French, lb.	0 4-	..	— Cos, each	0 2-	..
Beet, per doz.	1 0-	..	Marrows, each	0 2-	..
Cabbages, per doz.	1 6-	2 0	Mint, green, bunch	0 4-	..
Carrots, per bun.	0 6-	..	Mushrooms, p. baskt.	1 0-	2 0
Cauliflowers, English, dozen	1 0-	2 6	Onions, per bunch	0 6-	..
Celery, per bundle	1 6-	2 6	— Spring, per bun.	0 6-	..
Cucumbers, each	0 6-	1 0	Parsley, per bunch	0 4-	..
Endive, English, per dozen	1 0-	..	Peas, English, quart	2 6-	..
Garlic, per lb.	0 6-	..	Radishes, per doz.	1 6-	..
Herbs, per bunch	0 2-	0 4	Small salading, per punnet	0 4-	..
Horse Radish, per bundle	3 0-	4 0	Spinach, per bushel	2 6-	..
			Tomatos, per lb.	0 6-	1 0
			Turnips, bun.	0 5-	..

POTATOS.—Magnum Bonums, 50s. to 70s.; Regents, 70s. to 80s. per ton. Trade very quiet.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0	Ferns, in var., dozen	4 0-	18 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Ficus elastica, each	1 6-	7 0
— (common), dozen	6 0-	12 0	Foliage Plants, various, each	2 0-	10 0
Asters, per dozen	3 0-	6 0	Fuchsias, per doz.	3 0-	6 0
Begonias, per doz.	4 0-	12 0	Hydrangea, per doz.	9 0-	18 0
Bouvardia, dozen	9 0-	18 0	Lilium lancifolium, per dozen	6 0-	18 0
Chrysanth., dozen	4 0-	9 0	— auratum, doz.	12 0-	24 0
Cockscombs, doz.	2 6-	4 0	Marguerite Daisy, per dozen	8 0-	12 0
Coleus, various, doz.	3 0-	9 0	Mignonette, per doz	3 0-	6 0
Cyperus, per dozen	4 0-	12 0	Myrtles, per doz.	6 0-	12 0
Dracæna term. doz.	30 0-	60 0	Palms in variety, each	2 6-	21 0
— viridis, per doz.	12 0-	24 0	Pelargoniums, scarlet, per dozen	2 0-	6 0
Erica, various, doz.	9 0-	18 0	Solanums, dozen	9 0-	12 0
Euonymus, various, per dozen	6 0-	18 0			
Evergreens, in var., per dozen	6 0-	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0	Lapageria, red, 12 blooms	1 0-	2 0
Arum Lilies, 12 blms.	3 0-	6 0	Marguerites, 12 bun.	3 0-	6 0
Asters, 12 bunches	3 0-	6 0	Mignonette, 12 bun.	1 0-	4 0
Azalea, 12 sprays	1 6-	2 6	Pelargoniums, per 12 sprays	0 6-	1 0
Bouvardias, per bun.	0 9-	1 0	Primula, double, bun.	1 0-	1 6
Camellias, per doz.	4 0-	6 0	Pyrethrum, 12 bun.	2 0-	6 0
Carnations, 12 blms.	1 0-	2 0	Roses (indoor), doz.	1 0-	4 0
Chrysanth., 12 bun.	3 0-	9 0	— (outdoor), 12 bun.	4 0-	12 0
— large, 12 blooms	3 0-	6 0	— coloured, doz.	4 0-	9 0
Cornflower, 12 bun.	2 0-	4 0	Stephanotis, 12 spr.	4 0-	8 0
Dahlias, 12 bunches	3 0-	6 0	Sweet Peas, 12 bun.	1 6-	4 0
Eucharis, per doz.	3 0-	6 0	Tropæolum, 12 bun.	1 0-	2 0
Forget-me-not, 12 bunches	2 0-	6 0	Tuberoses, per doz.	0 6-	1 0
Gardenias, 12 blms.	3 0-	6 0	Violets, 12 bun.	0 9-	1 3
Gladiolus, various, 12 spikes	1 0-	3 0	— Parme, Fr., bun.	3 0-	4 0
Heliotropes, 12 sp.	0 6-	1 0	White Jasmine, per bunch	0 6-	1 0

SEEDS.

LONDON: *October* 8.—There were very few buyers on the seed market to-day, with but little business doing. The demand for seeds required for autumn sowing is now nearly over, whilst as regards the wants of next spring no enquiry has yet arisen. Winter Tares are in somewhat improved request at steady rates. There is no change in either Mustard or Rape seed. As regards bird seeds values are weak. Haricot Beans continue cheap. Blue Peas move off slowly on former terms. In Linseed the tendency is upwards. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday English Wheat met a slow sale at the rates current a week ago; for foreign the demand was dull, prices showing no appreciable change from those of the previous Monday. Flour was held for late values, but buyers very scarce; malting Barley was rather firmer, but not in much demand; grinding sorts found a very strong market and were pretty generally 1*s* dearer on the week; Maize showed an advance of 6*d.*; Oats have risen to the same extent. Foreign Beans were in heavy supply, and brought prices down 1*s.* to 1*s.* 6*d.* per quarter; Peas were unchanged.—Wednesday's Wheat trade was dull and the business done too small to establish quotations. Flour continued dull, with quotations nearly nominal. Barley was steady in value; Maize, with a light supply, was firm; Oats were firm, but without much business; Beans and Peas remained unaltered.—Average prices of corn for the week ending Oct. 4:—Wheat, 32*s.* 4*d.*; Barley, 31*s.* 9*d.*; Oats, 19*s.* For the corresponding period last year:—Wheat, 40*s.* 2*d.*; Barley, 34*s.*; Oats, 19*s.* 11*d.*

CATTLE.

At Copenhagen Fields on Monday there was a full supply of native cattle. Prime and choice qualities cleared off early at steady value. Second qualities and rough cattle sold badly, at very irregular prices. Increased supplies of sheep met a slow trade without change in the value of British. Foreign calves showed reduced rates.—Quotations:—Beasts, 4*s.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 3*s.* 8*d.* to 5*s.* 8*d.*; sheep, 5*s.* to 5*s.* 4*d.*, and 5*s.* 10*d.* to 6*s.* 4*d.*; pigs, 4*s.* to 4*s.* 6*d.*—Thursday's trade was dull and weak. Beasts sold at rather less money than on Monday, and sheep dropped in value. There was a fair demand for calves, and pigs were dull.

HAY.

Tuesday's Whitechapel Market report states that trade was exceedingly dull, with a fair supply. Quotations:—Prime old Clover, 95*s.* to 112*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 112*s.*; best meadow hay, 80*s.* to 95*s.*; inferior, 40*s.* to 65*s.*; and straw, 30*s.* to 37*s.* per load.—On Thursday there was a large supply on offer, but the trade was very dull at late prices.—The Cumberland market report states that there was a large supply with a slow demand, at the following prices:—Clover, best, 100*s.* to 108*s.*; inferior, 70*s.* to 80*s.*; meadow hay, best, 80*s.* to 90*s.*; inferior, 60*s.* to 70*s.*; and straw, 28*s.* to 34*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that there were fair supplies and quiet trade, with prices tolerably steady. Quotations:—Kent Regents, 60*s.* to 70*s.*; Essex Shaws, 50*s.* to 65*s.*; Magnum Bonums, 45*s.* to 70*s.*; Victorias, 70*s.* to 80*s.*; and Champions, 45*s.* to 60*s.* per ton.—The imports into London last week were 2921 bags from Hamburg, 230 Rotterdam, 63 tons Portmieux, and 78 sacks from St. Nazaire.

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This old-established Manure is acknowledged by most of the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. For Vines it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape-growers. It is a clean and dry powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

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May be obtained from most known Seedsmen in the United Kingdom and the Colonies.

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Sold in Jars, 8 oz., 1*s.* 6*d.*; 20 oz., 3*s.*; and in Tins, 14 lb., 15*s.* 6*d.*; and Drums, 28 lb., 25*s.*; 56 lb., 50*s.*; 112 lb, 95*s.* Full directions for use upon each package.

And 2 oz. Sample Jars, 6*d.* each.

"LONDON" TOBACCO POWDER.—This preparation consists of best Virginian Tobacco, finely ground, and mixed with other ingredients of an essential character. Price, in Tins, 1 lb., 1*s*; 3 lb, 2*s.* 6*d.*; and 5 lb., 4*s.*; or, in Bulk, £3 12*s.* per cwt.

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BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, *4d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, *4d.* each.
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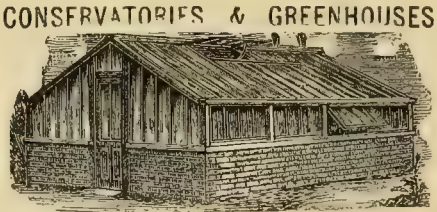



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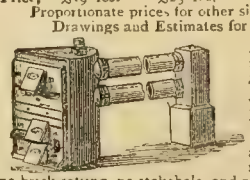
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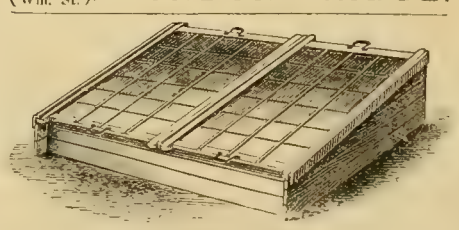
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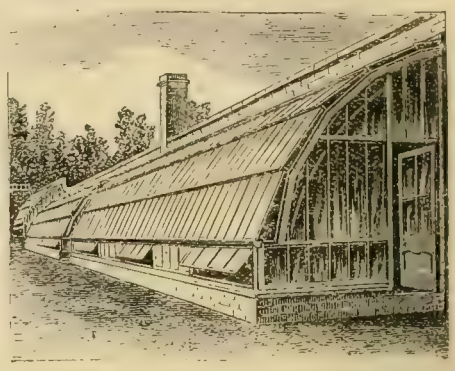
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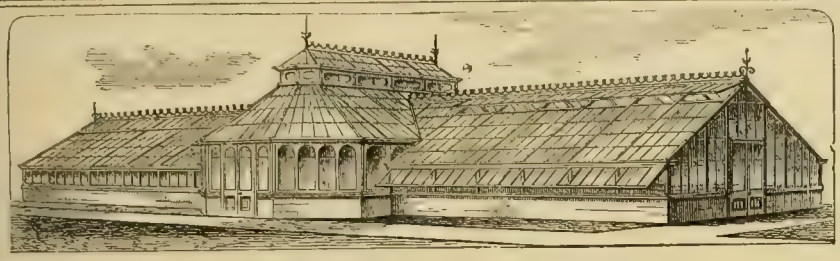
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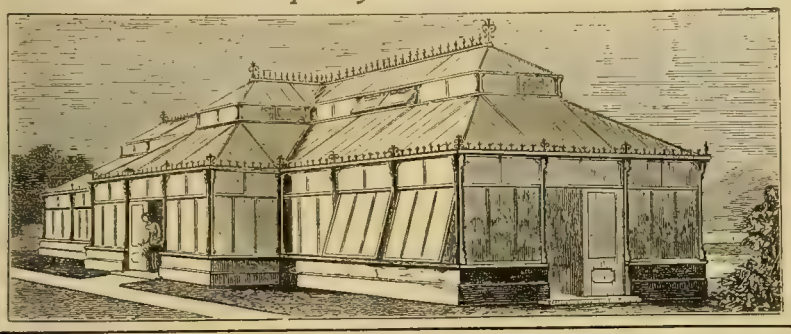
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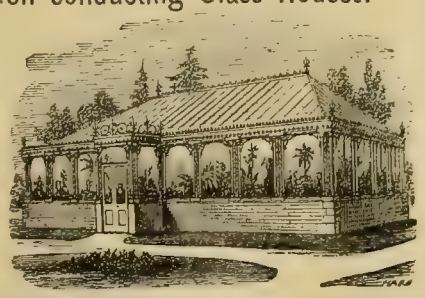
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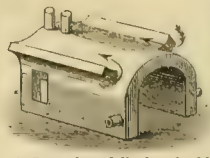
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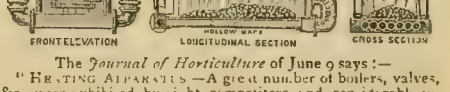
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"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

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"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

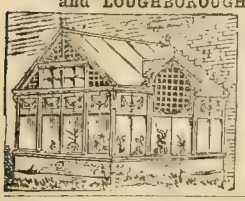
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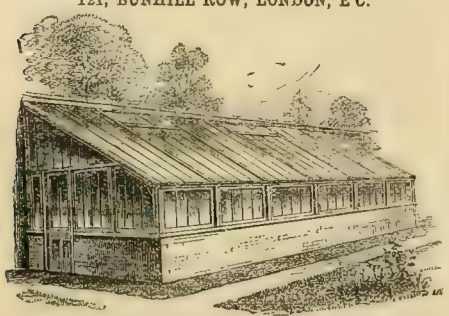
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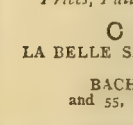
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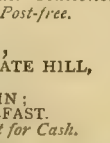
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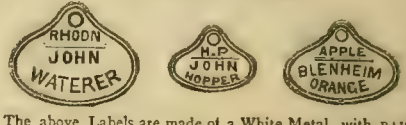
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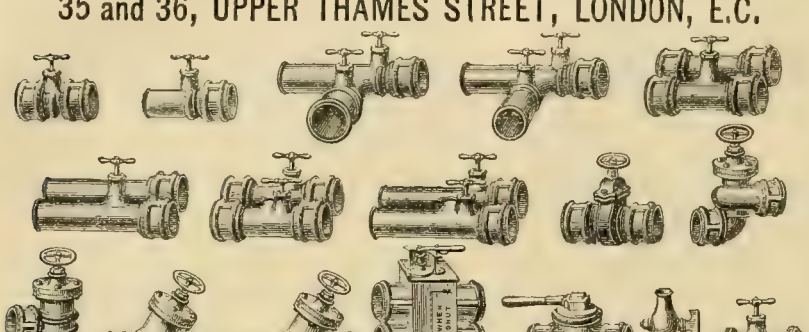
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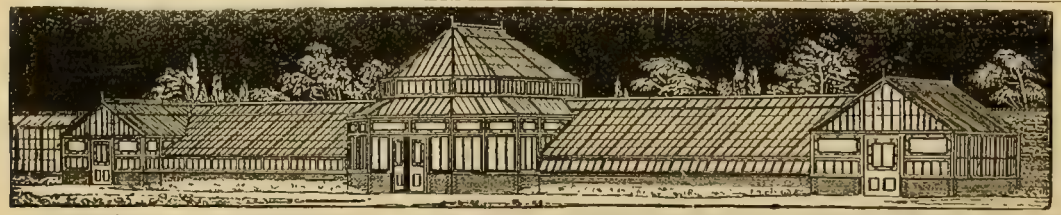
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 11, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 564.—Vol. XXII. {New Series.} SATURDAY, OCTOBER 18, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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Tuesday Next.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will include in their SALE by AUCTION at the Central Sale Rooms, 67 and 68, Cheapside, E.C, on TUESDAY NEXT, October 21, at half-past 12 o'Clock precisely, about 250 Lots of selected ESTABLISHED ORCHIDS from three well-known collections, including Masdevallia Normani. Cattleya Dormaniana, Dendrobium Ainsworthi, Cattleya Dowiana, Vanda tricolor, V. cœrulea, Sobralia macrantha nana, Lælia purpurata, Dendrobium Dearei, Anguloa Ruckeri sanguinea, Aërides Rohaneana, Lælia elegans, Vanda Cathcarti, &c.

On view morning of Sale, and Catalogues had.

Tuesday Next.
A COLLECTION of ESTABLISHED ORCHIDS, the property of the late S. Mart, Esq, of Sutton Lodge, Sutton-at-Home, by Dartford, for Unreserved Sale.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL the above collection, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, October 21, at half-past 12 o'Clock precisely, comprising CATTLEYA GIGAS, C. PERCIVALIANA, C. CITRINA, C. LEOPOLDI, C. ELDORADO, C. TRIANÆ, and C. MOSSIÆ, nearly the whole of the latter with flower-sheaths: ODONTOGLOSSUM RAMOSISSIMUM, O. EDWARDI, O. ALEXANDRÆ, and others; LÆLIA PURPURATA, L. AUTUMNALIS, L. PEDUNCULARIS, GRAMMATOPHYLLUM ELLISI, ONCIDIUM MACRANTHUM, O. KRAMERI, and O. FUSCATUM: PHALÆNOPSIS CORNUCERVI, DENDROBIUM DENSIFLORUM, D. SUPERBIENS, &c.; in all, about 200 lots.

On view morning of Sale, and Catalogues had.

Wednesday Next.
300 CAMELLIAS, AZALEAS, FICUS, and other PLANTS, from Belgium; a fine assortment of choice FERNS, PALMS, and other DECORATIVE PLANTS, from English Nurseries; a variety of English-grown LILIES and other ROOTS, HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 22, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Wednesday Next.
15,000 LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 22, at half-past 12 o'Clock precisely, an immense consignment of 15,000 Bulbs of LILIUM AURATUM, just received from Japan in fine condition.

On view morning of Sale, and Catalogues had.

Friday Next.
AERIDES SANDERIANA.
CATTLEYA GIGAS SANDERIANA.
LÆLIA PURPURATA.
PHALÆNOPSIS SANDERIANA.
4000 EUCHARIS BULBS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Messrs. Hugh Low & Co. to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 24, at half-past 12 o'Clock precisely, an immense quantity of very choice Imported ORCHIDS, comprising Aërides Sanderiana, described in *Gardeners' Chronicle*, October 11, as "a grand new Aërides and very important novelty;" Cattleya gigas Sanderiana, splendid masses; C. violacea, C. Gaskelliana, C. Leopoldi, C. Loddigesi, C. Schilleriana, Lælia harpophylla, L. purpurata, grand masses; L. xanthina, Oncidium varicosum (Rogersi varieties), Phalænopsis Sanderiana, Vanda Sanderiana, and many other fine Orchids. Also 4000 EUCHARIS BULBS from the Cauca.

Flowering Orchids.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of FLOWERING ORCHIDS will take place on TUESDAY, October 28, and they will be glad to receive notice of entries in the course of the ensuing week.

67 and 68, Cheapside, E.C.

Hendon, N.W.
Close to the Railway Station.
SALE of UNUSUALLY WELL GROWN STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr J. H. Pounce to SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., on WEDNESDAY, October 29, at 12 o'Clock precisely, a large quantity of unusually well grown STOVE and GREENHOUSE PLANTS, 500 specimen Ferns, 5000 smaller ditto; a quantity of Eucharis amazonica in large pots, 1000 Bouvardias of sorts, 4000 Carnations of the finest varieties, including the best new whites; 250 pot Roses in 32 and 48-pots; 2000 fine Standard and Dwarf Roses, comprising all the best sorts; a choice collection of Single and Double Dahlias, and other Stock.

May now be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Fifth and Final Great Clearance Sale, by order of Messrs. Ewing & Co., who have discontinued their business at Eaton, near Norwich, the Land having now been Sold. Highly important Sale of the Fifth Portion of the extensive, well-grown, and thriving young NURSERY STOCK, in excellent condition, comprising 10,000 Roses of the choicest exhibition kinds of Teas, Noisettes, and Hybrid Perpetuals, &c., in and out of pots. Many thousand Fruit Trees, Bushes, Raspberry Canes and Culinary Roots, Nut and Filbert Bushes, &c. 100,000 Ornamental and Forest Trees, many of them of suitable sizes to produce immediate effect—clean, stout, and well rooted, having been frequently transplanted and skilfully pruned. A large quantity of Deciduous Flowering Shrubs. 1000 Clematises, in choicest and newest variety; also some Evergreens and Conifers, and a large stock of Ivies and other Climbers, both in and out of pots.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich, on WEDNESDAY and THURSDAY, October 29 and 30, at 12 o'Clock precisely each day. Many of the Lots are large, and therefore specially adapted to the wants of extensive purchasers.

May now be viewed. Catalogues on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Tottenham.
Adjoining the Station.
SALE of remarkably well grown NURSERY STOCK, Dwarf ROSES, HERBACEOUS PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 4, at 12 o'Clock precisely, a large quantity of unusually well grown NURSERY STOCK, including 3000 Laurels, 1½ to 4 feet; 1000 bushy Aucuba japonica, 1 to 1½ foot; 3000 Standard Ornamental Trees, 5000 well-furnished Euonymus, good for potting; 1000 Tree Carnations, in all the leading varieties; 2000 Tree Carnation "Andalusia," the finest yellow tree variety; 1000 Pinks "Mrs. Sinkins;" 2000 Violets. 8000 Dwarf Roses, in first-class varieties; 3000 hardy Climbers, 40,000 Seakale and Asparagus, extra strong; 10,000 Christmas Roses (Helleborus), 1000 Anemone japonica, 50,000 double and single Narcissus, and large quantities of other HERBACEOUS PLANTS and BULBS.

May be viewed. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Sidcup.
By order of the Executrix of the late Mr. R. Sim.
CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, The Sidcup Hill Nursery, Foots Cray, on WEDNESDAY and THURSDAY, November 5 and 6, by order of Miss Sim, who is reducing the Stock, a further portion of the NURSERY STOCK, fuller particulars of which will appear next week.

N.B.—The NURSERY BUSINESS carried on for so many years by the late Mr. R. Sim is for SALE on very reduced terms. Messrs. P. & M. will be happy to furnish particulars on application.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 6750.)
Home-grown LILIES, BULBS from America, Holland, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 21, at half-past 12 o'Clock precisely, a variety of Home-grown LILIES, including fine roots of Lilium Wallacei, L. auratum, L. pardalinum, &c.; also EUCHARIS CANDIDA, AMARYLLIS, and other GREENHOUSE BULBS; a consignment of FREESIA REFRACTA ALBA, ERYTHRONIUM AMERICANUM, GLYCENES, and SMILAX, from America; a quantity of IMANTOPHYLLUM MINIATUM SPLENDENS, from the Cape; CARNATIONS, PINKS, DAISIES, and other BORDER PLANTS; also several hundred lots of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, Early Roman HYACINTHS for forcing, and other DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 6750.)
3000 LILIUM AURATUM, just received from Japan.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 21, 3000 splendid Bulbs of LILIUM AURATUM, just received from Japan in fine condition.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6752.)
TERRESTRIAL ORCHIDS, VRIESIA FENESTRALIS, TILLANDSIA TESSELLATA, &c.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT October, 23, fine clumps of CYPRIPEDIUM SPECTABILE, C. ACAULE, C. PUBESCENS, C. PARVIFLORUM, C. ARIETINUM, all suitable for cool-house culture; also 26 fine plants of VRIESIA FENESTRALIS, 6 strong plants of TILLANDSIA TESSELLATA, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6752.)
AERIDES SANDERIANA, in flower.
AERIDES ROHANEANA, in flower.
AERIDES LAWRENCIÆ, in flower.
A splendid new ONCIDIUM, in flower.
ODONTOGLOSSUM ALEXANDRÆ,
And very many valuable Brazilian and other ORCHIDS, in great quanity.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, October 23, at half-past 12 o Clock precisely, a grand specimen, in full bloom, of AERIDES SANDERIANA, and many imported plants of this grand species; AERIDES ROHANEANA, about a dozen plants, in full bloom, and fine imported plants; the superb AERIDES LAWRENCIÆ, in flower and in imported specimen; also a grand lot of CATTLEYA LABIATA WARNERI, CATTLEYA GIGAS SANDERIANA, &c.

On view morning of Sale, and Catalogues had.

Clapham House, Clapham Common, S.W.
Close to Nightingale Lane.

MESSRS. McLACHLAN AND SONS will include in their SALE by AUCTION, at the above residence, on TUESDAY, October 21, a choice COLLECTION of PLANTS, including Specimens of Aloe, Camellia, Azalea, Palm, Citron, Ficus, Cacti, Fuchsias, Geraniums, Begonia, Crysanthemum, Hydrangea, Echeveria, Calceolaria, &c.; also LAWN MOWERS, GARDEN SEATS, HOSE and GARDEN IMPLEMENTS.

On view day prior and morning of Sale, and Catalogues of the Auctioneers, The Pavement, Clapham Common, S.W.

Whittington Nursery, 2 miles from Lichfield,
SALE of a WELL-GROWN NURSERY STOCK, at the above widely known Nurseries, of several hundred thousands of Trees and Shrubs, consisting of Standard and Pyramid Apples, Pears, Plums, Nuts, and other Fruit Trees, an immense quantity of English Oaks, Ash, Elm, Spruce, Austrian and Laricio Pines, &c. A large variety of Deciduous and Evergreen Shrubs, together with many thousands of transplanted and well-rooted hybrids and other Rhododendrons, and a fine variety of Ivies, &c. In the Coniferæ will be found a very choice assortment of Cedrus, Cypress, Junipers, Pinus, Retinosporas, Thuias, Yews, &c.; a remarkably fine lot of Maréchal Niel, Gloire de Dijon and other Roses; together with an immense variety of Seedling and Bedding Plants.

MR. GEORGE MARSDEN will SELL the above by AUCTION, by order of Mr. Holmes, at Whittington Nurseries, on WEDNESDAY and THURSDAY, October 22 and 23, and following day if necessary, commencing at 10 o'Clock each day. Conveyances will meet all the early Trains up to 10 o'Clock each day, at the "Trent Valley" and "City" Stations, Lichfield. For the convenience of Purchasers, any lot or lots can remain on the ground until March 1, 1885.

Catalogues will be ready 14 days prior to the Sale, and can be had at the *Midland Counties Herald* Office, the place of Sale, and the Auctioneer, Wirksworth, Derby.

At Lydiate and Aughton, Lancashire.
By order of the Executors of the late Mr. Chas. Rylance,
To NURSERYMEN, PLANTERS, and OTHERS.
SALE by AUCTION of about 70,000 FRUIT and FOREST TREES, and PLANTS of nearly every kind.

MR. EDMUND C. STRETCH has been favoured with instructions to SELL by AUCTION, on WEDNESDAY, THURSDAY, and FRIDAY, October 22, 23, and 24, on the premises, Abbey View Nursery, Lydiate, and Springfield Nursery, Aughton, at 12 o'Clock, the whole of the NURSERY STOCK.

Detailed Catalogues from the Auctioneer, 15, Moor Street, Ormskirk; and from Messrs. RYLANCE, Bold Lane Nursery, Aughton.

Manchester.—On October 29.
IMPORTANT SALE of VALUABLE STOVE and GREENHOUSE PLANTS (except Orchids) being the choice collections (including many Exhibition Plants) at Gorse Hall, Staleybridge and Oakley, Fallowfield, the property of W. Leech, Esq., who is leaving the district.

MESSRS. ARTINGSTALL AND HIND respectfully notify that they are favoured with instructions to SELL by AUCTION, on WEDNESDAY, October 29, at Oakley, Fallowfield, the large COLLECTION of DESIRABLE PLANTS of both residences.

For Catalogues and further particulars, apply to the Auctioneers, 45, Princess Street, Manchester.

FOR SALE a NURSERY and SEED BUSINESS at the thriving Market Town of Denbigh (North Wales). Nurseries about 14 acres, with a good saleable stock of Forest, Fruit, and other Trees and Shrubs, Greenhouse, &c. Very favourably situated near to railway station. Land in good condition and on easy terms. Premises (leasehold, and rent low) for Seed Business situated in the centre of the town in the main street, to be disposed of on favourable terms to purchaser.

All particulars on application to Mr. HUGH ROBERTS, Crypt Chambers, Chester.

To Nurserymen, Landscape Gardeners and Others.

TO BE SOLD, by Private Contract, the BUSINESS of NURSERYMAN and LANDSCAPE GARDENER, carried on for nearly fifty years by the late Mr. Thomas Coudrey, and lately by his Son and Successor (who is declining the business on account, of ill-health), at the Edgbaston and St. James' Nurseries, Edgbaston, Birmingham.

Apply, for particulars, at No. 6, Ampton Road, Edgbaston.

TO BE LET, on Lease, with Immediate Possession, Range of GRAPE, CUCUMBER, and TOMATO HOUSES, in thorough working order, well heated, and good supply of water.

Apply, 53, High Street, Chelmsford.

TO LET, an Old-established MARKET GARDEN, of 30 acres, with a good Retail Seed and Florist Business; Greenhouses, Pits, Frames, Stock, Horses, Vans, &c., to be taken at valuation. The land is in the highest state of cultivation. A capital 7-roomed House, rent moderate. All within a few miles of four good market towns, where the produce has been taken for the last 30 years. A first-rate opportunity for an energetic man. For further particulars, apply to R. R., Messrs. Hurst & Son, 152, Houndsditch, London, E.

MORTGAGE.—Two sums of £5000 and one of £4000 and smaller SUMS to be LENT on MORTGAGE at Low Rates of Interest. The Security must be good. The Money could be lent for a term of years.

Apply, with full particulars, and stating the Rental now received from proposed Security, by letter, to Messrs. COOPER AND CO., Solicitors, 42, Bedford Row, W.C.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN that an ADDITION will be made to the LIST of PENSIONERS of this Institution in JANUARY NEXT.

All persons desirous of becoming Candidates are requested to send in their applications and testimonials to the Committee, on or before the 10th November next, after which day they will not be received.

Preference (in accordance with Rule No. 6) will be given to those applicants who have been Subscribers for Fifteen Years and upwards, or their Widows. Should there not be sufficient of this class of candidates to fill the Vacancies, then the applications of those who have not subscribed so long, or not at all, will be considered.

Printed Forms of Application may be obtained from the Secretary.—By order, E. ROGER CUTLER, Sec.

14, Tavistock Row, London, W.C.—October 9, 1884.

INTERNATIONAL INVENTIONS EXHIBITION, London, 1885.

DIVISION I., *INVENTIONS.* DIVISION II., *MUSIC.*

Patron—HER MAJESTY THE QUEEN.

President—H.R.H. THE PRINCE OF WALES, K.G.

APPLICATIONS to EXHIBIT must be made on Printed Forms, which will be supplied on application to the SECRETARY, International Inventions Exhibition, South Kensington, S.W. These must be filled up and returned on or before NOVEMBER 1, 1884.

SCHOOL of the ART of LANDSCAPE GARDENING and the IMPROVEMENT of ESTATES, CRYSTAL PALACE, S.E.

Principal—Mr. H. E. MILNER, A.M. Inst. C.E.

Lecture and Demonstration Rooms near the North Tower. Public Lectures, WEDNESDAYS at 4 P.M. Prospectus and full particulars on application to the SUPERINTENDENT of the School of Art, Science, and Literature, Crystal Palace.

Mr. MILNER has moved his Offices to the above address, where his professional work is now carried on.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

Hyacinths in Pots.

POTS made expressly for HYCINTHS can be supplied by J. MATTHEWS, The Royal Pottery, Weston-super-Mare. Price List free.

Rhubarb and Seakale Forcing.

STRONG well-made POTS for the above can be supplied by J. MATTHEWS, The Royal Pottery, Weston-super-Mare. Price List free.

COUNTRY BOARD—RESIDENCE.—A LADY of good family, residing alone on her own property, near Westmoreland, RECEIVES LADIES wanting a quiet friendly, refined Christian Home. Musical Instruments, good Gardening, Glass Houses, very near Church, Station, Post. Country beautiful, air mild, situation sheltered. Might suit those who feel alone in the world, and who love flowers, &c. Address, M., Mrs. Waller, 99, Highgate, Kendal.

FOR SALE, 6 CAMELLIAS, well furnished, and full of bud, in large pots, or in EXCHANGE for good DICKSONIA ANTARCTICA. Apply to E. ROGERS, The Gardens, Sulby Hall, Bawtry.

FOR SALE, 24 Specimen Pyramid Irish YEWS, from 6 to 12 feet high. A. WEBB, Kelham Hall Gardens, Newark-on-Trent.

TO THE TRADE.—30,000 Seedling OAKS, 1-yr.; 17,000 Seedling APPLES, 1-yr., strong, cheap for cash. ACORNS in November. THOS. BEAUCHAMP, Woodfalls, Downton, Wilts.

GENISTAS.—A large quantity for Sale, by the 100 or 1000, in 48-pots, at from 30s. to 40s. per 100. Messrs. BALDWIN AND SON, Edith Nursery, Burchall Road, Vicarage Road, Leyton.

The Grand New Narcissus Incomparabilis Giganteus, "SIR WATKIN."

3s. 6d. each, 36s. per dozen, 250s. per 100.

Should be in every collection. A "special" offer of other popular kinds on receipt of list of names and quantities required. JAS. DICKSON AND SONS, "Newton" Nurseries, Chester.

EIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12s. to 24s. per dozen, strong plants. Descriptive LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.

Chad Valley Nurseries, Edgbaston, Birmingham.

TO BE SOLD, a large quantity of very choice surplus HOTHOUSE PLANTS, PALMS, FERNS, &c., the accumulation of years, at the Greenhouses, Alexandra Park, N. Cards to view to be obtained from C. J. HAYTER, 1, Draper's Gardens, Throgmorton Avenue, London, E.C.

ROBERT AND GEORGE NEAL beg to inform Gentlemen, Builders, and all who may be intending to Plant Trees and Shrubs, &c., this autumn, that their stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS, is specially fine, and that the present time is the best to view and select the same, both as regards foliage and flower. A personal visit to the Nurseries earnestly solicited. The Nurseries, Wandsworth Common, S.W.

THE NEW RASPBERRY, **LORD BEACONSFIELD** (A SEEDLING).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883. Strong Canes, 15s. per dozen, £5 5s. per 100.

A. PAULKNOR, INKPEN, HUNGERFORD.

Cheshunt Roses.—Best Roses Only.

PAUL AND SON, The "Old" Nurseries, Cheshunt, N., the Winners of the Champion Cup, National Rose Society, solicit orders for—

STANDARD ROSES, from 18s. per dozen.

DWARF ROSES, from 9s. per dozen.

NEW ROSES, TEAS, extra sized Climbers and Forcing Roses, in pots, at proportionate prices.

Fifty-seven of the leading First Prizes at the Rose Shows. Thirteen Hundred First Prizes (including many Gold Medals) of Royal Horticultural Society in the past twenty-three years.

Descriptive and Illustrated CATALOGUES post-free on application.

PAUL AND SON, Champion Rose Growers for 1884, The "Old" Nurseries, Cheshunt, N.

Fruit Trees by the 100, 1000, 10,000, or 20,000.

HUGH LOW AND CO. invite inspection by intending purchasers of their very large and unusually fine stock of APRICOTS, CHERRIES, DAMSONS, NECTARINES, PEACHES, PEARS, and PLUMS, growing at their Nursery, near Enfield, about five minutes' walk from the Bush Hill Park Station of the Great Eastern Railway. Also ROSES, Standards and Dwarfs, POT ROSES, GRAPE VINES, in large quantities. 33 large Houses and numerous ranges of pits filled with choice stock, largely winter and spring flowering. Clapton Nursery, London, E.

Planting.

W. FROMOW AND SONS invite the attention of Gentlemen, Builders, Gardeners, and others, intending planting, to inspect their stock of RHODODENDRONS, TREES, SHRUBS, ROSES, CLIMBERS, &c., which cannot be surpassed. Prices will be found low for really good stuff, delivered free within 10 miles. Descriptive CATALOGUE of Plants, Bulbs, Seeds, &c., post-free on application. Sutton Court Nursery, Chiswick, London, W.

Branch Nurseries: Hounslow and Acton Green.

LILIUM AURATUM.—Home grown, magnificent bulbs. Cultural Commendations awarded by the Royal Horticultural Society, October 14, for specimen bulbs exhibited. Trade prices on application. Home grown, 1s. 6d., 2s., 2s. 6d., and 3s. 6d. each; Imported, 6s., 9s., 12s., 15s., and 18s. per dozen. A fine COLLECTION of LILIES and other BULBOUS PLANTS, see CATALOGUE, free. NARCISSUS, &c., for naturalising, cheap.

COLLINS BROS. AND GABRIEL, 39, Waterloo Road, London, S.E.

FOR SALE, a Bargain.—A Gentleman's Gardener wishes to dispose of a quantity of fine healthy plants, being overstocked with the same. Three dozen GARDENIAS, in 6-inch pots; 40 CINERARIAS, splendid plants; a quantity of BOUVARDIAS, SOLANUMS, LIBONIA FLORIBUNDA, winter flowering GERANIUMS, DAPHNE, &c.; and some dozens of STOVE HOUSE TABLE PLANTS, good specimens; also an enormous STEPHANOTIS plant, trained balloon shape, big enough to cover large conservatory. Will be sold cheap to make room. Apply to R. W., Mr. Moore, Stationer, Emsworth.

ROSES A SPECIALITY.

Every plant is well-grown, and my Standard, Half-Standard, and Dwarf Roses are the finest plants ever offered. A Descriptive CATALOGUE post-free, on application.

FRANK CANT,
THE MILE END NURSERIES, COLCHESTER.

The Winner of over **150 1st Prizes** for Roses. **"No connection with any other Person of the same Name."**

Come and See.

OUR CHRYSANTHEMUMS, and you will find that we have four houses, each 100 ft. long, specially erected—one for Incurved, one for Japanese, one for Single, one for Seedlings and miscellaneous kinds, all in the finest health and order. No collection in such a space, or such an opportunity was ever before given to all lovers of this plant for thorough examination. Our 2000 Seedlings, and the American varieties, are expected to give us new types and colours highly interesting. As to plants, our reserve stock out in the open border consists of quite 800 varieties, all flowered last year, will alone probably in quantity double that of any other grower that offers cuttings. Our stock in 4-inch pots, with blooms for immediate propagating (consisting of many thousands), occupies a quarter of an acre. Each variety is kept perfectly separate, so that any kind misplaced may be easily detected. This, together with our professional men, engaged exclusively amongst Chrysanthemums, enables us to warrant every plant true to name.

CANNELL AND SONS' ILLUSTRATED BOOK and CATALOGUE, on the whole family of Chrysanthemums, which is acknowledged by all the highest authorities to be the best standard work and guide on this flower ever published. It shows plainly and exactly how a single specimen bloom should be, and also a perfect specimen plant for the first prize, and how to grow, show, and dress them; in fact, it contains the most accurate descriptions, together with the synonyms, and an immense amount of the very best practical and reliable information, such as never before given to the public. Post-free, 4d.

JUDGES for CHRYSANTHEMUM SHOWS.

OUR LONG PRACTICAL EXPERIENCE, from the earliest Stoke Newington Show down to the present, brings us acquainted with nearly all the most experienced professional judges, whom we should be pleased to recommend to any Society on application.

Essay on the Anemone Chrysanthemum.

H. CANNELL AND SONS offer £2 for the Best and Briefest Treatise on How to Grow, Show, and Get the First Prize for the Anemone-flowered Chrysanthemum; and also £2 for the best ditto on the Pompon, Bush, and Pyramidal-grown specimen. For full and further particulars apply

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THE HOME FOR FLOWERS SWANLEY KENT.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, having a large and fine stock of the following Plants, can with confidence recommend them to purchasers:—

ERICA HYEMALIS, in 5¾-inch pots, 18s. per doz.; 7-inch pots, 36s. per doz.

ACACIA DRUMMONDI, in 5-inch pots, 18s. per doz.; 4-inch pots, 12s. per doz.

" ARMATA, in 5-inch pots, 18s. per doz.; 4-inch pots, 12s. per doz. [12s. per doz.

" HYBRIDA, in 5-inch pots, 18s. per doz.; 4-inch pots,

SOLANUM CAPSICASTRUM, well berried, in 5-inch pots, 12s. and 18s. per doz.

CHRYSANTHEMUMS, grand plants in the best varieties, in 10 and 12-inch pots, 36s. and 42s. per doz.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 18, 1884.

GLASNEVIN.

IT is by no means easy to do even scant descriptive justice to a botanical garden within the limits of a short article, especially to a garden which is so extensive and varied in area, and withal so rich in vegetation—temperate and tropical—as the one at Glasnevin undoubtedly is. To the Royal Dublin Society belongs the credit of having first founded the institution in 1794, and in which year Parliament directed that the sum of £1700 should be applied towards providing and maintaining a botanical garden. The site selected was classic ground, a demesne which had formerly belonged to Tickell the poet, and the house then standing in the grounds was historic, being that in which Addison and other literary celebrities of the day had met. Quite near is Delville, even yet a lovely old place overrun with Apennine Anemones, and once the residence of Dr. Delany, the friend of Dean Swift. Here Stella resided for some time. Both Steele and Parnell were also residents in the neighbourhood. The garden once founded, it appears to have prospered apace, since in 1798 and 1799 Parliament voted a sum of £1300 each year for its support. In 1800 £1500 was assigned for the support of the garden, and in payment of a Professor of Botany. Dr. Wade was the first Professor and Mr. John Underwood was appointed Curator on the recommendation of Mr. Curtis, the then conductor of the *Botanical Magazine*, Mr. John White being his principal assistant. The publications of Dr. Wade and of Mr. White on Irish botany were well known in their day, and Mr. Underwood's exertions placed the garden in a forward position so far as living specimens were concerned. In 1834 Mr. Niven succeeded Mr. Underwood as Curator, and in 1836 Dr. Litton succeeded Dr. Wade in the botanical chair. In 1838 the late Dr. David Moore was appointed Curator, and soon afterwards Dr. Harvey succeeded Dr. Litton as Professor of Botany, and the garden took up that position of eminence which it has ever since retained. The garden itself comprises about 40 acres of agreeably undulated ground beside the silvery Tolka river, and rests on the geological formation known as Calpe limestone.

Speaking of geology reminds us of the new rock garden, which, although not as yet a year in its present position, is richly stocked with alpine vegetation and Ferns, the luxuriance of which in Ireland never fails to strike the visitor from other shores. Here many of the rarest of wild flowers from the mountains of Europe are quite at home, and ample provision has also been made for bog plants in a peat-bed, easily flooded, which extends along one side of the rockery. Here Cypripedes and other moisture-loving Orchids are quite at home; one clump of C. spectabile in an ordinary bed which we saw here in June last bore no less than twenty-five fully expanded blossoms, and formed a sight no exotic of its kind could well rival. On the rockery itself, Dianthus and Gentian of

many kinds are quite at home, D. alpinus and its still finer ally, D. glacialis, being particularly luxuriant, as also are Ramondia pyrenaica and various species of Meconopsis, Papaver, and Cathcartias. Primroses of many kinds are here also quite at home, and in the spring months some forty or fifty species and hundreds of varieties may be seen in bloom. One feature noticeable in the rockery is the quiet and artistic manner in which the fringe of stones slides as it were into the turf—so naturally has this been effected in some instances, that one receives the impression that the native rock has cropped up through the turf in a natural way.

ORCHIDS AND PITCHER PLANTS are alike extensively grown; and of some genera the collections are very complete. Thus the Lady Slippers or Cypripediums are represented by over sixty species and varieties. Of Masdevallias, again, nearly eighty kinds are grown; the collection of Nepenthes is a rich one, and there are thirty kinds of Sarracenias, exclusive of a numerous and healthy batch of hybrid seedlings recently reared here by Mr. Moore. The culture of Disa grandiflora is quite a speciality, and we have but rarely seen it more healthy and floriferous than as here grown. As many as seven flowers have been produced on a single spike; Disa megaceras has also flowered here. Just now many Cypripedes are in bloom, none perhaps prettier than C. Curtisii, with its dark eye-like fringed petals. C. Argus, and C. Lawrencianum from Borneo, are also in flower, along with C. Dayanum, a plant named in honour of Mr. Day of Tottenham, long ago, but now rarely seen; Cymbidium giganteum, and many rare Masdevallias are also in bloom.

Among the Pitcher plants there are here many varieties. The Glasnevin variety of Nepenthes distillatoria [Khasyana?], raised from seed by thelate Dr. Moore, is just now in splendid vigour in one of the Orchid-houses, its climbing stems being laden with red-lipped and graceful wings 1 foot or so in length. As thus seen, in full health and beauty, there are but few other species which rival this in size, graceful form, and colouring. N. sanguinea, N. Veitchii, and the best of all hybrid Nepenthes, N. Mastersiana, are also represented in the best condition. Mr. F. W. Moore is also one of the very few who have succeeded well in the culture of the giant N. Rajah, from Kina Balu, where a drowned rat was found by Mr. Low in one of its pitchers, and where the finest of urns hold from two to four pints of water. The plant is grown at Glasnevin in an intermediate Orchid-house, mainly devoted to the culture of Odontoglots and Masdevallias. It is healthy, and bears several of its quaint pitchers, which, if much smaller than the native grown specimens in the Veitchian collection, are quite as highly coloured. It is a pity this grand species is not more easily grown, but its native climate is a most peculiar one. It is found at heights varying from 4500 feet (on the north side) to 9000 or 10,000 feet (on the southern spur) of Kina Balu Mountain in Northern Borneo. This mountain, "as the crow flies," is 25 miles from the coast, plains and low coast hills intervening between its rocky sides and the warm Chinese Sea. All day long the warm vapour rises from the ocean under a tropic sun, and is borne inland until at a height of 9000 to 10,000 feet, it strikes the cool sides of Kina Balu and is met by the cool currents of air which descend from its summit (13,700 feet altitude). Hence at this height is a zone of cloud, if seen from the coast, or a perpetual "Scotch mist" if you happen to be up among the Nepenthes a curious combination of tropical warmth and moist chilliness not at all easy to reproduce for cultural purposes in plant-houses at home! Yet, as we have said, the plant, although by no means large, is really healthy in an intermediate-house here at Glasnevin, and as we know Messrs. Veitch themselves are far more successful now in growing this plant than they were soon after its introduction.

Among the other rare exotics for which the Glasnevin garden has long been famous, we may allude to the Banksias and Dryandras, but few of which are now to be met with in European gardens. Here are fine plants of Banksia marginata, B. grandis, B. verticillata, B. speciosa, B. dryandroides, and B. marcescens, all in robust health and vigour; Hakea speciosa and H. Victoriæ are also remarkable, and there are enormous specimens of Brownia arrhiza and B. grandiceps, which attract many visitors when in flower. Mr. Moore has made a speciality of Bromeliads and Cycads, the collections of both being very extensive. A specimen of Luculia gratissima bears hundreds of its deliciously scented Hydrangea-like clusters of blossoms every winteri; n fact, turn wherever one will, or go wherever one may, there is in the plant-houses a never flagging succession of beautiful vegetation.

FLOWERING SHRUBS AND TREES are well represented, and Rhododendrons do well in peat beds, although the natural limestone formation is not suitable to them. Choisya ternata, or "Mexican Orange" bush, is hardy, and flowers quite freely, so also is Veronica Hulkeana, and the finest of all the "Snowball" trees, Viburnum macrocephalum. A specimen of Abelia triflora some 14 feet in height is lovely when in flower, and in one of the warm sheltered bays of the range of curvilinear plant-houses a noble specimen of Chamærops Khasiana bore several flowering spadices during the past year, and "shook out its living gold-dust against the clear blue sky." There is also a fine plant of C. Fortunei in vigorous health near the Curator's residence. Abutilon megapotamicum is hardy here and blooms every summer on the walls, as also does the peculiar helmet-flowered Calceolaria violacea, and such dwarf things as Smilax aspera and Hypericum empetrifolium. The winter blooming Clematis calycina is quite at home, and there is a tradition that a seed of Loranthus europæus was once successfully induced to germinate on an Oak tree near the reserve garden. A large bush of Rhus Cotinus flowers freely, its plumes resembling Marabout feathers, being of a dusky rose colour. Conifers and deciduous trees are well represented. There are some noble Willows by the Tolka river, and a plot of about 10 acres has recently been added to the garden as an arboretum.

THE GARDEN STRUCTURES at Glasnevin are of a most important kind, the Palm-house to wit. This building, of which we shall give an illustration in our next issue, has lately been erected of Teakwood and iron, by Messrs. James Boyd & Son, of Paisley, at a cost of between £4000 and £5000, and is a great improvement over the old Palm-house, which cost barely half the sum voted for its modern rival, but which nevertheless was highly serviceable in its day.

The dimensions of the Glasnevin Palm-house are—100 feet in length, 80 feet in width, and 65 feet in height; the upright sides are of Teak-wood, and the curved roofs are of wrought-iron, moulded. It is bound together by strong wrought-iron, starting from the concrete foundations and meeting at the ridge. The upper roof is supported on columns. About 25 feet above the floor-level there is a gallery, which runs round on the columns, and forms both vertical and horizontal tie-girdering as well. Outside there are galleries both at the eaves of the main roof and at the top of the same, also forming girdering to strengthen and stiffen the building. Altogether there are about 670 lineal feet of galleries. There are also four movable light iron ladders on the curved roofs, to facilitate painting and repairs. There is a 4 feet 6 inch slate shelf all round, under which there are ten rows of 4 inch pipes, also four rows round inside the line of the columns under the floor-level, heated by two of Boyd's 7 feet terminal end saddle boilers, having two flues running through them. The glass is $\frac{3}{16}$-inch thick, rough rolled, and the wood and ironwork are painted in and out with a patent metallic paint of a nice chocolate colour. There is a 3-inch pipe fixed round at the spring of the upper roof, to prevent condensation and cold draughts, and which is heated by an independent boiler. The Palm house was designed by Mr. Boyd, to meet Mr. Moore's requirements, and received the approval of the Government.

The curvilinear range (see fig. 91, D, p. 497) was built some thirty or forty years ago, at a cost of about £5000, from designs by F. Darley, Esq., the iron work being wrought by the late Mr. Turner, of Ball's Bridge, Dublin, who also erected the great Palm-house in the Royal Gardens, Kew. There is here also a small Economic Museum containing a good typical collection of vegetable products and textile material. This is on the left of the entrance gate, while on the right hand side are the Library and Herbarium, both of which have recently been remodelled and rearranged. The latter is especially rich in Irish plants, particularly in mosses and Jungermanniæ, of which the late Dr. Moore was a great collector and one of the best critical authorities in his day. Mr. Moore is just now adding quite an especial interest to the Herbarium by the addition of coloured drawings of the more remarkable plants, such as Orchids, Hellebores, &c., which bloom in the gardens throughout the year.

The great Water Lily of the Orinoco, or as some one once called it, "that most splendid of all annual aquatics," the regal Victoria, is here honoured with a special structure, and blooms every summer in all its beauty, surrounded by attendant water nymphs in the shape of rosy Lotus and Water Lilies—pink, blue, and white of many kinds. Here also in the smaller tanks all the smaller water weeds, such as Salvinia, Azolla, Pontederia, Trianæa, Trapa, &c., are grown.

Quite near to the Victoria-house is a tall octagonal structure (fig. 91, B), originally built for a large Araucaria, but now used as a suitable place for the taller-growing of Tree Ferns, of which some noble specimens may here be seen. Of the smaller growing Ferns and Selaginellas there are here very complete collections, but one of the special features of the Glasnevin garden is the cool house devoted to the growth of Todeas, Trichomanes, Hymenophylla, and other filmy Ferns. The plants of Todea superba, T. intermedia, T. Fraseri, and T. pellucida grown here are handsome specimens, and the various forms of the Killarney Fern (Trichomanes radicans) are well represented. Here may be seen examples from several habitats in Kerry, Waterford, and Limerick, and quite recently plants from an Irish county in which the Killarney Fern was scarcely expected to exist, viz., Donegal, have been added. T. Hartii, from Sierra Leone, and T. alabamense, from North America, have also recently been added. We know of no place where filmy Ferns are more healthy than as here seen, and although the filmy Fern-house is kept closed for necessary reasons, it can be seen on application to Mr. Pope, the energetic foreman. *F. W. Burbidge.*

(To be continued.)

New Garden Plants.

SCILLA BELLII, *Baker, n. sp.*

THIS is an interesting new Scilla allied to bifolia and amœna. It was discovered in an excursion made in the spring of this present year by Major Mark Bell, R.E., in the province of Laristan in Central Persia. He made a considerable collection of plants in this little known region, and forewarded them lately for identification to Mr. Thiselton Dyer. Besides this, not to go beyond the petaloid monocotyledons he gathered Tulipa montana, præcox, and Aucheriana, Fritillaria imperialis, Bellevallia ciliata, Ornithogalum narbonense, Ixiolirion montanum, Muscari comosum and racemosum, Allium tulipæfolium and oreophilum, Iris ensata, and a species of the Onocyclus section which is either paradoxa or near it. The new Scilla by its few superposed ovules and small broad bracts falls into the same group as amœna and bifolia, but the inflorescence is more like that of our wild English Hyacinth. The flowers are smaller and less brilliant in colour and the pedicels are much longer. It is a very interesting discovery, and I hope that now that attention is called to it some one will get it again, for as yet we have only a single incomplete dried specimen.

Bulb not seen. Produced leaves two or three, cotemporary with the flowers, oblong-lanceolate, 3—4 inches long, acute, erect, fleshy in texture, green and glabrous on both sides, minutely scabrous on the margin. Scape slender, terete, as long as the leaves. Flowers 10—12 in a short raceme, 2—3 uppermost minute, sterile; axis and pedicels bright coloured; bracts small, white, persistent, membranous, ovate obtuse; pedicels ½—½ inch long, flexuose, slender. Perianth campanulate, brownish-blue, ¼ inch long; segments oblong-spathulate, with a distinct simple midrib. Stamens as long as the perianth; filaments white, filiform; anthers small, oblong, blue, versatile. Ovary ovoid; ovules 3—4 in a cell, superposed, ascending; style filiform, ¼ inch long; stigma capitate. *J. G. Baker.*

* *Scilla Bellii*, Baker, n. sp.—Foliis synanthiis oblongo-lanceolatis acutis scapo æquilongis facie glabris margine scabris, scapo gracili 3—4 pollicari; floribus 8—12 in racemum laxum dispositis; bracteis minutis latis albis obtusis; pedicellis flore longioribus; perianthio campanulato obscure cæruleo; staminibus fere æquilongis, filamentis filiformibus, antheris parvis oblongis; ovario ovoideo, ovulis in loculis paucis superpositis.

Dendrobium longicornu (*Lindl.*) and D. flexuosum (*Griff.*)

It is high time to break silence over those apparently well distinct plants, first discerned by the late lynx-eyed Dr. W. Griffith, who described and sketched a Dendrobium hirsutum (*Notulæ*, iii., 318, and tab. 305) and a D. flexuosum (*Not.* iii., 317). Dr. Lindley united the two in his excellent contributions to the orchidology of India (*Journ. Proc. Linn. Soc. of London*, August, 1858).

My opinion is that the two may be very well discerned. The Lindleyan type is no doubt the Dendrobium hirsutum, W. Griff. One may understand it from *Bot. Reg.*, xvi., pl. 1315. The large flowers show some indications of asperities and hairlike processes on the lip. The description says :—"Labellum . . . disco papilloso glanduloso" (1830).

The veins of the lip are broken up in part into numerous warts and hair-like processes. The flowers and the whole plant are much larger, and the midlobe of the lip is broader and blunter.

The Dendrobium flexuosum, Griff., is the plant we are accustomed to see in European gardens, usually at intervals of two to four years. It is a much smaller thing, far more flexuose in the stem, with narrower leaves, all veins of the lip quite even, midlobe narrower and more acute; flower much smaller. Numerous wild-grown specimens are at hand from Wallich, Griffith (with authentic name, kindly presented by late Dr. Lindley), Hooker and Thomson, and Mann.

The older and genuine Dendrobium longicornu is the plant collected in "Rabang Garden" by Dr. (now Sir) J. Hooker, August 13, 1850.

Splendid materials of the genuine Dendrobium longicornu were kindly forwarded me by Mr. E. Harvey, 12, Riverdale Road, Aigburth, Liverpool. Our correspondence arose from Mr. E. Harvey having excited my curiosity in August, 1883, by sending me a flower of Dendrobium longicornu, Lindl., without any keels outside the lateral sepals. This was not seen any more, but Mr. E. Harvey very liberally provided me with numerous flowers and even living plants. *H. G. Rchb. f.* [Mr. Harvey informs us that the specimen was sent from the neighbourhood of Bhamo, in Upper Burmah, to the Liverpool Horticultural Company (John Cowan). Ed.]

Cypripedium Sedeni candidulum, *nov. hyb. var.*

This is a C. Sedenian cross between C. longifolium and C. Schlimii album. It was the desire of Messrs. Veitch & Sons to have a Schlimii album flower on a plant as strong as Cypripedium Sedeni, and they succeeded very well. The sepals and petals are white, with a rose hue on the edge, and the lip is of fine warm purple. The petals are narrower than they generally are in C. Schlimii. It is a very fine addition to the stock of the best Cypripedium mules. *H. G. Rchb. f.*



Fig. 88.—Embothrium coccineum.

EMBOTHRIUM COCCINEUM.

Very few of the great Australian family of Proteaceæ are hardy in this country, but among them are some of the Grevilleas, and the species we now figure from the south-west districts of South America (fig. 88), may be added to the list, not, however, without qualification. In most countries it would require protection, but in south-western Ireland, as we learn from Mr. Gumbleton, to whom we are indebted for the specimen, this evergreen plant is hardy and its richly coloured deep red crimson flowers render it extremely attractive. As it ranges over a wide range of country and ascends to a considerable elevation, it is probable, as was pointed out by Mr. Hemsley, that we have not got the hardiest varieties that are obtainable, to which in all probability we should not have to apply the epithet "half-hardy."

PERENNIAL ASTERS.

It has often been remarked that names are at present of very little use for the Asters in cultivation in English gardens. When a note is written in praise of this or that Aster as an ornamental garden plant, it is more than probable that the same flower has at least a dozen synonyms, and that each of these synonyms has an equal number of claimants for the name. This is confusing enough, but no one is to blame for it. It is expected that if plants are offered for sale they shall be offered under some name, and it is an undoubted fact that a large proportion of the Asters in our gardens, including some of the best, never had any authorised name at all. They are, in fact, either hybrids or developments of cultivation, and at any rate have changed their characters so much that they cannot be identified with any wild form. To be convinced of this, let any one look over the collection of Asters in the herbarium at Kew, and contrast these with a good garden collection, and he will form the

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conclusion that Asters are rapidly becoming florists' flowers, and that many of these agree no more with wild types than the Chrysanthemums and Carnations of our flower shows do. It is true that there are some very ornamental kinds which preserve pretty well heir natural characters, and amongst these may be mentioned the European Aster amellus, and the North American Aster, Novæ-Angliæ, both of them excellent in their way; but these species vary in gardens both in height and size, and the colour of their flowers, as well as in the time of flowering, and some forms are far superior to others. But whatever we may think about their names it cannot be denied that Asters are very desirable plants in the autumn garden, and that it is worth while to pay attention to their improvement. Many of them are good in form and habit but poor in colour, yet there is probably no reason why, with judicious crossing and selection, Asters should not be got of the brightest shades of blue and pink, and of the purest white. They form hybrids readily, and though some of the best, as A. amellus, are shy about ripening seed, nearly all will do so in the south-east of England in favourable seasons like this.

But there are many gardens in which Asters are grown year after year, without any attempt being made to use the best available material. The weedy rubbish often to be seen in nursery gardens is enough to set amateurs against the whole class of such plants, and it must be owned that if neither names are to be trusted nor a good collection to be seen within reach, the would-be cultivator finds himself in perplexity; and this is a class of flower which must be seen to be properly appreciated: a handful of gathered flowers gives no idea of the effect of a well-grown plant, with the bloom advantageously displayed by wide spreading and waving branches.

Some of the most elegant of garden ornaments, as A. cordifolius and A. undulatus (of A. Gray), have individual flowers quite small and shabby. Much also depends upon the way in which Asters are grown. If left to themselves, and not divided, and transplanted, many of them soon deteriorate; positions suitable to each must be chosen, as some like shade and moisture, and others full exposure to sun. It must be remembered that their native country spreads over extensive latitudes; some must have the warmest position in the garden if they are to flower at all, and even with this advantage such late flowers as A. grandiflorus seldom resists the frost.

It is difficult without experience of each kind to know to what height it will grow; to expect that because an Aster is called lævis, or Novæ-Angliæ, or versicolor, that it will follow the normal habit of these species is a great mistake. I have forms of Novæ-Angliæ which refuse to flower till they have reached a height of 7 feet, and others of the same species hardly exceed 4 feet. The same may be said of the time of coming into flower, which may extend in varieties of one species from the beginning of August to the end of October.

I write as one who has paid much attention to the cultivation of Asters, though I have given up all hope of making all my garden forms fit botanical names. The best plan for those who wish to grow Asters in the most ornamental way is to collect all the good Asters they can find, and to test them in some trial bed for a season, and then arrange them accordingly. No plants bear moving about better at any time between October and the end of April. *C. Wolley Dod.*

A GOSSIP ON GARDENS.

The autumn session of the Richmond Athenæum was opened at the College Hall on Monday last, when Sir Trevor Lawrence, M.P., delivered the opening address, his subject being, "A Gossip on Gardens and Gardening," and from which we extract the following portions, from the *Richmond and Twickenham Times*.

One of the first things which foreigners say when they came to this country is, not that there are gardens in England, but that the whole of England is a garden; and really they must feel that that was hardly an exaggeration when they compared the country as they saw it in England with other countries on the Continent. He did not suppose there ever was a people who had so keen a love of gardening as the English. Wherever they went in the world they found English and Scotch gardeners doing good work. Now, taste was a very delicate subject to touch upon; but at the same time, as one who was a lover of gardens, he felt bound to protest against the fashion for ribbon and carpet bedding which had displaced much that was lovely in our gardens. Let those who had a fancy for these things look at an old-fashioned garden, and if they did not say that the latter was infinitely the more beautiful he should be very much surprised. He thought there was to some extent now a reaction against that absurdity. If they looked at one of the ribbon or carpet beds in Hyde Park they would see that an elaborate process of trimming and pinching and poking was going on continually, and nothing had the opportunity of growing as Nature would incline it to do. Anything more unnatural it would be impossible to produce. He thought they were perhaps hardly aware, when they walked round their gardens, what an immense debt of gratitude they owed to people who had brought most beautiful productions to decorate their gardens from almost every quarter of the globe. They got so accustomed to what they called common flowers—such as, for instance, the Pelargonium, which came from the Cape of Good Hope; the Heliotrope, a Peruvian plant; and the Dahlia, from Mexico — that they forgot how many of them had been gathered together with great labour from every part of the world. That led him to think of that which had to do, not with taste, but with fashion in gardens. His experience was that if they wanted to ruin anything completely, they should get fashion and fashionable people to take it up. Just now the beautiful but rather stiff and comparatively formal double Dahlias were out of fashion, and were very seldom seen. We had instead got single Dahlias. The other day he was talking to a nurseryman—one of course who had an eye to the main chance—and he told him that single Dahlias had passed their day. He explained that by saying that they had been very fashionable, but now they were going out of fashion, and soon we should see them no more. He then went on to say it was known to almost everybody that nearly all the double flowers that we saw were the results of hybridising. It was impossible to exaggerate the great debt we owed to gardening skill in that matter. Take such a common thing as the ordinary garden Pelargonium. The petals of the one he had in his coat would have fallen long ago if it had been a single Pelargonium, and they all knew the care taken by people at Covent Garden to gum in the petals of the single Pelargonium, so that, in addition to the double variety, they got that permanence in the flower which they did not get in the single variety. There were ten or a dozen natural species of Dahlia, but almost all our double Dahlias came from one species. With regard to the exploits of gardeners, he did not think anything had been more gratifying as an instance of skill in introducing a plant which was an inhabitant of one country into another, than the services rendered by Kew Gardens in introducing quinine-bearing plants into India. Three of the great staples which produced the food of mankind—the Potato, the Vine, and the Coffee plant—were attacked by very serious diseases. Any one who would devote intelligent attention, such as M. Pasteur had devoted to the diseases of animals, to the diseases of plants, would perhaps make a discovery which would benefit the whole human race.

Sir Trevor said that his own particular hobby was the cultivation of Orchids, which were, he thought, on the whole, the most interesting of the great botanical families. It was impossible to make any reference to Orchids without having one's mind brought to the writings of Mr. Darwin, who described with extraordinary lucidity some of the many contrivances by which Orchids were fertilised. Of late years the taste for these plants had wonderfully developed. He knew one importer who employed a staff of fourteen collectors in different parts of the world. They were nearly all Germans, as he found them more easily satisfied and more sober than Englishmen. He paid them from £75 to £150 a year and all expenses. He paid all outgoings while they were away, and their pay accumulated in their absence. Each one cost him in wages and expenses about £1200 a year. Then he had at his establishment 2 acres of glass devoted entirely to Orchids, and employed fifty persons, whose wages amounted to about £80 a week, so that he must be spending about £19,000 a year on collectors and wages only, not allowing anything for coals, rates and taxes, interest on capital, and other charges.

As to the value of Orchids, he had known £250 to be given for a single plant. That was for an imported plant which, perhaps, had not cost the importer more than 5*s*., but it turned out to be of rare and extreme beauty. He could understand a large sum being given for a hybrid Orchid, which, perhaps, could only be obtained of the person who had produced it, but the case was different with imported plants, for one which was imported to-day could be imported again to-morrow, so that a plant which fetched £100 to-day might not be worth a hundred pence to-morrow. Sir Trevor then gave, with the assistance of some diagrams, a very interesting account of the fertilisation of Orchids.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

May I ask you kindly to announce, in reply to numerous inquiries, that the collection for this year in aid of the Pension Augmentation Fund will close on November 30 next? The committee are determined, if possible, to raise the amount of the pensions, but they do not consider it safe (and this has been frequently stated) to make this large increase of expenditure (over £400 a year) until the reserve fund has reached £20,000, thus placing it beyond doubt that the annuities can always be met. I am very fearful that many of your readers are not aware that a nameless but generous gentleman has promised (and he spoke to me on the subject a few days ago) to give the sum of £500, provided the amount of £1750 be secured by December 31 next, thus making the £20,000, which, invested in 3 per cent. Consols, would bring in an income of £600 per annum. By the strenuous exertions of the committee we are within a reasonable distance of attaining the desired object, but it now depends upon the gardeners themselves whether we do so or not.

To complete the sum of £20,000 we require about £420, but I regret to say that, so far as I can at present see, there is little chance of it being obtained. It is a curious fact that many gardeners and others who have been persistent in urging the increase of the pensions, and stating what they would do in the event of it taking place, will not in the slightest degree assist the committee.

I am sure you will agree with me that it will be a lasting disgrace upon the liberality of the gardening profession if throughout the length and breadth of old England, where over 20,000 gardeners are employed, the paltry sum of £420 cannot be raised.

True (as a rule) gardeners do not receive large wages. If they did there would hardly be a necessity for this Institution. But there are many gardeners holding good positions (and who take many prizes) to whom a trifle, say 10*s*. or 20*s*., could not and would not be an object; and if these would only combine together in one common cause (viz., to assist their distressed brethren), and sink their petty objections to this rule and that rule, the object of the committee would be easily attained and they would have the satisfaction of knowing that they had contributed to assist in their old age many who from various circumstances had been unable to provide for themselves.

Why [so many of] the gardeners withhold support to the Institution I, after an experience of forty-two years, am at a loss to understand. They are, as a rule known to be charitable, and a good and intelligent class of men, but somehow they fail to see the benefits of and to support the Institution.

How often has it been my unpleasant position to see a man who has lived all his time and served with fidelity and truthfulness a family—that family dies out, the estate passes into the hands of a stranger who knows little, and cares less, for the old servant. He is discharged without a provision, and probably with little savings, and he has to apply to this Institution for assistance.

If he has been a subscriber for fifteen years and upwards (which, I am sorry to say, is not a common occurrence), and he complies with the rules, he is, at the first opportunity, placed upon the list of pensioners without the slightest trouble or election, and in one year he receives back nearly all that he has paid to the Institution. As an example I would state that one pensioner who had subscribed eighteen years was placed on the list in 1860; he has received the sum of £384, and he is still living. Surely this is placing money out to very good interest.

If he has not so subscribed he has to stand the chance of an election, and that may, and it usually

does, extend over many years; and we all know the old proverb that "Hope deferred maketh the heart sick."

Under these circumstances I venture to appeal to the good feeling which should, and I believe does, exist throughout the gardening community. It now remains with the gardeners, and gardeners alone, to determine if the pensions shall be raised during the ensuing year. Gentlemen employers of labour and others interested in horticulture have done their part, and, as I said before, it depends upon gardeners if the comforts of their poor professional brethren in their old age and days of distress are to be increased.

One word in conclusion, and of this I am sure, that if the gardeners, as a body, will only show their willingness to assist the Institution there are many gentlemen who will come forward with their money and influence; and one thing is certain, that any gardener who may lend us a hand, no matter how small (for a man can only give in proportion to his means), will never regret his generosity and will sleep none the worse for having assisted to the best of his endeavours in this work of charity. *E. R. Cutler, Sec.*

NEWNHAM PADDOX.

This, the Leicestershire seat of the Earl of Denbigh, is situated some 6 or 7 miles from the town of Rugby in a north-westerly direction, and 1 mile from the picturesque village of Monks Kirby, which is remarkable for the neat, cleanly appearance of its roomy, old-fashioned thatched cottages, the wooden gables of which lead the imagination back to times when the incessant whirl and din of the busy railway scene we had just left were unknown and unthought of, and when perchance, despite our habit of seeing things alone as they are in this age of steam and tamed lightning, there was as much in the world worth living for as now. At all events, if the spirits of the departed from whom the place takes its name, and who rest 'neath the shade of the old village church, compare times past with the present, they will not fail to see that the gain is not all with those who have come after them.

Newnham Paddox has been long in the possession of the present family, being acquired by them through the marriage of Sir William Fielding, grandson of Jeffery, Count of Hapsburg, with Joan Prudhomme, grand-daughter and heiress of Robert de Newnham, in the fourteenth century. The present Earl, Rudolph William Basil Fielding, eighth Earl, and a Count of the Holy Roman Empire, succeeded his father in 1865.

On from the village already named the road leads to the entrance of the park, passing through the gates of which there is a long stretch of carriage-drive, with a noble avenue composed of Oaks and Elms, fine old trees, with tall clean massive trunks, still healthy and vigorous; the drive then diverges to the right in the direction of the mansion, at some distance from which there has been an alteration in the course it once followed, made necessary by the erection of a gateway quite recently placed at about 150 yards from the building. These gates, which I was told were brought from another of the Earl's estates, are of unusual size, and are of wrought iron worked in a most elaborate style.

They are extremely beautiful, and are embellished with the coat of arms of the family. They have lately been restored by Messrs. Barnard, Bishop & Barnard, of Norwich, and in their present position are very ornamental. As those acquainted with this part of the country know, the surface for a considerable distance is comparatively level, but the park, which is about 200 acres in extent, as well as the adjacent land, is pleasingly undulated. The other entrance to the park is eastward of the one already named, and leads from Lutterworth. The road leading from the gates to the entrance-front facing southwards is planted on each side with a row of Araucarias, backed by a second row of Cedars, the trees composing both of which have attained a handsome size. Right and left of these is a good extent of lawn, dotted over, but not too much so, with trees, consisting of Elms, Oaks, Thorns, Acacias, and Conifers of various kinds; a few, including Cedars of Lebanon and Weymouth Pines, that are old and in a state of decay, have been clothed with Ivy, in which way they become effective objects. The higher ground to the westward of the mansion is well clothed with trees, which afford shelter from the winds coming from that direction. The mansion, which is large and handsome, is built of red brick, with light-coloured stone dressings, has been in a great measure rebuilt from designs by the late Mr. Wyatt, who also designed the handsome new church adjoining; completed in 1880, after being in hand three years. The church was opened when Viscount Fielding, the eldest son, came of age, to commemorate which a tree (Abies magnifica) was planted near. On the south-eastern front of the mansion there is a raised terrace, at the bottom of which is a large flower garden in the angular formal style, there being in the centre a fountain; the garden is well filled with suitable plants, and has a good many shrubs of pyramidal shape standing amongst the beds which do much to relieve the sameness of the straight lines, and of narrow gravel paths between the beds and grass verges. On the closely mown lawn to the southern side of this garden, amongst a number of specimen trees, there is a good example of Catalpa which flowers freely. A sunk fence separates this part of the grounds from the park. Looking north-easterly from the terrace the grounds are charming, forming as they do a valley, through which runs a small stream that has been turned to account so as to form two large pieces of water at different levels. The ground between the one nearest the lake and the mansion is occupied by large and irregular clumps of Rhododendrons—dense masses, out of which spring at intervals small deciduous trees and erect growing evergreens, such as golden and Irish Yews, Libocedrus decurrens, with here and there a plant of Acer Negundo variegatum, which here in such positions is seen to advantage. A winding walk leads from the terrace through the grounds just described.

Following the eastern side of the lower pond we come to a pretty thatched Ivy-clad tea-house, a cool shady retreat in hot weather. The planting in this direction has been well done, and along with the ordinary evergreen and deciduous shrubs, such things as Foxgloves, the giant Cow Parsnip (Heracleum giganteum), Spiræas, climbing Roses, &c., are freely introduced. Still following this walk a small clump of fine old Scotch Firs, with tall straight stems and broad spreading heads, is found. Passing round the higher end of this piece of water, which is divided from the second pond to the north-east, we come to a large gnarled, very old Yew still full of vigour. The walk returns on the western side towards the mansion, and is bounded by a considerable space of turf planted with a good selection of evergreen and deciduous trees, at distances far enough apart to admit of their growing to their full size. On the higher ground, beyond these young trees, are some splendid specimens of Beeches with immense spreading heads and massive trunks, which shows unmistakably that they at least escaped the infliction of over-crowding in their early growth. Advantage has been taken of the stream which feeds these ponds to secure that great boon in a garden—a plentiful supply of water.

From this part of the grounds a broad gravel walk leads to the south-west side of the house; here we find more fine Beech, Horse Chestnuts, and Oaks; there is a good space of grass in this direction, interspersed with trees, which divides the grounds surrounding the mansion from the walled garden and houses. On each side of the walk leading to these there is a row of standard Cherries, large trees, this year not carrying much fruit. The kitchen garden is a good-sized old-fashioned one, in form nearly a square, with substantial walls all round, planted with fruit trees of the usual kinds, but which this season are not bearing much fruit. The walks are broad, and have well kept edgings of Box. A row of select kinds of Apples and Pears are grown on each side of the walks at a distance sufficient to admit of a moderately wide border of herbaceous plants, a good assortment of which are grown and do very well.

The first of a range of lean-to houses is a narrow structure, with Brown Turkey Figs covering the back wall. Adjoining this is a vinery, which is forced for the second crop; it is planted with Muscat of Alexandria, Bowood Muscat, and Black Hamburgh Vines. The next house is occupied by some old Black Hamburgh Vines, between which Muscat of Alexandria are planted to take their places, which are making satisfactory progress.

We now come to a house planted with young Vines two years ago, that are to be forced to come in the earliest; they have made good canes for the time they have been in. This leads to another vinery, mostly of the Hamburgh variety, bearing a nice crop. In this house there was a long row of Cypripedium insigne, in excellent condition, already beginning to push up their flowers. Leading from this vinery there is a narrow Peach case, with the trees covering the back wall; the kinds are Royal George and Noblesse, very good trees, that had borne a good crop this season.

At a short distance away there is another Peach-house containing the varieties Rivers' Early, Early York, Royal George, and Late Admirable and Elruge Nectarines, carrying a very good crop. Not far from the wall against which the foregoing houses are placed are two hip-roofed vineries, both carrying a heavy crop; one is all of Black Hamburghs, the second of late kinds, Black Alicante and Lady Downe's. Of a range of pits in front of these vineries one is filled with Gardenias, planted out and growing freely, as they usually do where so treated; another has succession Melons. Near these is another range, in which are more Melons and some Cucumbers. Other pits and frames are occupied by various plants for winter flowering, that promise to afford a good supply at this season. Out-of-doors were a number of Azaleas, healthy plants used for forcing. Chrysanthemums are grown in quantity, and well done, as also Eupatoriums, which are favourites here.

On the opposite side of this garden, on the north-east side of the wall, is a hip-roofed plant stove, occupied by the usual flowering and fine-leaved subjects, all in nice condition. Attached to this house is a small fernery, arranged in a natural way, with most of the occupants planted out, intermixed with fine-leaved Begonias that so employed never fail to look well. Overhead on the roof are grown Bougainvilleas glabra and spectabilis. On the opposite side of the wall to this Fern-house and the stove facing south-west is a conservatory, against the back wall of which are grown a number of climbers, including the Tacsonias, Plumbago capensis, Jasminums, &c. The body of the house is filled with Tree Ferns, Palms, Camellias, some planted out and others in pots. A stage running the entire length adjoining the front is occupied with various greenhouse flowering plants which give the house a bright appearance.

Right and left of the walk leading from this conservatory are two grand specimen plants of the Japanese Cedar (Cryptomeria elegans), which are amongst the most perfect examples of this fine tree I have met with. Southwards from this there is a considerable open space in grass which has been planted with a variety of coniferous and deciduous trees, which promise to be a success; position and the requisite shelter favour them, and the situation being elevated and the soil of a nature to suit them, there is little doubt but that they will grow in time into beautiful specimens. This is a department which Mr. Brenchley, the gardener here, takes especial interest in, and which shows by the judicious positions chosen for particular kinds, that he can judge what will be the ultimate effect produced. Large beds of Laurel kept low by annual cutting-in, give the charm of variety to the grounds in this part. We now come to the Rose garden which is planted with standards, amongst which dwarfs have been introduced.

To the north-west of the walled garden there is a good sized house used for the double purpose of propagating the numbers of plants required for greenhouse and stove decoration, bedding stock, &c., and also for growing on table plants, and such things as afford flowers in winter, amongst which were a well-grown lot of Calanthe Veitchii and C. vestita, Eucharis amazonica, with Dracænas, Crotons, Caladiums, and Acalyphya tricolor, which is here much used, its bright red leaves rendering it very effective when associated with Ferns or other green-leaved subjects. Near this is an orchard with the trees in a good bearing condition; the crop here this season is better than in some parts of the country. At a short distance to the north of the enclosed gardens there is a large space devoted to the cultivation of culinary vegetables which are collectively well managed, the position being open, and free from the shade of trees or buildings. Mr. Brenchley, who has had charge of the gardens here for eleven years, is heart and soul in his work; and as rarely fails when such is the case, each department bears evidence of the care and attention bestowed on it. The extensive alterations in the grounds, which the rebuilding of the mansion has necessitated, have also been carried out by him, and he may be congratulated upon the way the work has been executed. *T. B.*

The Arboretum.

Araucaria imbricata.—I enclose you a photograph of an Araucaria imbricata which is growing on the lawn here. I cannot learn the exact time it was planted, but in 1845 it was not 3 feet high, and it is now 42 feet high, with a girth of 5 feet 11 inches at 3 feet from the ground. I think it a perfect specimen, as the branches lying on the ground are as green as those at the top. I cannot learn that it has ever borne cones. There is another tree here, of the same age; it has lost all its lower branches, yet it bears cones every year, but which never mature. Is it a general thing for trees bearing cones not to be so healthy as those that do not? [The cones do not mature because there are no male catkins in the neighbourhood. Ed.] I should be glad to know if there are many trees as fine as the one of which I send the photograph. I have heard many persons say that they have not seen one so fine. *George Busby, Thorn Hill Park, Bitterne.*

Flowering Shrubs.—Messrs. Veitch send us from their Coombe Wood nurseries a boxful of specimens of interesting flowering shrubs. Among them we find :—

Caryopteris mastacanthus.—A very beautiful Verbenaceous shrub, with hoary leaves and clusters of lilac-blue flowers, with projecting stamens.

Buddleya Lindleyana.—A very different plant from the old B. globosa, this one having dark green glabrous ovate lanceolate leaves and long spikes of narrow tubular flowers. Our plant was killed in the severe winters at the beginning of the present decade.

Arbutus Croomii is a variety of the common A. Unedo with dark red hairy branches, obovate, serrate leaves and terminal panicles of vase-shaped flowers of a rich pink colour on the sunny side, the narrow margin of the corolla being greenish and reflexed.

Arbutus microphylla is probably a variety of Unedo, with pinkish, glabrous branches, and narrow oblong lanceolate leaves. The small urn-shaped flowers are whitish, produced in profusion on the ends of the branches.

Arbutus canariensis.—In this the young wood is green and glabrous, the thick dark green shortly stalked leaves are broadly lanceolate, tapering at both ends. The flowers are elongate, vase-shaped, rich rose-pink in colour, and arranged in drooping panicles. This form is particularly beautiful.

Cneorum tricoccum.—A very old-fashioned but little known shrub, which attracts every one's attention, but which few seem to grow. The stiff ascending sessile narrow deep green leaves, an inch or two long, are of themselves attractive. The small yellow flowers are not remarkable, but they are followed by a dark red globular berry divided into three rounded lobes about the size of a Sloe, which is very singular in appearance.

Berberis Fortunei.—A robust evergreen with pinnate leaves, the leaflets of which are narrow oblong lanceolate and spiny at the margins. The small yellow flowers are produced in great abundance in numerous racemes clustered at the ends of the branches.

Japanese Coniferæ.—There is an impression gaining ground among cultivators that not a few of the Japanese Coniferæ are somewhat disappointing. Take the Retinosporas, for instance; they are all that can be desired when young and small; but as soon as they get into anything like size they turn rusty round the main stem, and this spreads outwards along the branches until they take on a half-decayed appearance, and their ornamental beauty is lost. There are some specimens of Retinospora plumosa at Chiswick 3 to 4 feet high, that are in a sadly disfigured state, and will have to be removed. It is the plumosa type that are the greatest offenders in this way. R. pisifera is very free, hardy, and handsome, but though it becomes touched with rust in the centre it is not nearly so apparent as in the case of R. plumosa. Compare these seedy looking Retinosporas as one sees them at Chiswick with Thuia elegantissima, with its dense foliage and not a mark of rust, or with what is even more attractive, Young's variety of Juniperus chinensis aurea. This last, though attractive at Chiswick, is not to be compared with the rich golden sheen it takes on at the Milford Nurseries, where a large breadth of it is a conspicuous feature. It would appear that the varieties of R. plumosa can be but of little value after they become a certain age. Those who employ them for outdoor garden decoration in winter will probably keep them in pretty good form by reason of the bi-yearly transplantation they undergo. Those who grow them into a large size must, we fear, content themselves with seeing them take on the rusty condition above referred to. *D.* [The next season's growth conceals this, or where it does not adds greatly to the beauty by the contrast between the silver and the brown. Ed.]

PARROTTIA PERSICA.

Now that the leaves are assuming their glorious hues of gold and brown, we may be excused for again calling attention to this still little known shrub. It is perfectly hardy, and the colour of its foliage in autumn is rich beyond comparison, shades of crimson and orange deepening off into ruddy-brown along the margins and tips of the leaves, often leaving the centre green. The form of the leaves is not unlike that of those of the common Hazel. The flowers are rarely produced—at least we have only seen them once, when they were shown at the Royal Horticultural Society during last spring by Messrs. W. Paul & Son, Waltham Cross, who kindly afforded us an opportunity of sketching the flowers (fig. 89). They are of botanical interest chiefly, as the chief value of the plant for garden purposes resides in the leaf.



Fig. 89.—Flowers of Parrottia persica.

Florists' Flowers.

The Chrysanthemum.—The plants are usually taken into the houses where they are to bloom from the first to the fourth day in this month; but, tempted by the exceptionally fine weather, they were left out until the rapidly falling barometer signified a change. It came, with wind, rain, and a very much lower temperature. We got them in before they received any damage. The buds, of course, were all well set, and most of the plants that required sticks placed to them had this done before they were taken in. Another thing must not be forgotten; they are sure to suffer much from the attacks of mildew, but if the leaves are well dusted with flowers of sulphur at the time they are taken into the house this pest will not do much mischief. They ought not to be too closely placed together, else the flowers will not be first-rate. They should also be placed close to the glass, if possible, especially when it is intended to exhibit the flowers in a cut state. Their beauties are developed much better when they can get the maximum of light and air that it is possible to give them. The large and loose flowers come up to the standard of excellence much better when they can be well exposed to the light. The specimen plants, whether they are the large flowering varieties in 11-inch pots or the pompons in 9-inch, will have filled their pots so full of roots that they will require very large and constant supplies of water. If they suffer for want of water, so that the leaves droop, the result will be that many of them will drop off, and the plants be rendered unsightly. The only way to obtain the best results is to pay constant attention to such plants.

Those that are grown to produce single blooms are not filled so full of roots, and consequently do not require so much water—probably not more than about twice in a week—while the others might require it daily.

The Pelargonium.—The show section have now arrived at that stage when they may be repotted into larger pots—at least, all of them that are expected to flower early. Good-sized specimens that were placed in 6-inch and 7-inch pots may now be repotted into a size larger—8-inch and 9-inch. Before blooming time is over the mass of soil will be transformed into a compact ball of roots; it is therefore necessary that the soil should be exactly suited to the requirements of the plants. Some crushed bones added to the compost, that has been previously recommended, will support the plants better than anything else. I like to have the soil moderately moist before the plant is turned out, and in that case it will not require any water for a week at least after it has been repotted. Those plants that may be intended to flower late need not be repotted until early in February. What have been, for want of a better name, termed decorative Pelargoniums, require the same treatment as the others. They are more easily managed, owing to their generally more vigorous constitution. The fancy section is the one that contains the most delicately constitutioned plants; they require a little more warmth during the winter months, and the potting soil ought to be more open—made so by adding some sharp white sand to the compost. The zonal Pelargoniums are now beginning to be very useful. The Chrysanthemums will soon be in full beauty, but there is not much at this season besides; it is, therefore, a great boon to be able to flower this section of the Pelargonium as well in the winter as in the summer. The pots should be moderately full of roots by this time, and the plants ought to be managed so that the first blooms will begin to open early in November. The temperature at night should be from 50° to 55°, and no more moisture should be allowed in the house except what may be spilled in watering the plants. A constant circulation of air is very desirable. *J. Douglas, Ilford.*

Double Chinese Primroses.—The fact that one seldom sees a collection of these—for there are now several varieties—may be taken as proof that somehow or the other they are difficult to grow. Mr. John Reeves, of Acton, who grows the old double white Primula as largely as any man in England, and perhaps better, informs me that he cannot succeed with the newer sorts; and even if he could, in regard to profusion of bloom, they would be far behind the

old double white. Every one must admit that Gilbert's new varieties are most attractive; but where in the London district, except at the Chiswick Gardens of the Royal Horticultural Society, are they to be met with? I think that they and the double come nearly if not quite white. Whether this will rival the old double white in popularity, remains to be seen, but it is deserving a trial. Probably the main reason why gardeners who attempt to grow double white Chinese Primroses are not successful with them is because they have to mix with them other plants, and are thus prevented from giving them the amount of dryness of atmosphere they require at certain periods of the year. In not a few cases the plant-houses are altogether unsuited to the growth of the plants. A market grower builds houses suited to the requirements of the particular plants he largely cultivates; it is very seldom, indeed, a gardener can do this. But there yet remains the acknowledgment made by Mr. Reeves, with which we started—that he fails to succeed with the new double varieties, though such great success attends his treatment of the old double white; and he treats the former just as he does the latter. A little discussion might be the means of bringing to light some important facts in reference to the successful culture of these double Primulas. *R. D.*



FIG. 90.—FOLIAGE OF PARROTTIA PERSICA, AND SCALE FROM LEAF MAGNIFIED. (SEE P. 492.)

Cinerarias also have failed to hold their own in the competition for public favour. A new form of the double Primula sinensis, named Annie Hillier, is just being announced. This was certificated by the Royal Horticultural Society in 1880, and it is said to be both free-growing and free-flowering. The habit is robust, and the colour is bright salmon-pink; but if grown in warmth the flowers will

PUBLICATIONS RECEIVED.—*Forests of the Oural*, by J. Croumbie Brown, LL.D. (Oliver & Boyd). *The Gardeners' Monthly and Horticulturist* (Philadelphia, Oct. 1884).

THE PROPAGATOR.

THE PROPAGATION OF GREENHOUSE RHODODENDRONS (THE JASMINE-FLOWERED SECTION).—This season of the year is the best for the propagation of these beautiful plants. They bloom at almost any season, and so freely that under proper treatment they are scarcely ever out of flower. During recent years great attention has been paid to their culture, with wonderful results, and now in all quarters they are rapidly becoming more popular. The Jasmine section comprises the varieties R. jasminiflorum, R. javanicum, and R. Lobbii, together with the following hybrids raised therefrom, viz., Princess Royal (pink flowers), Duchess of Teck (buff), Duchess of Edinburgh (rich crimson), Princess Alexandra (white), Taylori (pink with white tube), Maiden's Blush (pale rose), and Duchess of Connaught (bright red). These plants, with the exception of R. Lobbii and R. javanicum (which should be grown in an intermediate-house), although grown in the greenhouse, require a slightly warmer temperature than the other greenhouse varieties. To propagate them from cuttings the medium-sized growths should be selected; it is not necessary to make the cuttings at a joint, but it is necessary that the wood and the foliage should be quite ripe, and that they should be about 3 inches in length. Some importance is attached to the method of cutting the cuttings, which contrary to the usual practice are made by making a slanting cut down the side of the cutting to the depth of about a quarter of its thickness. The cuttings should be potted into long thumbs, and should be pressed very firmly into the soil, and after having been watered they can be placed in the cutting frame. If strong plants are required quickly, it becomes necessary to graft. Princess Alexandra is the best stock for grafting any of the above named varieties upon, and being very free to strike, rapidly produces good plants. Side-grafting is generally considered the best, and the operation should be performed as near the pot as possible. To begin with the stock, it is usual to make a perpendicular cut down the side of the stem, an inch long and to the depth of a quarter its thickness, the knife should however be withdrawn without completing the cut, which should be done from the outside by severing the half-detached piece of stem by a downward slanting cut, thus forming a cleft like the barb of a fish-hook, in which to lodge the end of the graft. The graft should now be made to fit the stock to which it should be securely bound with strong matting and placed in a cutting frame.

Culture.—1. *For the Cuttings.*—A place should be prepared on the bed of an intermediate-house to receive a shallow cutting-frame. It will not be necessary to make this more than about 6 inches deep, because it will be found that the cuttings grow best near the glass. The soil for potting should be composed of three-quarters good peat and one-quarter sand; to every bushel of this soil should be added a 48-potful of finely-broken potsherds and one of yellow loam; the whole to be well mixed together, and sifted through a ¼-inch sieve. The cuttings must never be closely shut up; if the frame is covered with a single light it must be raised an inch day and night, but should separate pieces of glass be used instead of a light a quarter of an inch space should be left between each piece, so as, in every case, to afford free ventilation. It will be necessary to look over the cuttings every morning, and to water the ones which have become dry, and to gently sprinkle the whole overhead with a fine rose-pot. The glasses should be kept off the frame for an hour each morning, and the cuttings must be shaded from the rays of the sun. When well rooted, turn the cuttings out on to the front platform of the house, where they should be allowed to remain for one month to gain strength for potting. At the end of that time they can be potted into 60's, and then replaced upon the stage or platform. The varieties above-mentioned do not seem to thrive so well on a cold bottom as they do upon a wooden stage or platform where there is a free circulation of air. During the summer months they must be constantly syringed in order to prevent the attacks of thrips, to which the plants are subject. They should be well watered but never allowed to become soddened. On warm nights the air need not be taken off, but the ventilation must be so regulated as to avoid cold draughts, which may seriously injure the plants.

In winter great attention must be paid to the young plants especially with regard to the watering, which should not be done unless they are thoroughly dry; syringing is to be withheld, but they should be ventilated every morning, the weather permitting. The temperature of the house should be kept as low as possible, having only sufficient warmth to prevent the frost injuring the plants.

2. *For the Grafts.*—After making the grafts the plants should be watered with a spout pot, care being taken not to wet the graft itself, and they can then be placed in a grafting-frame, shutting them up quite close and letting them have hardly any air or water for the first week. After that time the dry plants should be picked out and watered. Ventilation should be given by removing the glasses or lights from the case for an hour in the morning and they should be shaded from the sun.

A little fungus often appears on the matting with which the graft is secured, which will commit great ravages amongst the whole batch if not speedily removed. It is best to rub it off with a piece of cloth when it does appear, but a constant eye should be kept on the grafts to prevent it. When the grafts have well united, and for three weeks after, the frame-lights should be raised an inch day and night for ventilation. At the end of that time they should be placed outside the frame for a few weeks until it is in a fit condition to have the stock cut back to the graft, and in conducting this operation care should be taken not to cut the graft at the same time. The matting on the graft should now be replaced by two small pieces, one tied round the top and the other round the bottom of the graft, in order to prevent its getting knocked off. They should now be potted in soil composed of half good turfy peat, one-quarter loam, and one-quarter sand, to every barrowful of which should be added a 32-potful each of broken potsherds and of charcoal in pieces of Hazel-nut size, the whole being well mixed together. They can now be placed on a platform, watered lightly, and syringed occasionally. It should, however, be borne in mind, that if healthy plants are required, their roots should be disturbed as little as possible. *T. [O., Oct.* 6.

(To be continued.)

Orchid Notes and Gleanings.

A NEW AGANISIA.—According to the *Genera Plantarum* the genus Aganisia is comprised of half a dozen terrestrial and epiphytal Orchids, with fleshy pseudobulbs and plicate ensiform leaves. To this genus the plant known in gardens as Warrea cyanea is referred, as also is the Kœllensteinia graminea of the *Botanical Magazine* (t. 6338). The genus Warrea is now limited to two species, one of which is figured at t. 4235 of the *Botanical Magazine* under the name of Maxillaria Warreana, and which is probably the Warrea discolor of gardens. In the Orchid-house at Kew there is now flowering a new species of Aganisia to which a name has not yet been given. In general characters this plant approaches A. (Warrea) cyanea, but differs from that plant in several particulars. The Kew plant has tufted ensiform leaves, which are a foot long, leathery in texture, dull green, and have three prominent nerves running from base to point. The flower-spike is erect, 18 inches long, as thick as a quill, and reddish-brown at the base. It bears on the upper portion about a score of flowers which are an inch wide. The petals and sepals are pure white, their tips, along with the petiole, being purple. The lip is scoop-shaped, with two small teeth on its lower edge. In colour it is white, blotched with yellow and deep blue. This plant has been obtained from Demerara. Judging by the Kew plant which, though small, is bearing several flower-spikes, this new addition to cultivated Orchids should prove a good garden plant. It is terrestrial in its habits, and appears to thrive in a mixture of loam and sand. When growing it likes plenty of water. Like the other cultivated species of Aganisia, this new addition will require a long rest in winter, to be started in the spring in a warm moist house. *X.*

DISA GRANDIFLORA.—A specimen of this beautiful Orchid has been flowering splendidly in the collection of R. N. Batt, Esq., Purdysburn, Belfast. There were ninety-five spikes in one pan, so it was a grand sight. Mr. Young, the gardener, is very successful in growing this plant, as well as Ouvirandra fenestralis. He has a plant of the latter 3 feet across—a magnificent specimen. It succeeds well, growing under the stage in an Orchid-house where the light is subdued. *A. Outram.*

EPIDENDRUM MACROCHILUM ALBUM. — In large genera like the present we have many extremes of variation, but anon we find groups of species developing along certain lines, that is, bearing a general resemblance to one another, and consequently divulging their relationship. E. selligerum, E. longipetalum, and some others, are evidently not widely disconnected with the subject of this note, but any one who has seen them would have no difficulty in detecting the superiority of E. macrochilum for decorative purposes. The few flowered scapes terminate ovoid pseudobulbs that are somewhat drawn cut into a neck. The sepals and petals are narrowly obovate, dull brownish-green externally, and heavily suffused purplish-brown on the inner face. The former are very characteristically incurved above the middle. The large three-lobed labellum is white, with a small violet blotch near the middle. There are flowering specimens of this variety in the East Indian house at Kew; but other forms, varying in the colour of the lip, are cultivated, and the type is figured in the *Botanical Magazine*, t. 3534. The flowers are deliciously fragrant a few days after expansion. *J. F.*

CULTIVATION OF THE ONION FOR LARGE BULBS.

PROBABLY no one has been more successful in the production of this valuable esculent than Mr. H. Wingrove, who is not only known as the raiser of the celebrated and justly popular Onion the Rousham Park Hero, which has gained nearly one hundred 1st prizes during the three seasons it has been in commerce, but has made himself famous as a prizetaker at our leading shows, notably at the recent Dundee International Show, where he carried off the premier honours in a competition of some forty competitors.

We are indebted to Mr. Wingrove for the following useful hints as to his mode of cultivation at Rousham Park in the production of such enormous and highly finished bulbs as those exhibited last week at the Crystal Palace, dozens of which weighed 1 lb. 6 oz. each, and in some instances 1½ lb. and 1 lb 12 oz.:—

"The soil at Rousham Park, which is of a dark loam, is double dug in October, or early in November, great care being taken to intermix a heavy dressing of well-rotted manure, keeping as great a portion of the manure as possible at the bottom of the trench; the ground is then left in its rough state until early in January, when a good dressing of soot is applied on the surface, which is not only found to be a preventive for the maggot, but a very valuable stimulant for the Onion throughout its different stages of growth. Nothing more is done until the end of January or early in February, when (weather permitting) the beds are pointed over, well raked, and made very firm, and the seed drilled in rows 1 foot apart, which leaves room for the Dutch hoe, and this cannot be done too often providing care be exercised so as not to injure the tops. As soon as the Onions are up and well established, those beds required for exhibition purposes are thinned out to 9 inches apart, and during the stages of their growth a liberal top-dressing of spent Mushroom-bed manure is applied, which is found very beneficial in helping to keep the ground moist and cool in hot, dry seasons, and saves considerable labour in watering. I may add I do not approve of watering in ordinary seasons. I also find a sprinkling of pigeon-dung, as also Clay's Fertiliser occasionally, valuable stimulants, especially in the later stages of their growth.

"I have often been asked my opinion as to sowing seed in boxes or pans and transplanting. I have tried both plans, and I have proved that I get quite as large bulbs from seed sown in the beds in the open air early in February, or even in March, but those I transplanted generally finish better at the base. I attribute this to the fact that the transplanted ones are not so deep in the soil as those sown in the beds. This convinces me that if the ground is properly and highly cultivated, the firmer the surface the better it will be for the bulbs, especially at the base. On a bed treated in the manner described (with the exception that watering was carefully avoided) I measured a plot of ground 10 yards long by 2 wide, the sort

being the Rousham Park Hero, which weighed 240 lb. (after being topped). This gives an acreage weight of 25 tons 18 cwt. 2 qr. 8 lb., which at £8 per ton (and they made £15 and £18 last year) would fetch upwards of £200 per acre; and in face of the fact that an enormous amount is annually sent out of this country for Onions, I am surprised that our agriculturists do not turn their attention to Onion growing.

"To prevent letters being sent to me continually for seed, I would add that my stock is in the hands of Mr. Deverill, seed merchant, Banbury. *Holland Wingrove, The Gardens, Rousham Park, Oxon.*"

The Flower Garden.

As the late heavy storms and severe frosts have destroyed the beauty of the summer garden no time should now be lost in clearing, dressing, and re-planting the beds with winter shrubs, spring plants, and bulbs. In performing this work now, not only will the garden present a changed and bright appearance, but by being planted early the spring plants become well established, and therefore better able to endure the severity of the winter. In removing the summer plants it is always advisable to preserve a few of each of the different varieties of Pelargoniums and other plants, which may be either potted singly or planted thickly in shallow boxes, which should then be placed in pits or in cold houses where they can be preserved from frost. These plants, if not cut back too hard, will be found very useful for planting vases or for filling in the centres of large beds next year. If placed in a moderate heat in January they also soon afford abundance of cuttings for propagation during February and March. In preparing the beds for transplanting it is not desirable at this season, at least where the soil is at all light, to dig them, but simply clear off the plants and rubbish and plant again. By this means much labour is saved, and the firm condition of the soil is more conducive to the health of the plants during winter than when the soil is rendered light and loose by digging. In heavy soils, however, not only will digging be found necessary and advantageous, but where Violas, Polyanthus, or any similar plants are intended to be grown, a liberal dressing of well decayed leaf-mould and sharp gritty sand should also be given, and then, if not wet, the soil should be trodden before the plants are introduced. Where bulbs are also great mischief often arises from the holes in which they are planted being filled in with rich light soil or sand, and without the necessary precaution being taken to make the soil surrounding them equally firm with the other parts of the bed. These holes made by the dibble, form, in wet weather, easy receptacles for the water to drain into, and wholesale destruction is often caused thereby. For small beds for early flowering, the dwarf Winter Aconite is very charming, especially when associated with Snowdrops and early flowering Scillas. The Crown Imperials are also most effective for the centres of large beds and for mixed borders; they are, however, somewhat expensive to begin with, but they rapidly increase when planted in suitable soil, and where they can be left undisturbed for a time. The Crocus when planted in masses is not only one of the most hardy but also the most brilliant of spring bulbs, its cheapness is also a great recommendation, but instead of being planted in thin marginal lines it is always seen to better advantage when planted in large irregular masses, having varied and broken outlines. If partially sheltered from cutting winds these dwarf glowing gems give a more lengthened display. The Narcissus, the Jonquil, and the Daffodil, are for the spring garden beyond all praise, their rich golden hues when seen in contrast with a sufficiency of green being very gorgeous. To succeed perfectly they should be planted deep, and be allowed to remain undisturbed for a few years, taking care to preserve the foliage from injury till it naturally decays. The most suitable varieties are those which can be obtained at a reasonable price, such as N. bulbocodium, poeticus, biflorus, the Pseudo-Narcissus, or Daffodil, and the single Jonquil and Campernelle. The Tulip, both single and double, must also claim a first place in the spring garden, which cannot be complete without them. If those already enumerated give chiefly the orange tints the Tulip provides the crimson, scarlet and rose hues, it also perpetuates the period of bloom far beyond those already mentioned. Then again the chaste Hyacinth, with its lovely and varied shades of purple, red, and pink, must ever command a foremost and prominent position. Not only does the Hyacinth when massed in borders, produce the most charming effect, but for baskets and vases it is particularly suitable and elegant. It is, however, more liable to injury from frosts than those already mentioned, and should receive some slight protection during severe weather by placing leaf-mould or any similar material over the bulbs. In order to prolong the season of their bloom a few bulbs should be potted at different times; these can be conveniently plunged in the vases in succession as they commence to bloom. The Anemones, the early flowering dwarf Iris, Ranunculus, Dog's-tooth Violets, and the Grape Hyacinth, although neither so useful nor so beautiful as those already mentioned, are still exceedingly pretty and interesting, and should not be overlooked when planting the spring garden. To be effective, however, the different kinds of bulbs should be planted with care and with due regard to their varied habits and nature. If the chaste Hyacinth lends an additional charm to the elaborately sculptured vase in the geometrical garden the glowing Daffodil is equally at home in the marshy meadow, and the pure Snowdrop equally happy by the woodland walk. *T. S. C.*

The Kitchen Garden.

Taking up and Storing Roots.—No time should now be lost in proceeding with this operation, selecting for the work a fine day, when the ground and the foliage are dry. The first to require attention is the Beet crop, which should be stored away out of the reach of frost, and where, at the same time, the roots are not likely to become too dry, as is the case when they are packed closely together in sand in a dry shed. In order to preserve their freshness the roots should be packed in damp material, which will not tend to absorb the moisture from them, and for this purpose the following is the most simple and effectual method. The roots should be taken up before they get injured by frost, and with care, avoiding breaking or wounding them—and taken to a dry border under a south or west wall. An opening should be taken out at the end of the border, 12 or 15 inches deep and about the same width, and the digging of the ground proceeded with. When the trench is filled and the ground has been levelled in the ordinary way, the soil should be cut straight down the whole width of the border, and two or three rows of Beetroots placed perpendicularly in the opening so formed, and the digging be again proceeded with until the roots are all covered, burying the crowns about 1 inch under the surface of the soil. The operation is thus continued somewhat after the fashion of transplanting young forest trees from the seed beds in nurseries, until the work is completed. The leaves, which should not be removed from the crown, will afford sufficient protection to the roots from several degrees of frost; but in the event of its being very severe, a protection of dry litter or Fern will be necessary. In the spring, before the roots show signs of growth, they should be taken up, the leaves with a portion of the crown cut away, and the roots laid in again as above recommended. Thus treated the roots will keep fresh and of a good colour. Carrots, with the exception of cutting off the top close to the crown at the time of taking them up, may be treated in the same way as the Beetroot; if wintered in this way there need be no fear of fermentation ensuing, as is so frequently the case where a bulk of them has been put together, sometimes to the entire loss of the crop. Where Parsnips are not grown in great quantities, or where the ground is not required for some special purpose, they are best left during the winter in the ground in which they have been grown, in which position they will require no protection whatever from frost further than covering a sufficient piece for present use, so that in the event of severe frost there will be no difficulty in taking up the roots for use. Salsafy and Scorzonera may be wintered also in the above way, and will be found superior in flavour and appearance to those which have been wintered on the "dry shed and sand" principle.

Ordinary Work.—Autumn planted Cabbages should now have some soil drawn to them; the earthing-up of late plantings of Celery and Leeks should also be proceeded with when the plants are sufficiently dry to admit of the work being done. Late plantings of Lettuce in the open should be taken up forthwith with good balls of earth attached to the roots, and transplanted carefully into the cold pits and frames specially reserved for this purpose, and well watered immediately after planting with a view to re-establishing them in their fresh quarters, where they should have abundance of air on all favourable occasions. Broccoli, Cabbage, Winter Greens, &c., should be divested, when the weather is dry, of all useless and withered leaves that would be likely to become offensive through decay; their removal will enable the stems, through being more fully exposed to light and air, to become hardened and better able to withstand severe weather. Before the seeds on the Asparagus begin to drop off the stems should be cut and removed to the rubbish-heap, saving a few of the best berried stems for seed, which should be tied together and hung up in a dry shed or stokehole in readiness for cleaning during inclement weather. This done, the weeds should be removed from the surface of the beds and then 2 or 3 inches of the loose surface soil should be drawn into the alleys, and the beds covered with 3 or 4 inches thick of the shortest and best manure that can be obtained from the manure-pound, where, in most places, it is specially retained for this purpose.

Mushrooms.—Beds which were spawned about the middle of August should now be yielding good supplies. The successional beds, since they were spawned and covered over with soil in the middle of August and the middle of September, will only have required water once during the interval, and they ought not to require any more for some time to come. The top ventilator should only be fully opened on warm days, or when the warmth is too great in the house, at the same time excluding light, and only sufficient air to be left on as will prevent a stagnant atmosphere in the house, and allow of any excess of moisture to escape. Collect droppings for successional beds, and place them in a dry airy shed, where they can be turned over three or four time before being taken into the Mushroom-house to dry, and also to allow of the rank heat escaping—a procedure that should be repeated for a few mornings after the dropping have been placed on the shelves, with the same object in view. This done, the materials should be beaten as firmly as possible, and when the heat has declined to 70° the spawn may be inserted in the bed, in pieces about the size of bantams' eggs, at about 6 or 7 inches apart, and a little fresh droppings be pressed over it; and when it has been ascertained that the heat in the bed is not likely to rise above 70° or 75° it can be covered with about 1½ inch thick of finely sifted maiden loam of the same temperature or thereabouts of the house (the barrow or barrows containing the soil having been placed in it the previous night), and beaten well together with the back of a spade; the soil must be sufficiently moist to yield to the pressure of the spade, in order to give a firm surface. Should woodlice be troublesome, boiling water should be poured along the sides and ends of the beds in the morning, the sliding shutter having been previously drawn back to let the light on them, which will cause them to retreat to the places indicated, and where the boiling water can be applied with effect and without fear of injuring the spawn. *H. W. Ward, Longford Castle.*

West Kent Natural History, Microscopic, and Photographic Society.—The annual cryptogamic field meeting took place on Saturday, the 11th inst. The members, who were joined by friends from the Erith and Lewisham Societies, mustered in good numbers. They were conducted by Dr. Spurrell through a portion of Abbey Wood, and the grounds of two or three neighbouring gentlemen, but owing to the small amount of daylight available, and the previous dryness of the season, comparatively few fungi were found. The President, the Rev. A. Johnson, M.A., F.L.S., reported the existence in quantity at Kidbrook of a rare and little known Agaric, viz., Pholiota leochroma.

APPOINTMENTS FOR THE ENSUING WEEK.

Monday,	Oct. 20	Sale of 1000 lots of Bulbs, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms. Great Sale of Nursery Stock, at the Nurseries, Wimbledon, by Protheroe & Morris.
Tuesday,	Oct. 21	Sale of 3000 Lilium auratum, at Stevens' Rooms. Sale of Established Orchids, at Protheroe & Morris' Rooms
Wednesday,	Oct. 22	Sale of Bulbs, Roses, and Plants, from Holland, at Stevens' Rooms. Sale of Lilium auratum and Plants, at Protheroe & Morris' Rooms.
Thursday,	Oct. 23	Sale of Imported Orchids in variety, from Mr. Sander, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms.
Friday,	Oct. 24	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
Saturday,	Oct. 25	Sale of Bulbs and Hardy Plants, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms.

THE INTERNATIONAL FORESTRY EXHIBITION at Edinburgh closed on the 11th inst., and has proved to be a decided success. During the past week the work of removing the exhibits has been carried on with despatch and smoothness, and little remains on the ground now except the empty buildings and articles for sale by public auction. Several sales of nursery stock and other exhibits will take place next week, after which the building materials will be sold, and in the course of a month the ground will be restored to its ordinary state.

In respect to finance, the result, we believe, is also satisfactory, and the Committee will have about enough money to meet all demands that are likely to be made. The balance, if any, is not anticipated to be of great amount, and consequently there will be nothing to hand over for the carrying out of the special object the promoters had in view—a School of Forestry at Edinburgh.

However, a committee for the establishment of a Museum and Forest School has been formed, of which Colonel DODS is Secretary, under the patronage and support of the leading landowners, foresters, and others interested in the question in the British Empire, and they are now taking active steps to carry out this praiseworthy object. As a beginning, they have been fortunate in securing a large and valuable collection of the most useful and interesting of the exhibits at the Forestry Exhibition as the nucleus of a Forest Museum.

Her Majesty the QUEEN, as Patron of the Scottish Arboricultural Society, has been graciously pleased to signify her intention of presenting the whole of the interesting exhibits of Scots Fir from Ballochbuie forest for this purpose. The QUEEN'S Scots Fir summerhouse is taken back to Balmoral, and is to be erected in the grounds of the Castle. A complete series of specimens of the splendid timber of British Guiana has been presented to the Museum, and all exhibits from the Cape of Good Hope not required by the Kew authorities, who had the first choice, are to go the same way. A complete collection of the Bamboos of Japan has been obtained, as well as other Japanese exhibits; and Colonel MICHAEL has distributed among five different Museums what can be spared of the numerous and varied exhibits in the Indian Court. The Museums in question are the British Museum, the Kew Museum, the Pharmaceutical Society of London, the Museum of Science and Art, Edinburgh, and the School of Forestry Museum. The whole of the exhibits shown by members of the Scottish Arboricultural Society have also been set apart for the Forestry Museum. Many of the leading nurserymen in Britain have already promised contributions, and a very interesting collection of tree and shrub seeds, numbering over six hundred varieties, has also been contributed by Messrs. VILMORIN-ANDRIEUX, seedsmen, Paris.

The Forestry Exhibition is, therefore, now a thing of the past, and it is time to consider what results may be hoped for from it. But to begin with, we may congratulate the promoters on the essential success of a very spirited and novel enterprise. That it should not have been financially so successful is, no doubt, due, in large measure, to the fact that Edinburgh is not London. Neither will nor ought the temporary dissatisfaction felt by some exhibitors to influence the permanent results. The full value of these results will not be seen for many a day, but it is quite certain that the interest evoked will lead to important results. People had little or no knowledge of the vastness and importance of the subject, and many landed proprietors blessed with bare acres will have found a way to increase the value of their estates, and while laying up a store for their successors, to promote the general welfare of the country. One main result, we trust, will be the organisation of a proper School of Forestry, where the principles of the science may be thoroughly taught, and the art exemplified by the resources with which Edinburgh and its neighbourhood abound. Whether a perfectly independent School of Forestry should be started, or whether it should not take the form of a general School of Agriculture, embracing tuition and training in the principles underlying all successful cultivation, whether of animals, of trees, of fruit trees, of cereal crops, of plants in general, is a question which we hope will be well considered. For our own part, seeing the great necessity there is for a thorough education in general principles, we would fain hope that the teaching in the school should not be restricted to forestry, but should at least comprise scientific agriculture and horticulture. The basis of all is identical, and a man thoroughly well grounded in the principles of physics, physiology, systematic botany, chemistry, geology, mensuration, is placed in the best possible position to devote himself successfully in after life to the practical pursuits of agriculture, gardening, pomology, or forestry, according to circumstances. No doubt, legal and fiscal restrictions, and foreign competition will in the future, as now, hamper the cultivator and prevent him from fully availing himself of the increased means which scientific training, coupled with practical experience, will put into the hands of the cultivator; but that is no reason why he should not get all the advantages he can. From our personal experience we can testify that young gardeners and foresters, in Germany more particularly, but also in Belgium, France, and Denmark, have much better opportunities of becoming acquainted with the A. B. C. of their future life-work than the corresponding class in England, and they avail themselves of them too. In consequence, their competition is likely to become increasingly severe, the more so as they are willing to work for lower wages than are the corresponding class here. Their wants are fewer, their expenses less, and they are not puffed up by a little learning, but know how to use their hands as well as their heads. It must be remembered that we have to supply labour, not only for our own forests and gardens, but to skilled labour and supervision for our colonies and for India. The proper tillage and the full development of the resources of the vast areas constituting Greater Britain devolve to a large extent upon supplies from the home country. There can be no doubt which is the more likely to succeed — the raw lad, the know-nothing, or ne'er-do-well, or the well-trained student of an agricultural or forestry college. Look, too, at the enemies we have to encounter —the insects which ravage, the fungi which destroy our crops and our trees. We know but too well the effects of the Potato fungus, the Vine-growers among our neighbours across the Channel have been all but ruined by hosts of tiny insects, not unknown in our own vineries. Are we to go on forever blundering along in our contention with these enemies, trusting more to chance and to the accident of season to tide us over difficulties, or are we to be guided by thorough knowledge of the nature and tactics of our enemies and the rational inferences to be drawn from them? No doubt it is true that great discoveries must continue to be made by the specialist, and the man who has the competence, the inclination and the time to bestow on that pecuniarily most unremunerative occupation, scientific research. But the power of turning these observations of the scientist to good account can only be exerted by those sufficiently well drilled to be able to see the significance of his researches, and this power can by no other means so surely be obtained as by means of the thorough training to be had in a well equipped School of Forestry, Agriculture, or Horticulture.

Think, again, of the enormous waste of time, labour and money involved in our present happy-go-lucky system, how much money the agriculturalist throws away every year in the purchase of manures; a large proportion, probably the largest is, if not harmful, at least useless. On all accounts, then, we trust to see cultural colleges and experimental stations largely increased over the country. There could not be a better centre for one such establishment than in Edinburgh, and we trust the Forestry Exhibition may be the means of setting one a-foot.

One great object in a Forestry Exhibition is to bring before those interested the numerous resources available. We go on planting Scotch or Larch, or Corsican, or Ash, partly because they can be had by the million, partly because they really are well suited for particular localities—but they are not adapted for all places; and how often does it happen that we have to suffer because all our eggs are in one basket? A forestry exhibition or a fruit show, by making clear the extent and diversity of our resources, can do much to prevent the ill effects of this over-confidence in a few subjects. Among the numerous collections of living plants shown in Edinburgh there were dozens of species shown concerning which there can be no doubt whatever that they are perfectly suited for cultivation on a large scale here or in some of our colonies. But some one will say they are not to be had in quantities, they are far too dear to be used on a large scale or for anything else than ornamental purposes. But this need not be always so. Many of them could be obtained from Japan or North-West America in almost unlimited quantities were there a sufficient demand. The real obstacle is ignorance—and it is just this ignorance, not only in this but in other matters, which forms the chief necessity for schools such as we are advocating.

To take another comparatively small matter for illustration, but only one of many. We are all agreed as to the advantage of planting trees in our streets, and of securing properly planted spaces in our densely populated towns. We recognise that these give pleasure and sweeten life, and we are beginning to find out that this is not merely sentimental, but that our very health and physical welfare in no small degree depend upon them. Vestries and local boards are beginning to see that expenditure of the ratepayers' money in such works is amply justifiable; but what they do not—or some of them do not—realise is that knowledge is required—what to plant, how to plant, and how to conserve and protect when planted. We see the most unsuitable things planted in our towns; or, when not unsuitable, we see a most unwisely restricted choice, and specially we see the grossest neglect after planting. Were there a little more diffusion of cultural knowledge such things would not be. Even in this, which, as we have said, is a comparatively small matter, we see

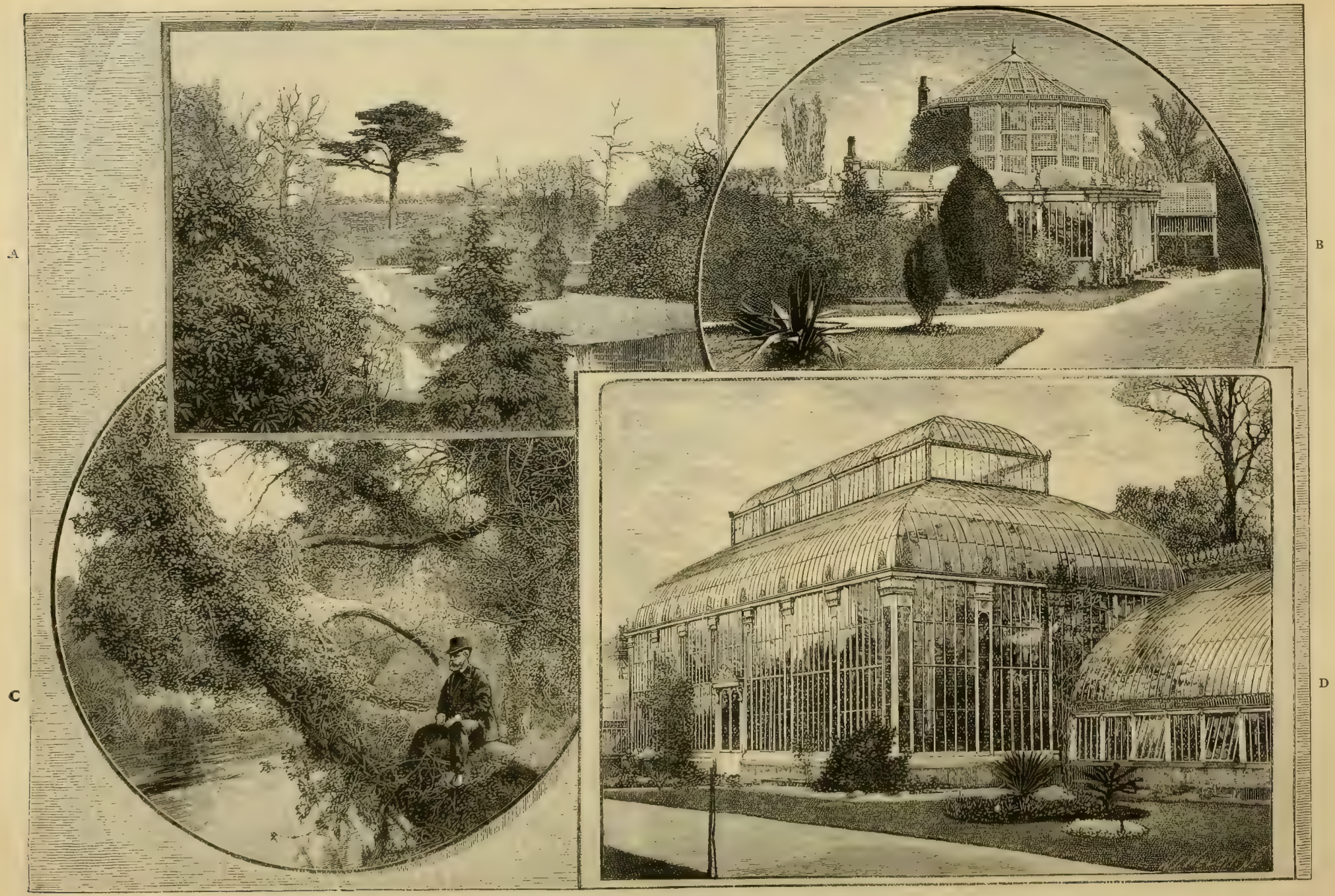


FIG. 91.—VIEWS IN THE ROYAL BOTANIC GARDEN, GLASNEVIN. (SEE P. 488.)

A, View of Ornamental Water. B, Victoria House and Tree Fern House. C, By the River Tolka. D, Plant-houses—Curvilinear Range

the effects of that same thoughtless ignorance which has devastated many of the fairest and most productive districts on the face of the globe. If the Forestry Exhibition be the means, as it doubtless will be, of lessening the evils entailed by ignorance, it will have rendered incalculable service to the community.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We earnestly call attention to the letter of the Secretary in another column. It remains with the gardeners mainly to determine whether a gift of £500 shall or shall not be made to the Society. Less than £500 are now required to ensure such a reserve fund as shall enable the committee with safety to increase the present meagre stipend. If all the gardeners in the country would give one shilling each the required sum would easily be raised. Hundreds of gardeners do, and have done, their best, and borne a larger share of the burden than they ought to have had to bear. It is the thousands of the rank and file whose mites the Society justly claims, but does not get.

—— REPORTS ON LOSSES AND INJURIES TO PLANTS IN SEVERE WINTERS.—We are requested to state that a large mass of materials having been compiled by Rev. Professor HENSLOW, Honorary Secretary to the Scientific Committee of the Royal Horticultural Society, referring to injuries and losses of plants in the severe winters 1838—1861, it is proposed to print it in its entirety, if sufficient encouragement be forthcoming. Mr. HENSLOW would be glad, therefore, to receive the names, addresses, and number of copies desired by any one who will favour him with a post-card to that effect, addressed to Drayton House, Ealing. It will form an 8vo volume of about 450 pp. The price will be moderate, but cannot be fixed as yet. As only a limited number of copies will be printed, as early a communication as possible is requested.

—— THE TOMATO FUNGUS.—Mr. BERKELEY writes :—"Amongst the numerous points of interest connected with the Peronospora of the Potato disease there is one which has not been noticed, as far as I know at present, and I recommend it to the acute observation of Mr. PLOWRIGHT. I mean the mode of its attack on Tomatos. It does not seem to affect the foliage, at least I have never observed it to do so, but is confined to the fruit, which if cut across soon developes the Peronospora in perfection. It is almost impossible in some districts to cultivate Tomatos successfully in the open ground; and this year, which has been peculiarly favourable to their growth, the disease is as bad as ever. I should be very curious to ascertain how the Peronospora attacks the fruit, and in what stage; and now that Tomatos are so general an article of cultivation, it is a matter of some importance. I do not recollect some seventy years ago that the Tomatos were similarly affected. They were not so much grown then, for they were thought to be unwholesome, and even to induce a particular form of disease; and I recollect some hundreds being thrown out of the garden, though the fruit was in high perfection and in a perfectly healthly condition. This, of course, was many years before the Potato disease was known, and consequently before the introduction of the Peronospora, for I am talking of years previous to 1817. I trust Mr. PLOWRIGHT will take the matter up, and if so, he is sure to throw some light upon it."

—— GRAPES IN COOL VINERIES.—The slight amount of discussion our leader of October 4 has provoked amongst gardeners has not been without those advantages resulting from the due ventilation of any matter of practice. Several samples of Grapes have been sent us, all more or less ripe, but the best of all, up to the present, are some Black Hamburgh Grapes sent by Mr. CLAYTON, of Grimston Park. These were taken from a Vine growing in the open on a cottage in the village of Kirkby Wharfe, near Tadcaster; but we will not anticipate, but will leave the writer to tell his own story next week. A great quantity of sorts were sent us by an amateur signing himself "Philomelos," whose letter we publish in another column. These were mostly small in bunch, and with a few exceptions small in berry as well. They were grown under apparently more favourable conditions than the Black Hamburghs above noticed, but yet were not at all in so ripe a state, and yet they were the produce of a cool vinery. The best of these were the Chasselas or Sweetwater, Chasselas Musqué, Primavis Frontignac, a grape considered to be synonymous with C. Musqué, Cranford Muscat, Meurthe Frontignac, and Chasselas Musqué de Sellery; these had a decided flavour, and were much superior to the others, that were greatly deficient in sugary matter. They all wanted one of two things, either to have been started earlier with a modicum of fire-heat, or else to have been assisted with it all through the month of September, as this month and the earlier part of October is the crucial period in central European vineyards, and if it is cool and cloudy that is a bad wine year.

—— ANCHOMANES HOOKERI. — There is a figure of this bold and striking Aroid in the *Botanical Magazine*, t. 3728, under the name of Caladium petiolatum. From that genus it is widely separated both in general appearance and in botanical construction. Horticulturally it is both interesting and ornamental, firstly on account of its prickly peduncle and leaf-stalk, and secondly for its ternately compound leaf and large deep purplish-brown spathe. Compared with many of the family, the nervation of the leaf and spathe is a marked feature, and one that commends itself greatly to lovers of this class of plants. The former is evergreen in its character, thus simulating the Anthuriums, and the latter last for many weeks, ultimately withering and persistent. The curiously tuberculated female flowers are coloured like the spathe, while the males are creamy-white. There is a flowering plant in the Victoria-house at Kew.

—— FLORAL COMMITTEE AT GHENT.—At the recent monthly meeting the jury, consisting of MM. J. Kickx, A. Verschaffelt, F. Desbois, C. Spae, A. van Geert, A. Rosseel, with M. Lubbers, of Brussels, President, and C. van Geert, of Antwerp, as Secretary, the following Certificates were awarded :—

Certificates of Merit.

To Verbesina Mameana, from M. E. André, of Paris; Echeveria decora variegata, from the Compagnie d'Horticulture of Ghent; to Cattleya sp. with white flowers, from M. Vervaet-Devos; to seedling varieties of tuberous Begonias, from MM. Blankaert & Vermeiren, of Gendbrugge; to Dieffenbachia reginæ, from M. Pynaert van Geert, of Ghent; to Cypripedium calurum, from M. A. van Geert, of Ghent; to Anthurium insigne from M. Pynaert van Geert, Ghent.

Cultural Certificates

were awarded to the Compagnie Continentale d'Horticulture, for Darlingtonia californica; to M. Louis van Houtte, for Washingtonia robusta; to MM. François Desbois et Cie., of Ghent, for Lasiandra macrantha.

Honourable Mention

was made of Heliconia aureo-striata, from the Compagnie Continentale; Cattleya Dowieana, from M. Vervaet-Devos, of Swynaerde; of Galeandra thrinax, from M. Ad. d'Haene, of Ghent; of Anthurium carneum, from M. Pynaert van Geert; and of Cypripedium Lowi, from MM. Desbois et Cie., of Ghent.

—— AUTUMN BLOSSOMS.—Gooseberries are not in season, so the daily papers, not finding their columns sufficiently filled with interminable talk about the Franchise, are filling up with gossip about autumn flowering trees. For ourselves we may mention Pears, Plums, Horse Chestnuts, Cherry Laurels, Rhododendrons, as presenting this phenomenon, probably in consequence of the warm autumn. In some cases it is a premature starting into growth, in anticipation of spring; in others it is due to the formation of flower-buds on the ends of long shoots usually terminated by a leaf-bud, the cause of which is not so easy to determine.

—— VEGETARIANISM AT THE HEALTH EXHIBITION.—The Vegetarian Society gave a dinner on the evening of the 9th inst. in the restaurant carried on under their direction in the Health Exhibition, when the chair was taken by Dr. B. W. RICHARDSON. The *menu* included soups—Tomata and Rice and Lentil; *entrées*—green (sugar) corn, or young Maize, oaten grits, and macaroni *au gratin;* removes—bruised Haricots, savoury omelette, curried Mushrooms and Rice, and bread fritters; *entremets*—boiled Chestnuts, samp pudding, and Vegetable Marrow *au gratin;* vegetables—Brussels Sprouts, Potatos, Jerusalem Artichokes, and baked Turnips; sweets—Barley pudding, Ceylon pudding, Apple and Damson tart, vegetable custard, Iceland moss jelly, and Pine-apple; stewed fruits—Pears, Apricots, French Plums. For dessert, in addition to several varieties of Grapes, Pears, Apples, and nuts, there were served Bananas, Spanish Melons, Green Gage Tomatos, and Brazilian Oranges. The beverages, besides lemonade, seltzer, and zoedone, were palatable unfermented concoctions, such as sparkling hop and morella, pear and other so-called fruit champagnes. Dr. RICHARDSON expressed the belief that man might by care in the selection and preparation of certain kinds of vegetable food become a liver upon a vegetable diet. Man, he believed, was really a fruit-eating animal, but if this Society succeeded in attaining its objects it would be making certain advances towards those natural necessities which we saw in man himself. They must not hold altogether to the diet being wholly vegetable, and they must select those things from the vegetable world which were most suited to the digestive system of man, modifying them by art so as to assimilate them, as far as possible, to the condition of those animal products upon which we knew that men could subsist. The number of fruits available for the table might be increased; the cultivation of Mushrooms might be most beneficially extended by utilising that which was now refuse, difficult to get rid of, and a source of danger to health; other edible fungi, like the Bovista, or Puff-ball, a delicious and nutritious article of food, might be introduced; and Fern roots, as fine flavoured when properly cooked as Asparagus, might be brought to table. But vegetarians must go to chemistry as well as to cookery in order to do entirely without the transforming power of the animal in converting vegetable food to the use of man. Cheese, for instance, as the Chinese had known for ages, might be made without milk, from the Lentil; and there was no doubt that we should discover a way to make milk, and that some day milk would be produced on as large a scale as beer was now in our breweries. After dealing with the question of the sufficiency of vegetable foods for the support of man in extremes of temperature, he glanced at the changes, physical and moral, which the adoption of a vegetable dietary would probably produce on civilised man, especially mentioning a diminution of the craving for alcoholic drinks.

—— INTERNATIONAL POTATO SHOW.—The large heaps of the most popular sorts of Potatos, staged by Messrs. JAMES CARTER & Co., 237 and 238, High Holborn, London, W.C., were the more remarkable from the fact of their being absolutely samples of the produce of field crops in large acreages under growth this year for Messrs. CARTER'S requirements. It is the opinion of many that this method of staging Potatos for exhibition is to be recommended, as it places before intending cultivators a real estimate of what can be produced under ordinary conditions. Small dishes that are simply raised for exhibition purposes can hardly give a real idea of the actual merits and properties of any particular kind, and, having this in mind, Messrs. CARTER, in our opinion, acted wisely in contributing these naturally-grown specimens—chief among which were noticeable Carters' Ashtop Fluke—the finest quality Potato in cultivation; Carters' First Crop Ashleaf—the earliest variety; a new seedling, said to possess extraordinary merit, to be introduced this season; Cosmopolitan—a fine exhibition kind, noticeable in all the leading groups; Schoolmaster, Hero, Early Rose, Paterson's Victoria, Cetewayo, White Elephant, Magnum Bonum, Beauty of Hebron, and other popular Potatos. One of the greatest novelties of the present day is also associated with this display, in the shape of Carters' Lilliputian Potato—a new variety producing myriads of little tubers no larger than a Pea—a regular infant prodigy. If this extraordinary growth can be "fixed" this Potato should be grown by every one. Messrs. CARTER also contributed liberally to the list of prizes, a very large competition being the result in these classes.

—— UREDO, PUCCINIA AND ÆCIDIUM.—At a recent meeting of some local Natural History Societies Mr. W. G. SMITH read a paper on these fungi, wherein he alluded to the absence of type specimens, consequently although the observer may have a strong conviction that in some genera of fungi nine out of ten so-called species have no right to be so accounted, yet it is not safe to extinguish them without reference to type examples which unfortunately do not exist. Mr. SMITH then passed on to the question as to the relationship existing between the three forms above named—some considering that all three are phases in the existence of one genus, others that they are sepa-

rate entities—and pointed out the difficulty of discriminating the so-called species, which are often named solely according to the plant on which they may happen to grow, under the presumption that each species has its own distinct parasite. The generic identity of Æcidium, Puccinia, and Uredo is unhesitatingly objected to by Mr. Smith, who also denounces laboratory experiments with germinating spores as "without meaning, and perfectly valueless."

—— Choice Late Tulips.—Any one desirous of taking up the cultivation of this gorgeous flower has now a good opportunity of doing so. Mr. Henry Goldham, of Carshalton, a renowned raiser and cultivator for many years past, is desirous, through advancing years and failing health, of parting with his collection of 10,000 bulbs, under name, and well arranged, about three-fourths being varieties raised by himself, and only in his possession. Mr. Goldham has been a cultivator for fifty years, and gives up his favourite flower with much regret.

—— National Carnation and Auricula Society. — A meeting of the committee of this body was held in the conservatory at South Kensington on Tuesday last, under the presidency of Mr. Shirley Hibberd. Present: Messrs. Douglas, H. G. Veitch, J. Laing, J. Fraser, G. F. Wilson, H. Cannell, Charles Turner, Dr. Masters, and Dr. Hogg. Mr. Douglas, one of the Hon. Secretaries, tendered his resignation, and it was stated that the President was about to take the same step. It thus became necessary to select office-bearers for the ensuing year, and at the same time to frame a body of rules for the future guidance of the Society, no such rules at present being formulated. Mr. Douglas withdrew his resignation, and was requested to act as sole Secretary, and a sub-committee, consisting of Mr. Hibberd, Mr. Charles Turner, and the Secretary, was appointed to draw up the rules and statutes of the Society, which will be submitted to a general meeting to be held at South Kensington on November 11 next.

—— A Chrysanthemum and Fruit Show is to be held at Yeovil on Tuesday, November 18, and Mr. C. Tite, of Fairview, Yeovil, is the Hon. Secretary. This is the first attempt at holding an autumn show in the town, but judging from the success of the summer shows in the past and the promises of support already received, success is beyond a question Yeovil is an excellent centre, having three lines of railway. Unfortunately, however, the date clashes with Devizes this year, but this will doubtless be avoided in future. The arrangements at the places named ought also to fit in with Taunton, Dorchester, and other western towns. We regret to hear that there is to be no autumn show at the last-named place this year. Surely the county town of Dorset can manage a good flower show at least once a year, surrounded as it is by large and good gardens owned by wealthy residents, and under the care of well known gardeners.

—— Clematis are extensively used at Purdysburn, Belfast, for bedding, as well as tuberous Begonias, both succeeding well, being a blaze of colour even at this season of the year.

—— Tropæolum speciosum.—Who can withhold a tribute of admiration for this lovely perennial, as it was seen in the middle of last month growing in places on the banks of the Tay. At Newburgh it can be met with growing against the walls of houses and in other places, flourishing like a Bay tree, free of growth, in its brilliant vermilion flowers, and seeding freely also. It is well named the Flame Nasturtium. Some say that locality has little to do with the well-being of this plant, but situation a great deal. A moist climate in all probability suits it best, and a position where the soil about the roots is cool and fairly damp, and shaded from the sun for a portion of the day; there it establishes itself, and sends up its many shoots, if it can attach itself to anything in order to get upwards to a height of 8 feet or so. Heat soon spoils the flowers, and thus it is that a shaded cool position appears to suit it best. One who has grown it very successfully reports that when he wishes to make a new planting he excavates "the soil to the depth of about 18 inches, then he lays down to the depth of 4 or 6 inches some old pea-sticks trampled down as solid as possible, then a layer of 9 or 10 inches of good old hotbed dung or rotted manure, beating the whole firm to prevent the bed sinking, a slight covering of soil is then placed on this, then the roots are laid pretty thickly over the bed, covering them with 3 or 4 inches of soil." After the bed has stood a few years, and the soil becomes exhausted, a mulching of manure is added with advantage. And the writer goes on to say "it is not necessary to guard against frost, as the roots are perfectly hardy, only, as they start into growth early, planting should be done in January." These particulars supply suggestions as to how this glorious creeper might be treated with a view of making its cultivation more general further South. It used to grow with conspicuous success against the lodge wall at the entrance to Becket Park, at Shrivenham—Lord Barrington's seat in Wiltshire—in a shady cool position. If successful there why should it not prove equally successful in many other parts of England, from which it is now almost entirely absent?

—— Æchmea Marie Regina.——This grand plant is flowering at Purdysburn, Belfast. Seldom seen, but nothing more peculiar and showy.

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Oct. 13, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been dull, cold, and unsettled, with frequent and heavy rain. At many of our central and northern stations some sleet or snow showers were reported, while in some parts of eastern England on the 9th and 10th thunder and lightning were experienced. The temperature has been considerably below the mean, the deficit varying from 3° in "Scotland, N.," to 5° or 6° in nearly all other districts, and to 7° in the "Midland Counties." The maxima, which were registered on the 7th, ranged from 63° in "Ireland, N.," to 54° in "Scotland, E." During the latter part of the period the highest readings were (excepting at a few coast stations) nearly all below 50°. The minima were generally recorded either on the 11th or 13th, when the thermometer fell to 29° in "England, N.W.," and "England, S.W.," to between 30° and and 32° in the other English districts, between 31° and 33° over Ireland and Scotland, and to 39° in the Channel Islands. The rainfall has been rather less than the mean in "Scotland, W.," "England, N.W.," and "Ireland, S.," but more in all the other districts. In "England, E.," owing to a very heavy fall on the 10th, the total amounted to nearly five times as much as the mean. Bright sunshine has been less prevalent than it was last week, the percentages of possible duration varying from 39 in "Channel Islands," and 36 in "Ireland, S.," to 22 in "Scotland, N.," and only 7 in "Scotland, E." Depressions observed.—At the commencement of the period a long band of high readings extended from Ireland to the south of Sweden. This quickly broke up, and on the morning of the 8th two areas of comparatively high pressure were shown—one over the Bay of Biscay and the other over Sweden, while a depression was advancing from the northwards to our north-west coasts. By 8 A.M. next day the centre of this disturbance had reached the mouth of the Bristol Channel, and caused fresh to strong northerly or north-westerly gales on many parts of the western coasts. It then changed its course and moved eastwards and north-eastwards over the south of England, and during the 10th and 11th very slowly north-eastwards over the North Sea, finally disappearing to the eastward of Denmark. The wind, which as the disturbance travelled over the South of England had been strong from the northward at all our western and northern stations, and light from the southward in the east, subsequently shifted to the northward on all our coasts, and blew with the force of a moderate to strong gale generally. By the end of the week, however, it had backed to the westward in the north-west, with a gradually falling barometer.

—— Gardening Appointment. — Thomas Plumb, lately Second Gardener at Sir William Marriott's, The Down House, Blandford, Dorset, as Gardener to Captain Vernon Carter, Hunsdon, Ross, Herefordshire.—Mr. James Dickie, General Foreman, Dalkeith Gardens, N.B., has been appointed Gardener to the Marquis of Waterford, at Curraghmore, Co. Waterford, Ireland; and Mr. Alex. Methven, Foreman, Dalkeith Gardens, as Gardener to the Marquis of Tweeddale, at Yester, Haddingtonshire, N.B.

FORESTRY.

Reasons why Woods do not Pay.—It is worthy of repetition that a perfect or at least an approximately perfect, adaptation of the tree to the soil, situation, and climate, is not only the primary and fundamental work of the successful forester, but the true foundation of all successful operations, and therefore should engage the utmost attention and thoughts of the planter. The want of this attention and reflection is manifested in the sickly and unremunerative and poverty-stricken plantations to be seen on many estates in Great Britain. In my last paper on this subject some examples were given of good, successful, and profitable tree planting; and to furnish these examples almost the whole country had to be searched. No such difficulty, however, it is to be regretted, presents itself in finding innumerable examples of unsuccessful ones, and also many that may almost count as failures. The most extensive plantation I know of in Scotland may rather be included in the latter than the former class, and may be regarded as a decidedly bad investment, and ought to teach a very salutary lesson. It is thought imprudent to be more specific in regard to this plantation, but anything further may be obtained from the writer, if desired. It was planted by a man eminently distinguished for his intelligence and abilities in tree culture—that is to say, the reins of power were so far left in his hand in its execution as to entitle him to praise or blame for the results. This distinguished planter (now deceased) was second to none in fame and reputation as a forester, yet that plantation is to a demonstration one of the worst paying ones to be found (it is fondly hoped) anywhere. It was well fenced, well drained, and properly cared for at all stages of growth, and the trees were also properly put into the ground. It comprises several thousands of acres, and the crop, with some unimportant exceptions of rare and new imports, consists exclusively of Scotch Pine, Larch and Norway Spruce. Now the question of questions in connection with it is, wherein lies the cause of the failure? It lies as it were in a nutshell—in this one circumstance, that to a very great, important and serious extent Scotch Pine had been planted on soil which should have been planted with Norway Spruce. On making a general but satisfactory inspection of this plantation a short time ago, it was found that the average worth of the Scotch Pine was only 1s., that of the Larch 3s., and that of the Spruce 5s. each tree. Now, if we take 300 trees per acre—which was about the average crop on the ground, we have the respective values—Scotch Pine £15, Larch £45, and Spruce £75 per acre. Now, the difference between £15 per acre, which is the principal crop, and £75, which is the exceptional one, though great indeed, yet does not represent the whole of the difference of loss; for had the crop been exclusively Norway Spruce it would have been mature and ready for cutting, and clearing and replanting the ground at about fifty years old. Wherever the Scots Fir, in order to attain value (if the ground would have brought it to perfection, which it would not), would either require to occupy the ground nearly twice that time, or go to decay, which it is fast doing. It is on account of the want of truly reliable information on this particular point, to enable the planter to distribute the plants so as to suit the soil, that the false and blindfolding practice of mixing is resorted to. Many planters who would gladly group their trees if they only knew to a degree of certainty what would be the result, fall upon the old and as they suppose tried and approved practice of mixing. Now although the loss when the failure does occur is much less apparent in mixed than in grouped plantations, yet the loss is the same, with only this aggravated difference, that in the one case it is seen and may or may not be remedied, while in the other it is not seen and is next to impossible to remedy. In valuing mixed plantations, however skilfully and ingeniously the trees are mixed, it matters not of what species, it is always found that some of the species have double, triple, and even quadruple the value others have. If a forester has entrusted to him the management of a plantation, however young, or however old, and whether mixed, grouped, or of one species, he is actually powerless and helpless in regard to making it profitable if the crop is such as is not adapted to the soil. It is quite a common thing to find an Elm tree occupying as much space and be as old

as an Ash tree by its side, and yet the former is worth only 5*s.*, while the latter is worth £5. Mixing, again, is subject to another disadvantage, viz., the difference in rapidity of growth; some trees, as is generally known, grow so much faster than others, that while they overgrow and subdue their less vigorous growing neighbours, they are themselves at the same time sustaining very considerable injury, which ultimately results in great loss to the proprietor.

There is yet another and very substantial reason why mixed plantations pay less than grouped ones, namely, the want of uniformity of time in attaining maturity. Some species of trees are quite ripe and ready to be cut at fifty years old, while others are not ripe till twice, and even three times that age; and in disposing of a plantation to wood merchants or others, there is always a comparatively higher price per acre obtained for a clearance than for a thinning. There is yet another loss, and the last I shall mention at present, in connection with mixed plantations, viz., the difficulty and expense of thinning them and clearing the thinnings. In a grouped Pine or Fir plantation one thinning, if done at the proper time, may be sufficient for it in all time coming, but in mixed plantations the case is widely different, especially if it consists of Pine or Fir, and hardwoods. It is no uncommon thing for such plantations to require thinning at least six times during their minority, and when all is done the trees are rarely, if ever, so healthy and well grown as when grown in groups. *C. Y. Michie, Cullen House.*

DIGGING SHRUBBERY BORDERS.

THIS operation, like a good many others in the routine of gardening, meets with approval by some and by others with disapproval; those who object to the practice alleging that the more or less destruction of surface-roots that occurs is so much direct injury inflicted on the trees and shrubs that occupy the ground; whilst those who approve of annual digging contend that the injury inflicted is more than counterbalanced by the freer admission of water that follows the surface being loosened. It may be set down with safety that under certain conditions both are right; the amount of rainfall that occurs in the locality, the nature of the soil, and the lay of the land, all tend to determine whether digging or no digging is the right course to adopt. In districts where the rainfall is large, and the soil is of a nature to hold moisture, and the ground occupied by the shrubs is flat, there can be no question that there is little or nothing to be gained by digging, as enough water each autumn and winter will settle down below the surface to keep the roots in a healthy thriving condition through the growing season; but when, in addition to a light rainfall, the clumps and beds have either a natural slope, or have been rounded up in their formation, and the nature of the soil is such as to favour a hard, baked condition, unless the surface is stirred, it often happens that the earth occupied by the lower portion of the roots is almost dust-dry from one year's end to another, more particularly should there be any old trees near enough to enable their roots to reach where the shrubs are. As a matter of course the question under notice refers to cases where the shrubs have attained considerable size, and their roots fairly occupy the ground; in their early stages, whilst the roots have not yet laid full hold of the soil, there can be little question that stirring the ground by digging is advantageous, and in the operation the fallen leaves, which are the natural fertilisers, should be dug in.

In carrying out this kind of work, where the conditions are such as to make its being done expedient, there are two ways of doing it—right and wrong; to just loosen a few inches of the hardened crust with a fork, whereby the admission of the rain as it falls is secured, with little breakage of the roots—and the opposite, of deep spade work, done, as it often may be seen, without a thought that the roots are the most vital parts of the plants to which they belong, and though water is indispensable to the performance of the part which Nature has assigned them, by their destruction wholesale to secure it the cure becomes as bad as the disease.

Whenever this work has to be carried out it should be finished as early in the winter as convenient; to defer it until spring, just before growth commences, is a mistake, as ever so little interference with the roots then has a worse effect than when all the energies of the shrubs are dormant.

HOME CORRESPONDENCE.

Strawberry Héricart de Thury.—The question of your correspondent, "H. N.," in your issue for September 6, respecting his Vicomtesse Héricart de Thury Strawberries dying off, I should like to have seen answered, as 25 per cent. of ours are going in the same manner, while other sorts grown side by side with the Vicomtesse are all doing well. I have been informed from places in England and Scotland that this sort is going off in the same way. Ours were got from a well known nursery in very fine condition, and were potted off in rare order, everything going well with them for a few weeks, when some began to flag. We supposed that they had been very dry, but on examining the roots these seemed quite fresh, and did not look as if they had suffered in any way, but when we took hold of the leaves the crown came clean off. It seems as if the rot only affected the crown, because the roots seem healthy for a few days after the crown has died. We have lost a great many, and seemingly shall lose many more. It is not caused by any species of grub, for there are none in the pots, nor have the plants suffered from overpotting nor from deep-potting, nor from the routine of treatment. *John Forbes, Dover House, Roehampton.* [Please send us a plant or two for our inspection. ED.]

Piper porphyrophyllum.—Mr. N. E. Brown at p. 438 of a recent issue says:—"It is very remarkable that such a handsome plant as this is should have remained in our gardens for so long a time without having been correctly determined as to its genus before now, since it is none other than the beautiful stove climber which Lindley described as Cissus? porphyrophyllus in the *Proceedings of the Horticultural Society of London*, vol. i., p. 225, about a quarter of a century ago, and which has been grown under that name here and on the Continent until this day." Now, this shows how reluctantly a correct name is adopted, and how slightly it is valued by general cultivators, for I can fix by a circumstance that it is fourteen years ago since growing plants were first correctly labelled as above at Kew. The correction must have been seen by a great many for several years at least, and yet Mr. Brown finds the wrong name extant. I may remark that the stem and venation of the leaf clearly points to Piper, but the pretty coloration of the foliage was once novel, and probably suggested alliance with Cissus. *R. Irwin Lynch.*

Hedychium Gardnerianum.—In reply to Mr. J. W. Murphy (p. 470), who asks for information on how to flower the above plant annually, one might point to several public gardens in which the flowering of this old favourite is of annual occurrence. At Glasnevin it always produces its large, handsome, yellow spikes under out-of-doors treatment, and in the greenhouses at Kew, the Botanic Gardens, Regent's Park, and other gardens both public and private, it may be seen thriving under ordinary treatment and never failing to develope flowers. At Kew it is now flowering both in the greenhouse and in the temperate-house. Planted out in a strong loamy soil, and in a sunny position in a cool greenhouse, and supplied with an abundance of water during the summer, this plant is almost certain to grow strongly and flower freely. In winter no water should be given, and the plant should be allowed to rest. The old stems if not cast during the resting period ought to be removed on the return of summer, and if the soil in which the rhizomes are planted appears exhausted, a good top-dressing of loam and dung will be found helpful in the growing season. Some years ago Mr. Bennett of Hatfield Gardens exhibited a specimen of the fruit of this plant at one of the Horticultural Society's meetings. The fruiting of the Hedychium is not frequent under cultivation, but Mr. Bennett's plant fruited freely, and plants of it also fruited in the Botanic Gardens, Regent's Park, three or four years ago. In neither case was artificial fertilisation resorted to. Strangely enough, I have tried to obtain fruit by carefully fertilising the flowers of H. Gardnerianum, but neither the flowers thus operated upon nor those left to themselves set for fruit. The character of the fruit of this plant is a dense spike of three-valved leathery looking seed-vessels, of an orange-yellow colour, each valve containing in its brightly coloured pulp a brilliant crimson seed, covered with a mace-like arillus, the whole being well exposed so as to form a beautiful object, at least as attractive as the flowers. Those who cultivate this plant will therefore see the wisdom of allowing the withered flower-spike to remain on the plant till all hope of their producing fruit is past. *W.*

—— In your last number a note by Mr. W. J. Murphy came under my notice on the above failing to flower satisfactorily. From my experience I have never known any difficulty in flowering it every year. We have it in abundance, and at present there are some of them in bloom in the front hall of the Lodge here, which are much admired, peeping from amongst Palms and other foliage plants. Notwithstanding the cold draughty position, they seem to do admirably. We give them no special treatment, simply turning the balls out every second year, cutting away all useless bulbous roots, potting them in good turfy loam, with one quarter of leaf-mould and a sprinkling of silver-sand, keeping close until established, afterwards treating them as ordinary greenhouse plants. In this way we have them to flower annually from every growth made. *R. McKenna, The Gardens, Chief Secretary's Lodge, Phœnix Park.*

—— If Mr. Murphy will allow this noble old plant to get a little pot-bound and after the blooming period gradually reduce the water supply until the stems die off, then stow away along with his Cannas until the spring, and then start it into growth gradually, he will experience no difficulty in blooming it every year. I had a large plant at Beaurepaire Park that never failed for years to bloom treated in the way I have described. Last year it had seven very handsome spikes of more than 6 feet high. It is a very handsome foliage plant, most deliciously scented, and is well worthy of a place in every garden. *Joseph Murdoch.*

Carnation Louisa Ashburton.—Last autumn I sent you a description of this white, Clove-scented, perpetual-flowering Carnation, as I then saw it at the nursery of Messrs. Cross & Steer. The plants were at that time in 4 and 5-inch pots, bearing abundance of fully expanded flowers, and they continued to bloom freely through the winter and spring months. Last May about 300 of these plants were transferred to the open ground, and when I visited the nursery a few days ago I was charmed to see hundreds of fully expanded flowers upon them, as well as innumerable buds in different stages. This beautiful and pleasing sight fully substantiated the opinion I previously formed of its perpetual nature; indeed, I do not think there is another Carnation in commerce so well entitled to this designation, which, with its purity and delicious scent, will speedily place it in the foremost position for winter decoration and for market purposes. *T. Challis.*

Grapes in Cool Vineries.—As the growers of Vines without artificial heat may be disheartened by your recent article condemning them to grow The Miller, &c., I send you small specimens of nineteen varieties grown on the rafters of an orchard-house, with nothing but the heat of the sun. I have sent the specimens in as small bunches as possible, as I was afraid of attempting to pack large ones. The varieties are:—Chasselas Musqué de Sellery, Primavis Frontignac, Early Golden Frontignac, Madresfield Court, Duchess of Buccleuch Frontignac, Buckland Sweetwater, Tokay Frontignac, Cranford Muscat, Chasselas Musqué, Early Smyrna Frontignac, Muscat de Portugal, Early Silver Frontignac, Purple Constantia (two from separate Vines, which being in different parts of the house do not appear to ripen similarly), Black Muscat of Alexandria, Venn's Black Muscat, Meurthe Frontignac, Mrs. Pince's Black Muscat, Muscat Champion, Grizzly Frontignac. The trees have been planted about fifteen years. When they were young I grew in pots altogether about 130 varieties; 118 of these I had in the house (36 by 16). At one time a very small minority of them failed to ripen. I ought to say that most of the coloured ones require some days more, but it is difficult to get a number of varieties ready at the same time, and if I had waited the early ones, of which the most forward bunches have been used, would have been past their best, so I have sent them as they are. Last year the Madresfield were as black as Sloes fully a fortnight before this time. I must own that the flavour is not as good as usual, but they have had a very large supply of liquid manure, and the crop has been very heavy—probably 900 lb. Red-spider is showing itself on Early Golden, but that will be easily kept under. I ought to say that I prune, train, and thin them myself, otherwise I should have lost all interest, and have long ago descended to Black Hamburgh, of which I have only one plant of the true variety. My gardener syringes and opens and shuts, and a labourer swills abundantly with water, &c. *Philomelos.*

Dimorphism in Aroideæ.—The wide difference observable between the foliage of many Aroids when young and when fully developed is perhaps a normal one, and therefore ought not properly to be classed along with those remarkable variations to which the term dimorphism is applied. In the following cases, however, the difference is so very marked and unlooked for that we may be excused for considering them as good instances of dimorphism. Several years ago a plant named Marcgravia paradoxa was introduced from South America, and was distributed under that name. The resemblance of its flat clinging habit of growth, and of its flattened foliage to what we meet with in Marcgravia umbellata (syn. M. dubia), no doubt led to its being mistaken for a member of that genus. It will be remembered that the stems of M.

paradoxa are flattened and cling Ivy-like to any damp surface by means of the stem-roots. The leaves are produced rather closely together so as to overlap each other, and owing to the clinging habit of the stem they are pressed quite flat against the wall or board on which the plant is usually grown. In form these leaves are almost round, and are as large as the palm of the hand. As the plant grew larger it gradually freed itself from the surface on which it clung, and the foliage, which had increased in size as the stem lengthened, finally developed into a long pinnatifid blade similar to the leaves of many of the Philodendrons. A plant now in the Kew collection shows this dimorphic character perfectly. It is growing against a moist wall, and is about 15 feet high. The lower leaves are of the usual small size, but near the top of the stem they are nearly a foot in diameter, whilst several of those last developed are oblong, and the blade is split up on each side into several divisions exactly as in Philodendron pinnatifidum. From the native country of this plant we may infer that it is a species of Philodendron; at all events, it is certainly not a Marcgravia, these plants having thick, leathery, entire foliage, and terminal umbels of greenish flowers, with pitcher-like bracts. The plant known in gardens as Pothos aurea, and which is a scandent Aroid, with clinging stem-roots and ovate-acuminate leaves, which are green, marbled and blotched with yellow, is another instance of dimorphism in leaf characters. Under liberal treatment this plant has at Kew developed foliage both larger than and dissimilar in form from what is seen in young plants of it. The leaves on young plants are 3 inches long by 2½ inches in width, and are entire, whereas the foliage on large plants is 18 inches long and 13 inches wide, and is distinctly pinnatifid. These characters are shown on a plant at Kew, and they may also be seen on a specimen in the Cambridge Botanic Garden. Coming to us from the Solomon Islands, from whence M. Linden introduced it in 1880, this plant is most likely a species of Raphidophora. The plant provisionally named Pothos celatocaulis by Mr. N. E. Brown, and which is very similar in habit to the so-called Marcgravia paradoxa, is probably a species of Scindapsus, its habit and the form of its leaves being more like what are seen in plants of that genus rather than Pothos, the species of which branch freely, and have a curiously winged petiole. In at least two of the above cases we see how wide of the mark a name may be when given to a plant in an undeveloped state. *W.*

Spathiphyllum Minhassæ.—Many plants of this genus are characterised by bold and ample foliage usually devoid of coloration, and consequently comparatively neglected by cultivators of stove plants generally. The one under notice has an elegantly tufted habit with handsome spreading deep green leaves, the lamina of which is ovate-elliptic in outline. The spathe is lanceolate-acuminate, and milk-white suffused with green on the margin and underside. The cylindrical obtuse spadix is of the same white colour, and adds greatly to the appearance of the plant. A specimen may be seen in the stove at Kew, and probably it is grown elsewhere under the name of S. commutatum. *J.*

Anemones.—No sooner is Anemone coronaria ripe and at rest than the tubers are at work again, for already borders where there are plants are green with their foliage, which had found its way through the soil before the rain, and has since grown at a great rate, so that soon we shall see a wealth of gay blossoms. Some indeed are showing already, and a few are open, thus giving an earnest of what they will be ere winter sets in, and along through the early months of the coming year, when they will be full of flower; for though frost may assail them the plants care not, as I have seen them stand unscathed with blossoms, fresh looking, peeping through the snow. The best for winter blooming are plants raised from seed sown in boxes or pans during March and got up under glass, which if pricked out in light rich soil and afterwards nursed on for a month, and then planted, grow fast all the summer and become very strong by the autumn, especially if mulched and kept watered through the hot weather. The system pursued by some of taking the tubers up is a bad one, as, however carefully they may be stored, they are sure to dry and shrivel, which shrinkage means loss of force and vigour, and when planted again they never start so well after. Knowing this, we always leave ours in the ground, and we are rewarded for this treatment by the condition we now see them in. Instead of keeping them long, however, it is better to treat them as annuals, and to sow and raise fresh plants every year, but, as referred to above, this must be done early, and the planting made in good soil. As Anemones of the coronaria type are fond of sunshine, those for first flowering should have a border sloping south, and the soil should be made light and rich by adding leaf-mould and well rotted manure. In the herbaceous garden just now nothing is more striking and showy than Anemone japonica, both varieties of which are in the finest of bloom, the soaking rain having just suited them, as the plants are lovers of moisture. Valuable as the normal form is, A. japonica alba, or Honorine Jobert, is even more so, the rich purity of its large white salver-shaped flowers and prominent disc, surrounded by golden anthers, making it quite a gem either for cutting to dress in vases or for ladies to wear. To grow these Anemones well they must have deep soil, with a good dressing of manure worked in where they are to be planted, the time for dividing and moving them being directly they go out of bloom, or early in spring, just as they start, when they may be separated with safety. *J. S.*

Single Dahlias and Bees.—I have read with much interest Mr. W. J. Murphy's note in your last issue. My bed of single Dahlias has been besieged by wild bees this season, and many of the insects have remained on the flowers in a stupefied state long after they have been gathered. But, although I have several stocks of the honey bee (Apis melifica) in the garden, I have never seen one of them on the flowers in the same stupid condition. *C. T.*

The Celery Maggot.—This troublesome pest has been very active in our neighbourhood, but our own plants have scarcely been touched with it, and I have no doubt that this immunity is due to the treatment the plants received. I find soot is an excellent deterrent, and this year I had the plants well dusted with it before they were pricked out from the seed-beds. After they were pricked out they were again dusted with the soot at least once a week, and were also followed up with it as soon as they were planted out in the trenches. If those who are troubled with the



Fig. 92.—The Celery Fly.

Celery-fly will try this plan, I have no hesitation in saying that they will be quite free from the maggot. The fly seems to detest the soot, as much as the Celery is improved by its fertilising properties. *J. Douglas.*

Begonia fuchsioides. — Notwithstanding the lateness of the season and the comparatively cheerless aspect of approaching winter and shortening days, this Begonia continues to thrive and flower with remarkable freedom. In the greenhouse at Kew, where some specimens have been planted out for years and trained around upright pillars, the whole is covered from the ground to the roof with abundant healthy foliage and a profusion of scarlet flowers. There is not the slightest appearance of that naked and leggy character that usually accompanies species of more rigid habit and bolder foliage. The elegantly drooping branches and pendulous cymes of flowers may not inaptly be compared to a Fuchsia, and the resemblance is more striking owing to the size and shape of the leaves. A figure of the plant appeared in the *Botanical Magazine*, t. 4281. *J.*

Mignonette.—Few plants are more prized during the winter and spring months than Mignonette, as, though it is not at all showy at any period of its growth or bloom, it exhales a most delicious perfume, which is liked by most people, and is acceptable at all times in a room. To have strong plants at the seasons named, seed should be sown at once; but before doing this it is necessary to prepare the pots by having them well drained, as though Mignonette requires a fair quantity of water, it is of the greatest importance that it passes freely through the ball, otherwise they soon suffer. To keep the crocks open, it is good plan, when preparing the pots, to scatter a little sphagnum or moss over them, and on that some soot, and then the rough soil, filling up with the remainder just as it comes, pressing it well down so as to make it firm and the surface smooth for sowing the seed. The pots should then be placed level and watered through a fine rose, and after standing a few hours the seed may be sown thinly and regularly and then slightly covered with sifted mould, when, if the pots are placed anywhere under cover of a frame and kept close for a few days, the young plants will soon be up and ready for thinning. This should be done by pulling out all the weakest and leaving the others at a regular distance apart, to the number of five or six in a 32-sized pot, which are quite enough when staked and tied out and grown to their proper dimensions. The best place for Mignonette, after winter sets in, is a light shelf, up near the glass, in a greenhouse, as there it gets plenty of air and does not become drawn, but makes stocky, short jointed plants, that send up fine spikes of bloom. To encourage and assist them in doing this they should have liquid-manure, the most suitable being that made from cow or sheep dung and soot, and allowed to stand in a tub or other vessel till clear, when, if not strong, it may be used frequently as the plants become dry. There are now so many robust kinds of Mignonette, that are just as sweet-scented as to make the well known old R. odorata comparatively worthless, for besides such sorts as R. pyramidalis grandiflora, and Miles' Hybrid Spiral, it is quite a weed, and must soon go out of date. In sowing, choice should therefore be made of those named, as they are sure to give satisfaction either for cutting or using in pots, as then they are not only large and fine, but strong and stiff in the stem. *J. S.*

Tuberous Begonias as Bedding Plants.—Since writing to you on this subject (*vide Gardeners' Chronicle*, Sept. 20) I have had several communications, in reference to which I shall, with your permission, conclude with one or two observations, but wish first to reply to "Fairplay," p. 438. He says until I have tried a more extensive list than the two illustrations, which I gave (p. 366) of Pinks—crimsons, scarlets, and reds—it is not fair to say B. Sedeni, Vesuvius, and Paul Masurel, are preferable to newer and improved varieties. There is a want of "fairplay" in this, in at least two respects. First, I did not speak of what I had myself tried, but what I had noticed in several private gardens; for instance, in that described by me in the last issue of your contemporary, *The Journal of Horticulture*, I named eight varieties which I had found, as I stated in my "Rambles through Private and Unpretentious Gardens," more generally grown than others for bedding out. "Fairplay," acting without consideration for that profession, selects the three, the worst, named above, and accuses me then of recommending them "in preference to newer and improved varieties." I advisedly named the eight varieties because, as I stated first, they were bright and showy; secondly, they were found to be extremely floriferous from May to October; and I may now add another reason—they are cheap and easily procured, which cannot be said for "newer and improved varieties" issued at prohibitive prices when large numbers are required. Take those recommended by "Fairplay"—Graham Bell, J. W. Ferrand, Sir H. Stanhope, Stanstead Rival, A. Lequin and J. Backhouse. When I first got J. W. Ferrand, as a "new" variety, it was 7*s.* 6*d.* Graham Bell at the beginning of the present season, as quoted by one of the largest growers in England, was half that, and Stanstead Rival the same, or correctly 3*s.* 6*d.*; the lowest of those named being 2*s.* 6*d.*, in the list referred to. Now in the garden you have permitted me to refer to above, there are twelve large Begonia beds say with fifty plants in each (600 in round numbers), which at the middle price quoted would cost upwards of 100 guineas. I am afraid even "Fairplay" would wince if he were handed such a bill. On the other hand would he have the magnificent and continuous display given by the old varieties I named? By all means get new and improved varieties, test them for a season or two outside; it brilliant, of good habit, and floriferous, propagate them; but in the meantime grow the old until they can be dispensed with. In regard to my stricture as to white not being suitable for bedding out one of the largest growers in Ireland, Mr. Saunders, of Cork, writes to say he thinks Alba floribunda would make a good bedding white. *W. J. Murphy, Clonmel.*

Lilium colchicum.—Two or three notes have appeared about this Lily, complaining that its increase is very slow. The best and easiest way to increase it is from seed, which it ripens in abundance, and from which flowering plants may be obtained in three or four years. I sow the seed in a large box in common soil, which I never allow to get dry. Nothing will appear above-ground for a year, but the seed sprouts and forms little bulbs under-ground. At the end of two years these are fit to plant out, and if liberally treated some will flower the third year. No Lily is

more easily managed, as it is very hardy, and requires no care when once planted in the border. It decidedly prefers strong soil. Some I planted three years ago in one of my stiffest borders, mixing bone-dust with the clay, and surrounding the bulbs with coarse sand, this year produced stout stalks 7 feet high, with from twenty-five to twelve flowers on each stalk, but no bulb has yet produced two stalks. *C. Wolley Dod, Edge Hall, Oct.* 13.

Gladiolus The Bride.—I wonder why "J. S." doubts the practicality of my remarks respecting the season for planting this charming bulb. Has he tried autumn planting under varying conditions as regards soil, position, and latitude with bad results? If so, it would have been better to have stated the question fully rather than to have left it an open one, as he has done in last week's *Gardeners' Chronicle*, p. 471. It was no assumption on my part, based upon the experience of last winter, when I gave the advice to plant in October, as my experience with the plant has extended over five or six years in very different positions as regards soil and temperature, and I have proved beyond question that the best results have been obtained from autumn planting for outside culture. Of course I do not doubt the value of "J. S.'s" remarks as regards pot culture, and my own might have been qualified, perhaps, with advantage in the case of very wet cold soils; but generally speaking, if it is intended to grow the corms outside it is a decided advantage to plant this month. Upon examination of some corms which have not been disturbed this year, I find they are rooting freely and the fresh shoots are from 1 to 2 inches long. "J. S." must remember that it is the albino form of a first hybrid between C. concolor and C. cardinalis, the latter being the male parent, and that species is very hardy. I may say that I know of clumps of Gladiolus The Bride which were planted four years since in the open ground, and have never received any protection, and during the last summer they were charming; they were planted as single corms, and now there are from twenty to twenty-five corms to each clump. *R.*

ORCHIDS AT SILVERDALE LODGE, SYDENHAM.

The Orchids in the garden belonging to Walter Cobb, Esq., at this place, are always worthy of a visit, not because there is a great wealth of bloom at this season of the year, but because many of the specimens which are not in bloom are interesting because of their rarity, combined with the capital condition in which they are always to be found. Here, for instance, is a magnificent specimen of Cymbidium Lowianum, which has been exhibited four years in succession; last year it had four flower-spikes, this year there are seven showing. A very stout specimen of Vanda Sanderiana is showing a flower-spike. At present this species is rather erratic in its time of flowering; so, for that part, is V. tricolor and its varieties. These are flowering all the year round, and it is possible that the new Vanda may have this characteristic. One seldom sees Dendrobium Bensoniæ making such vigorous growths as they are doing here. I measured some over 18 inches in length.

Mr. Catt, the gardener, has at last mastered the culture of Phaius tuberculosus; there are a few plants in fine healthy condition, the strongest of them showing bloom. Amongst Orchids in bloom a variety of Epidendrum dichroum is a pretty little thing. It has been reintroduced again since it was first sent from Brazil, in 1843. The flowers are pale purple, with a deep purple lip. A large specimen of Oncidium incurvum was very attractive; it is one of the most useful Orchids for flowering at this season. O. varicosum has become well established; its long spikes of yellow flowers are very attractive. The best plants had been in the same baskets for four years, and had lost none of their vigour. Vanda cœrulea is beautifully in flower; there are many spikes, and though all the flowers are of that delicate pale blue colour, all are different in form and shade. Pleione Reichenbachiana, also in flower, is very pretty in its way; the flowers are pale rosy-lilac, and distinct from any of the other species.

Two or three varieties of the Cattleya marginata type were in flower, some of them very pretty indeed. These very small-growing Cattleyas and Lælias seem to do best in baskets or pans suspended close to the roof-glass. They need but little potting-stuff to grow into, as the roots seem to cling to the woodwork of the baskets in preference to growing into the potting-stuff. *D.*

FRUIT NOTES.

Gros Maroc Grape.—Verily, as "A." says, it is a long time that this fine Grape has lain, like lamp-black in an artist's studio, almost unnoticed. There is not a Vine more easy of cultivation or less affected by Vine ailments. The first time I saw it was at Sawbridgeworth, about ten years ago, in a ground vinery, where it was evidently at home. The Burghley variety certainly has the most intense bloom that any Grape can assume, but those from other gardens are very little inferior in this respect. That there are two varieties is extremely improbable. The variations are caused by different modes of cultivation, or other well-known causes of divergency. Your correspondent, Mr. Sheppard, can bear me out in saying that for a back wall of a vinery Gros Maroc is unequalled, for it sets, colours, and ripens as well as can be desired in this position. With us it was a small and loose bunch, but at Hutton Hall, under Mr. MacIndoe's care, the bunch is large, finely shouldered, with large round berries. The temptation was strong to say that I had got hold of a different variety of the same Grape. Grapes grown from eyes from Burghley, however, bear the same intense bloom elsewhere as they do there. Mr. Johnstone, of Glamis, grows it under the name of Cosford Black. *C. A. M. Carmichael.*

Fruit in Warwickshire.—It is rather singular that that fine sort, Blenheim Pippin Apple, should generally be a very fair crop this year in this part of Warwickshire when so many others have failed to bear, or at best only a sprinkling. On all of the Kenilworth Castle farms here we have a fine crop in old orchards, and the fruits are unexceptionably fine and well-coloured—indeed, I never remember to have seen them such a brilliant red as many of them are this year. On one of our farms some of the wild Crabs have been grafted with Blenheim Orange, and they have made good growth in the hedgerows where they stand. I gathered from 4 to 8 "pots" of fruit off some of them, which appear of higher colour than those off trees in the orchard. Of other sorts, such as Hanwell Souring, of which sort there are many grown in this locality, there is next to none. Last year, on one of the large trees of this sort in the Castle garden, 16 "pots" were gathered. Wyken Pippin is also a great favourite; in fact, the first question the Apple-dealers ask when they come to buy is, "Have you any Wyken Pippin and Blenheim Orange?" Of these kinds there is a fair crop. Temple's Pippin is a good local Apple, of which there are some very old trees about Kenilworth. We have a good crop of Northern Greening in most of the farm orchards. *Joseph Murdoch, Kenilworth.*

Seedling Crabs.—A new variety is a most beautiful object on the tree, a very free fruiter in all seasons, and bears its fruit in clusters, which are a beautiful colour, and almost look as if varnished. The foliage also is very distinct, particularly in a young state, and the habit of the tree is of a fine pyramidal growth. A seedling from the old Scarlet Crab, raised by Mr. Edward Holmes, of Whittington Nursery, near Lichfield, and not as yet in commerce.

Fruit Trees for Autumn Planting.—The time for planting is at hand. A wise old gardener recommended amateur cultivators to visit a nursery in person and see their trees lifted in a proper manner; and he gave this further piece of useful advice:—"Old trees which have been frequently cut down should not be accepted for planting though offered gratis. Choose young healthy plants of even growth, clean bark, free from old wounds or snags." We will add to this, choose also good useful sorts, and see that they have plenty of strong fibrous roots near the surface. In these days amateur fruit cultivators are preferring to plant bush or pyramid trees of Apples on the English Paradise stock. In making a selection, if experience fails to enable the planter to make a suitable selection, he should obtain some neighbouring and friendly advice, which is seldom withheld. The varieties should be of hardy constitution, and good general croppers. They should be successional also. This also applies to Pears and Plums. Most fruit trees of this character do well in ordinary garden soil, with some fresh turfy loam mixed with it. If there is a danger of the tap-root of the trees going down into a deep fertile subsoil below, a little concrete might be used to prevent this; but it is not often necessary, and in planting the trees it is best to dig out the soil to the necessary depth, tread the bottom a little firmly, and then spread the roots over the surface after previously cutting away any that are over-long or damaged. Fibrous roots, that will take a ready hold upon the soil, are what is wanted; and trees furnished with these, if properly planted, can hardly fail to do well. It is well to mulch all newly planted trees when frosty weather is likely to ensue, and care is necessary that by being swayed about by autumnal winds they are not rendered loose at the roots.

Reports of Societies.

Royal Horticultural: *October* 14, 15, 16 *and* 17.—The fine collection of hardy and tender fruits, held in the conservatory at South Kensington, was a worthy continuation to that held in the Crystal Palace during four days of the previous week, it was likewise as interesting to the general public, who thronged to see what is to many of them a great treat, inasmuch as some beautiful autumn flowers and hothouse plants added greatly to its attractiveness. The collections of vegetables, too, if they did not consist of so many kinds as was noticed at the other place, were more numerous, as well as being of the best quality for the season.

The Fruit Show.—For the best collection of Pears, Messrs. T. Rivers & Sons, Sawbridgeworth, were awarded the 1st and only prize—in which most were fair samples, but containing nothing of very great merit.

Fruit Committee.—Harry Veitch, Esq., in the chair. Present: Messrs. G. Goldsmith, Arthur Sutton, C. Ross, J. Ellam, J. C. Lane, J. Burnett, P. Crawley, G. Rutland, W. Paul, C. Silverlock, S. Ford, G. Bunyard, R. D. Blackmore, and G. Breeze.

Pears.—For the best fifty dishes of Pears, five fruits of each.—1st, Mr. C. Haycock, gr. to R. Leigh, Esq., Barham Court, Maidstone, a splendid collection, his Passe Crassane, Emilie Heyst, Doyenné d'Alençon, Fondante de Pavisit, Prince Napoleon, and Vineuse being of fine appearance and remarkably well done. A near 2d was Mr. G. Goldsmith, gr., Hollanden Park, who had wonderful Duchesse de Bordeaux, Rateau Gris, Madame Treyve, and Inconnu. 3d, Mr. Waterman, gr. to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford. For the best twelve dishes of five each.—1st, Mr. C. Haycock, the Beurré Clairgeau, B. Superfin, B. Diel, B. Hardy, B. d'Alençon, Gen. Todtleben, and Pitmaston Duchess, being first-rate specimens. 2d, Mr. Rutland, gr. to His Grace the Duke of Richmond, Goodwood, who had very fine Chaumontelle, Easter Beurré, Durondeau, and Duchesses; 3d, Mr. Goldsmith. For six dishes of five fruits each.—1st, Mr. C. Haycock; 2d, Mr. W. Johnstone, gr. to the Marchioness of Camden, Bayham Abbey, Kent, who had several very fine dishes; 3d, Mr. Goldsmith, in whose lot the sorts Nouveau Poiteau and Doyenné Boussoch were especially good. For three dishes.—1st, Mr. Haycock; 2d, Mr. Goldsmith and Mr. W. Johnstone—no 3d being given. For the highest flavoured Pear.—1st, Mr. C. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, with the Seckle; 2d, Mr. W. Johnstone, with Gansel's Bergamotte; 3d, Mr. C. Haycock, with Beurré Superfin. The same gardener received the 1st prize for Pear Pitmaston Duchesse, certificated by the Royal Horticultural Society. The prize-winners in the class for three varieties of stewing Pears were—1st, Mr. C. Haycock; 2d, Mr. Rutland; 3d, Mr. W. Johnstone; the sorts shown being Uvedale's St. Germain, Catillac, Grosse Calabasse, Bellisime d'Hiver.

Apples.—The best Apples of the Blenheim Orange Pippin variety were shown by Mr. Walker, Thame, 1st; Mr. W. Ford, gr. to W. E. Hubbard, Leonard's Lodge, Horsham, 2d; Mr. G. Goldsmith 3d. All the fruits were of a high colour, but of varied dimensions, twenty-one dishes being shown. For the best dish of Cox's Orange Pippin the winners were respectively, Mr. C. Haycock 1st, Mr. A. Waterman 2d, Mr. G. Goldsmith 3d. Dishes shown, twenty-two. Of King of the Pippins twenty-three dishes were shown, the winners being Mr. F. Miller, gr. to J. T. Friend, Northdown, Margate, 1st; Mr. Rutland 2d, Mr. G. Goldsmith 3d. For the best Mère de Ménage.—1st, Mr. C. Ross; 2d, Mr. Walker; 3d, Mr. C. Haycock. There were eight dishes shown that were all fine in colour, if some were deficient in size for culinary fruit. Good specimens of Golden Noble and Waltham Abbey seed-

ling were shown, there being seventeen dishes altogether put up. Mr. Miller, Northdown, was 1st with Golden Noble; Mr. J. Gilmour, gr. to the Right Hon. G. J. Goschen, Seacox Heath, Hawkhurst, was 2d, with Waltham Abbey Seedling; Mr. G. T. Miles, of Wycombe Abbey Gardens, was 3d. Mr. Goldsmith received a Commendation for his dish of Golden Noble. Some small lots of Court of Wick, Old Golden Pippin, were seen, but they call for no particular mention. Mr. Haycock took the 1st prize for Peasgood's Nonsuch; Mr. C. Friend, the 2d for Loddington's Seedling; and Messrs. Lane & Son, Berkhamsted, the 3d, with Prince Albert, in the class for Apples of recent date, certificated by the Royal Horticultural Society. Commended were also Mr. C. Ross for Peasgood's Nonsuch, and Messrs. Saltmarsh & Co., Chelmsford, for the Queen, a pretty rosy striped carmine fruit.

Plums.—Fifteen dishes of Plums were exhibited, consisting mostly of Coe's Golden Drop, the winners of the three prizes being—1st, Mr. J. Staples, Chipstead Gardens; 2d, Mr. Haycock; 3d, Mr. J. Bolton, Combe Bank, Sevenoaks.

Peaches were not seen in any great numbers, and for the best dish of six fruits—1st, Mr. Rutland, with Salway; 2d, Mr. Staples; 3d, Mr. E. Chadwick, Hanger Hill House, Ealing, with Walburton and Late Admirable.

Some few samples of Grapes from the open air were shown, but they were small, and had evidently been grown without sufficient nutriment, as the appearance in almost all cases showed poverty of soil.

Several lots of Crabs were exhibited, viz., the Dartmouth, a deep crimson, large fruited; the Siberian, &c.—about a dozen dishes in all. The London and Provincial Dairy Supply Association sent for exhibition twenty-four dishes of Apples; and Messrs. Paul & Son, The Old Nurseries, Cheshunt, seventy-one dishes; Messrs. Cheal & Son a hundred dishes, chiefly from trees grown in the cordon fashion, also sixteen dishes of Pears, many of them being remarkable for size, colour, and freedom from blemishes. Messrs. G. Bunyard & Co., Maidstone, had sixty-three dishes of leading kinds of Apples, among them being fine Alexander, Pomona, Cellini, Worcester Pearmain, King of the Pippins, and Queen Caroline. Messrs. J. Veitch & Sons, Chelsea, had ninety-eight dishes of Apples grown on the light land of their Fulham nursery, many of which were remarkable for their size, and the collection generally for great excellence. The Sandringham Apple, certificated in 1883, also came from these nurseries.

Miscellaneous Exhibits. — Mr. J. Sanderson, gr. to H. D. Pochin, Esq., Bodnant Hall, Denbighshire, showed three capital bunches of Black Hamburgh Grapes, and six of Muscats, the latter having been of great merit, but were getting overripe. Mr. B. S. Williams showed black Grape Winter King, with immense berries and massive bunch, showing much resemblance to Gros Colmar as far as size, colour, and form of berry go. Mr. McLaren, Ash, Aldershot, showed a green-coloured culinary Apple called Sir Roger. Colonel Turberville, Ewenny Priory, Bridgend, South Wales, exhibited twelve fruits of Duchesse d'Angoulême Pear, possessing a weight of 11 lb. 6 oz. Mr. R. Dean, Ranelagh Road, showed a large yellow-fruited Tomato, Prince of Orange, that is a novelty amongst these popular fruits. A large crimson variety came from Mr. Phillips, The Deodars, Meopham, Kent—it was named Perfection, a not very precise or distinctive term for it. Mr. W. Bull showed a large Plum from Japan, purplish-red outside, with yellow flesh. It had been named Kelsey's Japan Plum. From Messrs. Dickson & Sons, Newtownards, Belfast, came an Apple named Loggan's Seedling, and a variety not known. Mr. G. T. Miles showed Wycombe Abbey Seedling Tomato, and Mr. J. P. Kendall, gr. to H. L. Holland, Esq., Templeton, Roehampton, six varieties of Melons. From the Welford Park Gardens there came two fine Pine-apples weighing each rather more than 8 lb., and six Queen Pine-apples from Mr. J. Harris, Singleton. From J. N. Hibberts, Esq., Chalfont Park (gr., Mr. C. Herrin), a large and miscellaneous collection of Melons were sent. Mr. W. Johnstone, Bayham, contributed a large quantity of Rivers' late Plum, the bloom on them being perfection, and a sample of the Blue Impératrice Plum came from Mr. J. May, gr. to Captain Le Blanc, Northam House, Barnet, Princess of Wales Peach, Victoria Nectarines. Mr. Walker, Thame, sent home-grown Oranges and Lemons, securing the 2d prize.

Floral Committee: *Section A.*—J. Fraser, Esq., in the chair. Present: Messrs. Kinghorn, Laing, Herbst, Woodbridge, Hudson, Dominy, Hill, O'Brien, and Dr. Masters. The subjects brought before this division were not numerous; among the principal were Dendrobium Phalænopsis, an Australian species, with flowers in racemes, the sepals and petals lanceolate, pale lilac; the petals ovate acute, deeper lilac, and a three-lobed lip, the two side lobes erect, roundish, deep purple, the central one acute, and lighter in colour. A First-class Certificate was awarded for it to Messrs. Veitch. The same firm secured a similar award for a very interesting hybrid Sarracenia called S. Wrigleyana ×, a hybrid between S. psittacina and S. Drummondi, and curiously intermediate between the two. In size and form the pitchers are intermediate between the two parents; the pitchers are erect, reddish-purple, with a white network. Mr. Humphreys, gr., Nash Court, Faversham, sent flowers of his fine variety of Lapageria rosea superba, which the committee recommended should be propagated by layers, so as to ensure its perpetuity. A First-class Certificate was awarded. Messrs. Bunyard, of Maidstone, received a Vote of Thanks for handsome sprays of Dimorphanthus mandschuricus *alias* Aralia sinensis, a very striking hardy Araliaceous shrub. To Messrs. May, of Edmonton, a First-class Certificate was awarded for Pteris serrulata cristata compacta. A Vote of Thanks was assigned to Mr. Vanner, of Chislehurst, for his fine variety of Phalænopsis Sanderiana. Mr. B. S. Williams showed a golden variegated leaved variety of Corynocarpus lævigatus, and to the same gentleman was adjudged a Botanical Certificate to Cyrtanthus lutescens which appeared to be identical with C. Mackennii. For fine specimens of Garrya elliptica in fruit, lately figured by us, Mr Pochin was awarded a Vote of Thanks. Mr. Sheppard, of Woolverston, sent Croton Sheppardi, a form with narrow lanceolate leaves, green, heavily spotted and bordered with yellow, and short red stalks, but considered too like other forms to require separate recognition.

Section B.: Shirley Hibberd, Esq., in the chair. Present: Messrs. H. Turner, Cannell, H. Bennett, J. James, G. W. Wilson, J. Child, G. Duffield, W. B. Killick, J. Douglas.—Mr. G. Wormig, florist, Woking, had a fine decorative yellow Chrysanthemum, a sport from Madame Desgranges, that met with the recognition of the Floral Committee. Mr. J. Wiggins, gr. to W. Clay, Esq., Grove Road, Kingston, had some pretty Cyclamens with marbled markings on the leaves, as well as an early flowering kind, named Crown Prince. From Messrs) Cheal & Son came a box containing bunches of various shrubs and trees with coloured foliage or with bloom, illustrating their value in gardens at this period of the year. These were Catalpa aurea, Golden Elder, Cornus sibirica variegata, Althæa frutex in bloom, Weigela Lavallei, also in flower; Leycesteria formosissima, Ligustrum ovalifolium variegatum, Hypericum oblongifolium, Weigela nana variegata and W. Van Houttii, Hydrangea paniculata grandiflora, Spiræa Lindleyana, Potentilla fruticosa, Spiræa Fortunei, Rosa rugosa in berry, variegated Snowberry, Prunus Pissardi, and others. Mr. W. Bealby showed a pretty double rosette Begonia named Felix Crousse, of dwarf habit and upright flower-stems. Some plumose Celosias came from Mrs. Adams, Ashton-on-Mersey (gr., Mr. H. Beard), that helped to show what a valuable plant this is for late autumn decoration in the intermediate-house, or where it is not damp or cold. Messrs. Cannell & Sons showed a crimson Begonia, King of Kings—a fine flower; a very showy pink-flowered Begonia Martiana, a variety of B. diversiflora, exceedingly useful also at this season; and showy kinds of winter-blooming Pelargoniums, just now beginning to open. The names are new, but the colours are of necessity not new; they have good pips and are regularly formed. Mr. Ward, of Bishop Stortford, showed samples, fixed in position, of his earthenware Grape troughs.

The awards made were :—

Section A.

First-class Certificates.

To Messrs. J. Veitch & Sons, for Dendrobium Phalænopsis.

To Messrs. J. Veitch & Sons, for Sarracenia Wrigleyana ×.

To Mr. Humphreys, for Lapageria rosea superba.

To Messrs. May, for Pteris serrulata cristata compacta.

Botanical Certificate.

To Mr. B. S. Willams, for Cyrtanthus lutescens.

Section B.

First-class Certificates.

To Messrs. Cannell & Sons, for pompon Dahlia Emilie Heincker.

To Messrs. Cannell & Sons, for Dahlia La Petite Barbiere.

To Messrs. Cannell & Sons, for Begonia King of Kings.

To Mr. W. Bealby, for double Begonia Felix Crousse.

To Mr. G. Wormig, for Chrysanthemum, a yellow sport from Madame Desgranges.

Dahlias.—It was something in the way of a surprise, after having experienced so much stormy weather, to see a display of Dahlias at South Kensington so late as October 14. They were not in such good condition as ws are accustomed to see them in September, but they were certainly very attractive, and added greatly to the interest of the meeting. The most important exhibit was that from Messrs. Rawlings Bros., Romford, which contained besides a large assortment of named varieties, a goodly number of seedlings, some of which at least will take a foremost place when they are cultivated by the best growers. As they were exhibited, perhaps the best of them was T. S. Saltmarsh, yellow, shaded and edged with red, good petals, fine form, and quite distinct. William Dodds, quite new in colour, deep crimson, with a paler shade at the edge; flowers of large size and good form. Harry Turner, deep purplish-maroon, almost sparkling in its rich colour. Mrs. Henry Glasscock, pure white, a finely-formed flower, and a good addition to a class that contains such an exquisite flower as Mrs. Henshaw. Mrs. Kendall, bluish-white, edged with bright lilac, large and fine form. Henry Eck ford, yellow, flaked and striped with bright scarlet; a good fancy kind. Charles Turner, buff ground, striped and spotted maroon; flowers large and of good form. W. G. Grace, pale purple ground colour, heavily striped and spotted with maroon-purple. Messrs. Rawlings seem to have made a good hit with their seedlings this year, for besides the above they have Mrs. Douglas, a fine scarlet, recently certificated; and Mrs. Carter, by far the best of the type, with white ground and maroon tips to the petals. The whole of these seedlings have passed into the hands of Mr. Charles Turner, of Slough, and most of them will be sent out next May. Besides the new flowers there were some good examples of the best of the old-established sorts, such as George Barnes, Mrs. Saunders, Gaiety, J. B. M. Camm, and Hugh Austin in fancies. Of selfs the best were Mr. G. Harris, a fine scarlet self; Miss Cannell, James Vick, James Cocker, Earl of Ravensworth, distinct fawn colour; William Rawlings, George Rawlings, Prince of Denmark, John Standish, Claudian, Royal Queen, John Henshaw. From W. Keith, Esq., Cornwallis, Brentwood, came an excellent stand of twenty-four, the most prominent bloom being a fine one of Walter H. Williams, rich scarlet; George Harris, fine; William Rawlings, Mrs. Dodds, Ethel Britton, and Joseph Surface; also some beautiful bunches of bouquet kinds. Messrs. Cheal & Sons, Crawley, Sussex, exhibited some nice bunches of pompons and single varieties, some of the latter being very bright in colour. The best of them were Juno, lilac striped; Alba Perfecta, Yellow Boy, Brutus, crimson; Paragon, Union Jack, striped; Cameo, rosy-lilac, very pretty.

Not the least attractive part of Messrs. Cannell's exhibit was a collection of new pompon Dahlias of Continental origin. Two varieties obtained First-class Certificates. The best of the two was Frau Emil Heinicke, a very pretty kind, with distinct rose-coloured flowers; La Petite Barbiere, also a charming kind, with pure white flowers, formed like those of Lady Blanche, but smaller. The best of the others were Gruss aus Leipzig, crimson-scarlet, fine; Zelanina, buff, very pretty; Charles Huber, crimson; and Liebes Medallion, rosy-purple.

Votes of Thanks.

To Mrs. Adams, for Celosia plumosa.

To Messrs. Cannell & Sons, for Leonotis Leonurus.

To Messrs. Cannell & Sons, for Begonia Martiana.

To Messrs. Rawlings Bros., for a collection of Dahlias.

To Messrs. Collins Bros. & Gabriel, for Lilium auratum bulbs of home growth.

To Mr. R. Dean, for Tomato Prince of Orange.

To Mr. G. T. Miles, for seedling Tomato Prince of Orange.

To Mr. G. Hawkins, for Pears Duchesse d'Angoulême.

To Mr. R. Phillips, for Tomato seedling.

To Mr. J. Sanderson, for Grapes.

Vegetables.—The truly liberal prizes offered in the schedule for eight kinds of vegetables brought eight collections, and, as should be the case with such good encouragement, the quality was of the best; indeed we think the two highest prize lots could hardly have been excelled. Mr. Miles, Wycombe Abbey Gardens, and Mr. Haines, Coleshill, Berks, occupied on this occasion the same positions as they did at the previous exhibition in contesting a similar class, and both deserve to rank amongst the foremost exhibitors of the day. Mr. Miles came 1st with a grand dish of Stamfordian Tomato, five beautiful Tender and True Cucumbers, young and handsome Canadian Wonder Beans, superb Pinesfield Onions, fine and clean James' Intermediate Carrots, pretty Lady Paget Lapstone Potatos, rather large Veitch's Exhibition Brussels Sprouts, and a singularly good dish of Allen's Champion Peas. Mr. Haines was 2d with good Stamfordian Tomatos, fine Autumn Giant Cauliflowers, very fine Clarke's Red Celery, and equally good Improved White Spanish Onions, handsome Champion Runner Beans, good Brussels Sprouts, Tender and True Cucumbers, and grand Schoolmaster Potato. Mr. Phillips, gr. to Dr. Baber, The Deodars, Meopham, was 3d, having fine Student Parsnips, Long Surrey Carrots, and very handsome Perfection Tomatos, &c. One competitor had put up as a novel vegetable a dish of white fruits of the Egg-plant, very pretty and effective, but they failed to

secure the judges' approbation. Having regard to the average good quality of the collections, we should like to have seen the £13 given in three prizes distributed into six at least, and thus have done greater justice.

Potatos formed on this occasion a very important and interesting feature in the show, and loud were the expressions of surprise and admiration given utterance to by the myriads of visitors. A class for fifty kinds necessarily brought a limited competition, only three collections being staged. Mr. W. Kerr, Potato Grounds, Dumfries, a noted Scotch grower, and since the withdrawal of Mr. Porter from competition in Potatos, the leading grower of the North, was 1st, with a lot of fine clean samples, including King Offa, Covent Garden Perfection, Woodstock Kidney, Duke of Albany, and Magnum Bonum —white kidneys; Red Fluke, Defiance, Mr. Bresee, Prizetaker — coloured kidneys; Brownell's Best, Mammoth Pearl, King Noble, and Bedfont Prolific — white rounds; and Vicar of Laleham, Grampian, Fifties, Annie, and Matchless—coloured rounds. Mr. R. Dean, Ealing, was 2d, with a fine collection, hardly less bright and good, including many of the Bedfont raised kinds. Mr. C. Osman, the South Metropolitan Schools, Sutton, was 3d, his samples being large, but rather rough. The classes which followed were arranged specially to include variety in the exhibits, and hence garden sorts would be put up pretty much as their fitness for garden culture impressed the exhibitor. In this class Mr. R. Dean, who had reserved his strength for this show, was 1st, with a very neat and well selected lot, including Ashleaf, Lapstone, Cosmopolitan, Snowflake, Snowdrop, and Woodstock—white kidneys; Beauty of Hebron, Reading Russet, Radstock Beauty, Vicar of Laleham, and Matchless—coloured kinds; and Sunrise, white round. Mr. J. Hughes, Eydon Hall Gardens, Byfield, who evidently had not sent his best tubers, was 2d, having Edgcote Purple, The Dean, Reading Russet, Cardinal, Prizetaker, and Red Emperor—coloured kinds; and Porter's Excelsior, Myatt's Ashleaf, Edgcote Seedling, Snowdrop, Sutton's Favourite, and Early Regent—white kinds. Mr. Kerr, who was 3d, put up Myatt's Ashleaf, King Offa, Woodstock Kidney, Brownell's Best, Early Regent, Eclipse, Fillbasket, Reading Russet Adirondack, Beauty of Hebron, Defiance, and Grampian. Next came a class for twelve field kinds; and here Mr. Dean was again 1st, having fine samples of Cosmopolitan, Snowdrop, Reading Hero, Woodstock Kidney, Magnum Bonum, Chancellor, Schoolmaster, Beauty of Hebron, Adirondack, Vicar of Laleham, The Dean, and Reading Russet. Mr. Howard, Bridge, near Canterbury, was 2d with a fine lot of rough-skinned tubers; his field selection was Woodstock Kidney, Cosmopolitan, Vermont Champion, Schoolmaster, Mr. Bresee, Vicar of Laleham, Earliest of All, Beauty of Hebron, Red Fluke, Beauty of Kent, Queen of the Valley, and Adirondack. Mr. Kerr was 3d, his collection including White Elephant, Clarke's Maincrop, Magnum Bonum, The Dean, Striped Don. The class for twelve kinds of late varieties naturally brought representatives of many of the field kinds, as will be seen. Mr. Dean again took 1st place here, having very fine samples of Prime Minister, Chancellor, Magnum Bonum, Schoolmaster, Reading Hero, Bedfont Rose, The Dean, Beauty of Kent, Mr. Bresee, Vicar of Laleham, Manhattan, and White Giant; Mr. Kerr came 2d, with King Offa, Peerless, Purple King, Defiance, Covent Garden Perfection, Reading Russet, Adirondack, Scammel's Glory, and others; Mr. C. F. Pragnall, Kensington and Chelsea Schools, Banstead, was 3d, his samples being rather rough. A class for American kinds, showing pedigrees or parentage, could hardly attract competition here. Mr. Kerr put up eleven kinds, all handsome samples, but owing to the lack of information as to pedigrees the prize was withheld. A similar class for English raised kinds, also giving pedigrees, proved a good thing for Mr. Dean, who showed a fine collection of twenty-seven sorts, the greater portion of his own raising. These included Chancellor, Cosmopolitan, Lord Mayor, Standwell, President, Recorder, Sunrise, London Hero, and Alderman—white kinds; The Dean, Bedfont Rose, Rosebud, Cardinal, and Rufus—coloured kinds; also Reading Russet, Prizetaker, and International, of Mr. Fenn's kinds. Vicar of Laleham (Peake), Edgcote Purple (Wills); and of Mr. Lye's raising, Clyffe Hall, Perfection, Progress, Wiltshire Giant, and Pride of Clyffe. Mr. Ross, Welford Park Gardens, Newbury, was the only other exhibitor, having fifteen kinds of his own raising, including M.P., Miss Fowler, Victory, Productive, and Robert Fenn, all strongly marked with the parentage of Woodstock Kidney.

Scottish Horticultural Association. — The seventh ordinary monthly meeting of this Society was held on Tuesday, October 7, at 5, St. Andrew Square, Edinburgh—Mr. Todd in the chair. A paper was read by Mr. Gordon, Royal Botanic Garden, on the "Claims of Sylviculture." Defining sylviculture, as distinguished from arboriculture, as the growing of trees on a purely economic footing, he remarked that this had languished because the coalfields had supplied us with fuel, while foreign forests had supplied us with timber. Now, however, that natural forests were disappearing from foreign countries, the claims of sylviculture were beginning to assert themselves. Speaking of its claims as a national industry, he said it was not meant that it should be bolstered up by the State, and controlled exclusively by the State. What was wanted from the State was money on favourable terms and reasonable security. British enterprise might safely be left to manage the rest. The State was not beyond suspicion of becoming a monopolist; and it was better employed in directing all the branches of a nation's industry than in pursuing any branch that could be left to individual enterprise. As the causes that had repelled capital from this industry were rapidly disappearing, the sooner it settled down to its proper work the better; for a dearth of timber would certainly be experienced by men now living. We had in the United Kingdom in a raw state all the materials necessary to construct a thorough-going sylviculture. We had foresters who were faithful, energetic, fairly intelligent, and anxious to be better instructed; and we had acquired during the last half century, along with others that seemed worthless, many species of exotic trees that were full of promise, and the knowledge of these and their culture was daily increasing. With regard to forestry education, that question was some years ago committed to the Council of the Arboricultural Society; but having had a share of the responsibilities of that Council for two years, and attended all its meetings, he was prepared to assure them that the question of education had not once been before them. Why, he asked, this delay—this tampering with so important a question? The question of education was not the most important question for foresters in Scotland. The Scottish forester was one who had to manage woods subject to the wishes of his employer. This meant a good deal that could never be placed in the prospectus of a school of forestry. Foresters, knowing this, had had no motive for pressing forward the educational question; and he submitted that forestry must become prosperous by industry before it became elegant by prosperity. They were at present under invitation to attend a Forestry Congress. He had for long believed that some such thing was necessary; but this had come somewhat suddenly; it struck him, and would no doubt strike others, as thunder from a cloudless sky. He did not know what subjects were chosen for discussion, but he earnestly wished that the subjects dealt with should be those by which forestry was cabined, cribbed and confined.—In a discussion which followed the reading of the paper, Mr. Fraser thought there was at present a disposition to make too much of education in connection with foresters. He held that the education of foresters was similar to that of gardeners, and that, with the appliances of the present day and the cheapness of all kinds of literature a studious young man could educate himself. Let him read, let him think: give him an axe in his hand, and let him go into the woods and study Nature for himself. He did not see any necessity for a school of forestry at all. He went on to question the likelihood of sylviculture being taken up by landlords as a patriotic matter, and said he should require more proof than Mr. Gordon had given that timber was getting such a scarce commodity.—Mr. Mackenzie said that while some kinds of foreign timber were getting very scarce, still timber could be bought cheap. He thought it unlikely that British growers could compete, unless foreign timber got so exhausted that the price should be very considerably increased; and he did not see much appearance of that in the meantime. — Mr. Morrison was of opinion that no man could get too much education, whether a forester or any one else; and the Chairman urged the importance of having our foresters thoroughly educated if they were to hold their own with those of other nations. A vote of thanks was accorded to Mr. Gordon for his paper.

The following flowers, fruit, and vegetables were exhibited:—By Mr. E. Holmes, Whittington Nurseries, near Litchfield, a new Crab, which was awarded a First-class Certificate. Mr. T. S. Ware, Tottenham, London, showed a select collection of cut herbaceous flowers. Mr. Chapman, Easter Duddingston Lodge, showed cut branches of Collettia spinosa in flower, and other hardy flowers. Mr. John Owens Foulden, Berwick-on-Tweed, showed a new seedling Potato named Rufus.—Mr. R. Munro, Abercorn Nursery, Piershill, Mid-Lothian, exhibited a collection of hardy autumn flowers, which included sixteen varieties of early flowering Chrysanthemums, twelve species of herbaceous Asters, and other cut flowers. A vote of thanks was awarded to the exhibitors.

A BRITISH ASSOCIATE ON HIS TRAVELS.

(*Continued from p.* 428.)

I HAVE already spoken of the general aspect of the flora of the eastern side of America as it strikes a botanist coming from Europe. As you advance from Lake Superior across the prairies, these familiar friends gradually disappear, though it is strange to see some still holding their place—and these are evidently native—to the base or even on to the slopes of the Rockies: among these are Achillæa Millefolium and Campanula rotundifolia. The middle of September is not the time of the year to see the flora of the prairies in its beauty, but even now there is sufficient of interest for the European visitor. One feature that cannot fail to strike the most casual observer is the extraordinary wealth of Compositæ; and he must be a born systematist who could in a short time master the distinctions and the relationships of the numerous species of Aster, Solidago, Erigeron, and Helianthus, not to mention several other less familiar genera, many of the species being of very great beauty. Among plants belonging to other natural orders still found in flower may be mentioned the dwarf Malvastrum coccineum, which in the spring stars the grass with its crimson flowers, the yellow Linum rigidum, the "Prairie Clover," Petalostemon violaceum, so unlike a Leguminous plant in its general aspect; Rosa blanda, Gaura coccinea, the white Œnothera albicaulis, the Prairie Cactus, Maxillaria vivipara, Aralia hispida fringing the track-side with its dangerous hispid stems, Dracocephalum parviflorum, several Pentstemons, and Gentiana detonsa, rivalling our G. verna in the brilliancy of its azure.

The principal fodder plants of the Canadian prairies are Vicia americana and Lathyrus venosus; the latter, a fine large-leaved species, has its western geographical limit near Lake Superior. Edible berries and other fruits are very numerous. The commonest Blackberry in the East is Rubus villosus, not unlike our R. fruticosus (if one may still use this name), but with more hoary foliage. R. odoratus is a splendid plant, with large rose-coloured flowers, and fruit not unlike a Raspberry, but larger and flatter. In the Rocky Mountains this is replaced by the white-flowered and edible R. nutkanus. The common Raspberry of the prairies is R. strigosus, which grows in enormous quantities by the sides of the railway. Edible species of Vaccinium are numerous in marshes in the East. The common Whortleberry is V. corymbosum, a large shrubby plant producing great quantities of fruit; V. macrocarpum strongly resembles our Cranberry; and the Canadians have also V. canadense, Vitis-idæa, and pennsylvanicum. The leaves of Ledum latifolium are largely used in the East under the name of "Labrador Tea." A small edible red berry, from which an excellent jelly is made, is produced by Shepherdia argentea, belonging to the Elæagnaceæ, known as the "Buffalo Bush," a spiny plant now largely planted for hedges in the North-west.

I cannot omit mentioning the great beauty in the more southern districts of Pennsylvania and Maryland of the tree known to us as the Tulip tree, to the Americans as the Tulip Poplar, Liriodendron tulipifera. In the neighbourhood of Philadelphia it seems to have formed a large portion of the original forest, and trees with perfectly erect stems and a magnificent head of foliage are still standing, 80 to 100 feet in height, and with trunks 2½ in 3 feet in diameter.

On reaching the Rocky Mountains themselves, as soon as you rise to an elevation of 8000 to 10,000 feet, the remarkable phenomenon presents itself of a flora essentially European in its genera, and even to a certain extent in its species. This will be illustrated by the mention of a very few of the plants gathered in a single day's botanising on the mountains above "Kicking-horse Pass," just below the snow limit, viz., Parnassia fimbriata, Dryas octopetala, Linnæa borealis, Saxifraga aizoides, Listera cordata, Silene acaulis, Spiræa betulæfolia, Galium boreale, and many others. *A. W. B.*

Obituary.

HON. FRANCIS B. HAYES.—We regret to have to record the death of the Hon. Francis B. Hayes, President of the Massachusetts Horticultural Society, at his country home in Lexington, Mass., U.S.A., on Sept. 19, in the sixty-fourth year of his age. Mr. Hayes graduated from Harvard College in 1839, standing one of the first in his class. Subsequently he studied law, and, after completing his studies he became engaged in the railroad interest, acquiring a position as one of the leading business men of Boston. Mr. Hayes was a man of great wealth, and was a liberal giver to the public and private charities, and for educational purposes. He was a great lover of books and flowers. At his Boston home, on Mount Vernon Street, he had one of the finest private libraries in the country. His country home at Lexington is an estate comprising more than 400 acres of garden, field, and woodland, upon which he expended large sums annually, making the estate one of the interesting and beautiful of country places. Mr.

Hayes was a large grower of Rhododendrons and Roses, and of the former flower he was acknowledged as the leader in this country, having taken many prizes and medals at exhibitions in Boston and New York, and many other places. He was always ready to give advice and encouragement to those whose efforts in the direction of making and maintaining good gardens and greenhouses came under his notice. Funeral ceremonies were held over the remains at King's Chapel, on Wednesday noon, Sept. 24. The many societies of which the deceased was a member were well represented. The Massachusetts Horticultural Society was represented by twenty members, who escorted the remains to Mount Auburn, where the interment took place. *A Correspondent.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, OCTOBER 15, 1884.

Month and Day.	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
9	29.24	—0.35	52.0	38.0	14.0	46.0	— 5	9 42.1	88	W. SW.	0.42
10	29.30	—0.40	47.0	39.0	8.0	41.4	— 10	2 38.7	91	W. W. NW	0.07
11	29.50	—0.20	46.5	37.0	9.5	41.2	— 10.1	32 5	73	W. NW	0.01
12	29.68	—0.02	49.2	40.0	9.2	44.3	— 6.7	38.9	81	N. N. NW.	0.04
13	29.91	+0.21	49.3	37.5	11.8	43.0	— 7.7	37.3	80	W. NW	0.00
14	29.95	+0.26	55.5	38.0	17.5	48.1	— 2.3	43.5	84	W. SW.	0.05
15	30.09	+0.39	56.0	44.0	12.0	50.7	+ 0.5	46.4	85	N.W	0.00
Mean	29.67	—0.02	50.8	39.1	11.7	45.0	— 6	1 39.9	83	W. NW	0.59

Oct. 9.—Fine and bright in early morning. Very dull. Rain nearly all day and night.
— 10.—Slight rain all day and night.
— 11.—Dull day and night, cold and windy.
— 12.—Dull day and night. Rain in evening.
— 13.—Very fine day and night.
— 14.—Rain in early morning. Dull day and night.
— 15.—Fine day, sun shining occasionally. Dull night.

LONDON: *Atmospheric Pressure.*—During the week ending October 11, the reading of the barometer at the level of the sea decreased from 30.66 inches at the beginning of the week to 29.36 inches by midnight on the 9th, and was 29.69 inches by the end of the week.

The mean reading of the barometer for the week was 29.91 inches, being 0.27 inch lower than last week, and 0.05 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 61°, on the 7th, the highest on the 11th was 46°.5. The mean of the seven high day temperatures was 55°. The lowest temperature was 37°, on the 11th. On the 7th the lowest temperature was 51°.5. The mean of the seven low night temperatures was 43°.2.

The greatest range of temperature in one day was 17°.1, on the 5th; the smallest was 8°, on the 10th. The mean of the seven daily ranges was 11°.8.

The mean temperatures were—on the 5th, 51°; on the 6th, 53°.7; on the 7th, 54°.8; on the 8th, 51°; on the 9th, 46°; on the 10th, 41°.4; and on the 11th, 41°.2; of these the 6th and 7th were above their averages by 0°.8 and 2°.2, the rest were below by 2°.2, 1°.2, 5°.9, 10°.2, and 10°.1 respectively.

The mean temperature for the week was 48°.4, being 5°.9 lower than last week, and 3°.8 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 110°, on the 7th. The mean of the seven daily readings was 96°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass was 28°, on the 9th and 11th. The mean of the seven readings was 33°.7.

Rain.—Rain fell on six days to the amount of 0.64 inch, of which 0.42 inch fell on the 9th.

ENGLAND: *Temperature.*—During the week ending October 11, the highest temperatures were 65° at Truro, 62°.2 at Plymouth, 61° at Blackheath and Leeds; the highest at Wolverhampton was 56°.2, at Bradford 56°.4, at Liverpool 57°.7. The general mean was 59° 4.

The lowest temperatures were 28°.5 at Wolverhampton, 29°.5 at Bolton, 32° at Sheffield and Preston; the lowest at Liverpool was 37°.9, at Plymouth, Brighton, and Blackheath 37°. The general mean was 33°.7.

The greatest ranges were 29°.4 at Bolton, 29° at Truro, 28° at Leeds; the smallest ranges were 19°.8 at Liverpool, 23°.2 at Brighton, 24° at Blackheath. The general mean was 25°.7.

The mean of the seven high day temperatures was highest at Truro, 57°, at Plymouth 56°.8, at Leeds 55°.6; and was lowest at Sunderland, 49°.1, at Sheffield 51°.9, and at Bolton 52°. The general mean was 53°.6.

The mean of the seven low night temperatures was highest at Blackheath, 43°.2, at Liverpool 43°, at Plymouth and Brighton 42°.6; and was lowest at Wolverhampton, 36°.6, at Sheffield 39°.4, at Bradford 39°.9. The general mean was 40°.9.

The mean daily range was greatest at Wolverhampton, 15°.6, at Leeds 15°.3, at Truro 14°.9; and was least at Sunderland, 7°.8, at Liverpool 9°.3, at Hull 11°.3. The general mean was 12°.7.

The mean temperature was highest at Truro, 49°.6, at Plymouth 48°.6, at Blackheath 48°.4; and was lowest at Wolverhampton, 43°.3, at Sunderland 44°.1, at Bolton 44°.3. The general mean was 46°.2.

Rain. — The largest falls were 1.29 inch at Sunderland, 1.04 inch at Truro, 0.89 inch at Plymouth; the smallest falls were 0.12 inch at Bradford, 0.17 inch at Sheffield, 0.20 inch at Nottingham. The general mean fall was 0.60 inch.

SCOTLAND: *Temperature.*—During the week ending October 11 the highest temperature was 64°.5, at Paisley; at Leith the highest was 56°. The general mean was 60°.7.

The lowest temperature in the week was 31°.2, at Edinburgh; at Greenock the lowest temperature was 35°.2. The general mean was 33°.3.

The mean temperature was highest at Paisley, 47°.8, and lowest at Dundee, 44°.7. The general mean was 46°.2.

Rain. — The largest fall was 0.97 inch, at Perth, and the smallest fall was 0.55 inch, at Paisley. The general mean was 0.80 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

ABIES CONCOLOR: *H. K.* The distinction given is certainly not absolute, but depends upon the stage of growth.

ARSENIC FOR DESTROYING WEEDS: *Jas. Hopkins.* If your wells are shallow, and near the walks to be treated with this poisonous substance, there is certainly danger of its percolating into them. Salt and hot water is as good, and has the merit of being non-injurious to man or animals.

CAMELLIA LEAF BLACK FUNGUS: *Pict.* It is the Capnodium Footii, which occurs on this plant, Orange trees, and other evergreens, and which this year was common on Roses. Frequent spongings with warm soapy water and general cleanliness will get rid of this and the insects, or you may fumigate repeatedly for thrips, and black aphis—but you cannot get rid of scale by this means.

DAHLIAS: *W. M. D.* Green Dahlias are not at all uncommon among double and partially double sorts. It is constant if a seedling, and may be propagated from root or cuttings.

DOUBLE EUCHARIS AMAZONICA BLOOM: *E. Butts.* This is a common occurrence.

POTATO WITHIN A POTATO: *Robt. Anderson.* Such things are of repeated occurrence, and have often received notice in our pages.

ERRATA.—In our report of the Crystal Palace fruit show, last week, Messrs. Lane & Sons, Great Berkhampstead, were credited in error with showing 142 dishes of Apples, instead of Messrs. G. & J. Lane, St. Mary's Cray. Mr. C. Osman obtained 1st prize for Pumpkins, and not 4th.

FUCHSIA: *Malhamite.* We cannot undertake to name florists' varieties.

FUNGUS: *T. C., Welton.* The name of the fungus is Agaricus rachodes; the larger example, 10½ inches high, is very fine. It is esculent. This fungus bears the same relationship to the delicious A. procerus as the Horse Mushroom does to the true pasture Mushroom. Epicures consider A. rachodes a trifle inferior to A. procerus, but both are exquisite objects for the table if served hot and well cooked. *W. G. S.*

LEGAL NOTICE: *N. S., Thirsk.* The notice will be governed by the terms of occupancy, and by local custom, regarding which you had better consult a solicitor.

MONSTERA PERTUSA: *J. Clow.* If the fruit is allowed to ripen the flavour of the juice will be found delicious. You should, however, be careful, as there are a vast number of small sharply-pointed crystals in it which prick the tongue unpleasantly.

NAMES OF FRUITS: *A. A. H.* Summer Thorle.—*J. B. Tibbets.* 1, Golden Noble; 2, Bedfordshire Foundling.—*W. W. & S.* Not known; a very hard-fleshed, acid fruit—not a "Russian" character.—*W. P.* Probably Kerry Pippin.—*M. M. W.* The flat Apple, Fearn's Pippin; the tall one, King of the Pippins. —438, *James Turner. Pears:* 1, Marie Louise; 2, Beurré Diel. *Apples:* 1, Golden Noble; 2, Blenheim Orange; 3, New Hawthornden; 4, Dumelow's Seedling; 5, Court of Wick; 6, Ross Nonpareil.

NAMES OF PLANTS: *Thomas Short.* The blue flower = Anchusa is probably A .callithyrsum, Webb. MSS. It belongs to a difficult group growing in the Atlantic Islands, of which we have comparatively imperfect material for comparison. Lobelia = L. salicifolia, Don. (L. gigantea, *Bot. Mag.*)—*W. Wait.* Sedum glaucum = hispanicum, Stapelia sp.—*Fern Down.* Calluna vulgaris and Aristolochia hirta.—*D. C.* 7, Festuca duriuscula; 8, F. elatior; 9, Aira flexuosa; 10, Alopecurus agrestis.—*A. Francis.* Alopecurus agrestis; Polygonum maculatum.—*J. H.* 1, Blechnum braziliense; 2, Asplenium bulbiferum; 3, Blechnum, undeterminable; 4, Pteris tremula; 5, Davallia, perhaps bullata; 6, Blechnum occidentale; 7, Lomaria gibba; 8, Onychium lucidum; 9, Adiantum Capillus-Veneris; 10, A. assimile; 11, Pteris cretica.—*Letter of correspondent sending six plants to name, mislaid.* 1, Juglans nigra; 2, Lindenia Benzoin; 3, Abies sibirica; 4, Chamæcyparis thyoides; 5, Pinus Pinaster; 6, Cupressus macrocarpa.—*Name in pencil, illegible.* 1, Selaginella erythropus; 2, S. caulescens; 3, Anemidictyon phyllitidis.—*W. H. M.* Abies lasiocarpa, *alias* Lowiana, *alias* Parsonsi, &c.—*Correspondent.* 1, Gomphocarpus fruticosus; 2, not recognised; 3, Ceratopetalum gummiferum; 4, Adiantium cultratum.

PHALÆNOPSIS LOSING THEIR LEAVES: *A Constant Reader.* It is usually considered a sign of bad health, although some varieties will break again afterwards. P. Lowii loses its leaves, but that is a rare plant that you are hardly likely to be in possession of yet.

RED-FLOWERED MIGNONETTE: *D. Guihéneuf, Nantes.* Your small spray of Mignonette has the anthers of a rather deep red, but as we are not able at the moment to institute any comparison, we cannot say positively if it is better than others.

TO PRESERVE BEDDING PLANTS: *Novice.* You ought to take up the tricolor Pelargoniums you intend to keep at once, shaking away all the soil from the roots, which can then be cut back somewhat. If you have not much space you can put two or three plants in a 48 or 32-sized pot (4½—6 inch) using sandy loam in a rough state, but no vegetable mould, as that would favour decay. The tops may be slightly pruned, although that is better left till the plants make new roots, or till the month of February, when the prunings may be utilised for stock. After potting and watering the plants let them stand in the warmest end of your house till they have begun to root, when they must enjoy more light and air. Do not water unless the plants show signs of flagging, when they must have a good soaking. Do not water in dribblets, as more things are killed by it by amateurs than by anything else. Keep them free from insects and from dust and decaying leaves. Tricolors and bicolors enjoy a little warmth, say of from 45°—55°, all the winter, as they keep healthiest when growing slightly. Keep low temperatures in dull and cloudy weather, and give a trifle of ventilation, and let the temperature rise in fine weather. Zonals are hardier and will do in an ordinary greenhouse with a minimum night temperature of 40°. Many other half-hardy bedding plants will enjoy similar treatment to these last named plants. The leaf you sent is a variety of Centaurea, probably plumosa, or the improved varieties Princess of Wales or Prince of Wales—we cannot say from a leaf only which it is. This plant may also be treated like the others—a little warmth for a week or two and then a colder *régime.*

*** All communications intended for publication should be addressed to the "*Editor,*" and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE: — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

DICKSONS & Co., 1, Waterloo Place, Edinburgh—Roses.

THOMAS RIVERS & SONS, Sawbridgeworth — Fruit Trees.

CATALOGUE OF THE NATIONAL ROSE SOCIETY—A List of Exhibition and Garden Roses.

MESSRS. J. CHEAL & SONS, Lowfield Nurseries, Crawley—Fruit Trees, Shrubs, Forest Trees, Rhododendrons, &c.; also a Treatise on Planting, Training, and Treatment of Fruit Trees.

COMMUNICATIONS RECEIVED:—H. E., Ryde.—Ed A., Paris.—W. H. B.—Marshall Wilder, Boston, U.S. A.—H. Correvon, Geneva.—H. E. M.—M. J. B.—F. S.—W. T. T.—A. S. B.—J. A. De Mar, Boston, U.S.—H. B. R.—H. H. D'O.—J. R. J.—F. Redford.—G. Humphrey.—I. Clayton.—J. H.—W. G. S.—W. H. W. R.—H. W. W.—J. S.—W. H. Stephens—W. C. L.—Ernest Bergman.—W. R.—C. A. M. C.—W. W.—Simple Sadler.—J. G. Baker.—Theo.—A. C.—P. G.—A. D.—J. D.—F.—W. Rossiter.—W. E.—W. H. W.—Constant Reader.—Thos. Cochrane.—M. Wright.—J. Mcoy.

Markets.

COVENT GARDEN, October 16.

TRADE steady, prices remaining the same. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½-sieve ..	1 6- 4 0	Pine-apples, Eng., lb.	4 0- 5 0
Cobs, per 100 lb. ..	57 6-60 0	Peaches, per doz. ..	8 0-12 0
Grapes, per lb. ..	0 6- 4 0	Pears, French, doz.	1 0- 2 0
Lemons, per case..	21 0- ..	Pines, St. Michael's, each	3 0- 6 0
Melons, each ..	1 0- 1 6		

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	2 0- 4 0	Lettuces, Cabbage, per dozen	1 6- ..
Beans, French, lb.	0 4- ..	— Cos, each ..	0 2- ..
Beet, per doz. ..	1 0- ..	Marrows, each ..	0 2- ..
Cabbages, per doz..	1 6- 2 0	Mint, green, bunch..	0 4- ..
Carrots, per bun. ..	0 6- ..	Mushrooms, p. baskt.	1 0- 2 0
Cauliflowers, English, dozen.. ..	1 0- 2 6	Onions, per bunch ..	0 6- ..
Celery, per bundle..	1 6- 2 6	— Spring, per bun.	0 6- ..
Cucumbers, each ..	0 6- 1 0	Parsley, per bunch..	0 4- ..
Endive, English, per dozen	1 0- ..	Peas, English, quart	2 6- ..
Garlic, per lb. ..	0 6- ..	Radishes, per doz. ..	1 6- ..
Herbs, per bunch ..	0 2- 0 4	Small salading, per punnet	0 4- ..
Horse Radish, per bundle ..	3 0- 4 0	Spinach, per bushel	2 6- ..
		Tomatos, per lb. ..	0 6- 1 0
		Turnips, bun. ..	0 5- ..

POTATOS.—Magnum Bonums, 50*s.* to 70*s.*; Regents, 70*s.* to 80*s.* per ton. Trade very quiet.

PLANTS IN POTS —AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-24 0	Ferns, in variety, per dozen	4 0-18 0
Arbor-vitæ (golden), per dozen	6 0-18 0	Ficus elastica, each	1 6- 7 0
— (common), dozen	6 0-12 0	Foliage Plants, various, each	2 0-10 0
Asters, per dozen ..	4 0- 8 0	Fuchsias, per doz. ..	3 0- 6 0
Begonias, per doz..	4 0-12 0	Marguerite Daisy, per dozen	8 0-15 0
Bouvardia, dozen ..	9 0-18 0	Mignonette, per doz	3 0- 6 0
Chrysanth., dozen ..	4 0- 9 0	Myrtles, per doz. ..	6 0-12 0
Cockscombs, doz. ..	2 6- 4 0	Palms in variety, each	2 6-21 0
Coleus, various, doz.	3 0- 9 0	Pelargoniums, scarlet, per dozen ..	4 0- 6 0
Cyperus, per dozen	4 0-12 0	Primula sinensis, per dozen	4 0- 6 0
Dracæna term. doz...	30 0-60 0	Solanums, dozen ..	9 0-12 0
— viridis, per doz..	12 0-24 0		
Erica, various, doz.	9 0-18 0		
Euonymus, various, per dozen	6 0-18 0		
Evergreens, in var., per dozen	6 0-24 0		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 bunches	2 0- 4 0	Lapageria, red, 12 blooms	1 0- 2 0
Arum Lilies, 12 blms.	3 0- 6 0	Marguerites, 12 bun.	3 0- 6 0
Asters, 12 bunches ..	4 0- 9 0	Mignonette, 12 bun.	1 0- 4 0
Azalea, 12 sprays ..	1 6- 2 0	Pelargoniums, per 12 sprays	0 9- 1 0
Bouvardias, per bun.	0 9- 1 0	— scarlet, 12 sprays	4 0- 6 0
Camellias, per doz ..	4 0- 6 0	Primula, double, bun.	1 0- 1 6
Carnations, 12 blms.	1 0- 2 0	Roses (indoor), doz.	2 0- 6 0
Chrysanth., 12 bun.	3 0- 9 0	— (outdoor), 12 bun.	4 0-12 0
— large, 12 blooms	3 0- 6 0	Stephanotis, 12 spr.	4 0- 8 0
Cornflower, 12 bun..	2 0- 4 0	Sweet Peas, 12 bun.	1 6- 4 0
Cyclamen, 12 blooms	0 3- 0 6	Tropæolum, 12 bun.	1 0- 2 0
Dahlias, 12 bunches	3 0- 6 0	Tuberoses, per doz..	1 0- 1 6
Eucharis, per doz. ..	3 0- 6 0	Violets, 12 bun. ..	1 0- 1 6
Forget-me-not, 12 bs.	2 0- 6 0	— French, bunch..	1 0- 1 6
Gardenias, 12 blms..	3 0- 6 0	— Parme, Fr., bun.	3 0- 4 0
Gladiolus, various, 12 spikes	1 0- 3 0	Wallflower, 12 bun..	4 0- 6 0
Heliotropes, 12 sp. ..	0 6- 1 0	White Jasmine, per bunch	0 6- 1 0

SEEDS.

LONDON: *Oct.* 15.—There was the usual Wednesday attendance on to-day's seed market, business being confined to narrow limits. No attention is as yet paid to American red Clover seed: rather higher prices now come by cable. There is a somewhat firmer feeling for Alsike and white Clover. Useful samples of English Cow-grass are offering at moderate rates. Winter Tares have recently been in improved request. For Canary and Hemp seed the sale continues exceedingly slow: of the former there have lately been some heavy arrivals. Blue boiling Peas find buyers at last week's quotations. Feeding Linseed maintains its strong position. Other articles are unchanged. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

POTATOS.

The Borough and Spitalfields markets reports state that there were fair supplies and a quiet trade. Quotations:—Kent Regents, 70*s.* to 80*s.*; kidneys, 60*s.* to 70*s.*; Essex Shaws, 50*s.* to 65*s.*; Magnum Bonums, 50*s.* to 75*s.*; Victorias, 70*s.* to 80*s.*; and Champions, 45*s.* to 60*s.* per ton.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 14*s.* 9*d.*; East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 19*s.* 6*d.*; Hetton Lyons, 17*s.* 6*d.*; Lambton, 19*s.*; Wear, 17*s.* 6*d.*; Hartlepool, 18*s.* 6*d.*; Hulam, 17*s.* 9*d.*; East Hartlepool, 18*s.* 9*d.*; South Hartlepool, 17*s.* 9*d.*; Tees, 19*s.* 9*d.*; Chilton Tees, 17*s.* 9*d.*

Government Stock.—Consols closed on Monday at 101 to 101⅛ for delivery, and 101 3/16 to 101 5/16 for the account. Tuesday's figures were as on the previous day for delivery, and 101 1/16 to 101⅛ for the account. The final prices of Wednesday and Thursday were, 101 to 101⅛ for delivery, and 101⅛ to 101⅛ for the account.

DUTCH FLOWER BULBS.

Roman HYACINTHS, SNOWDROPS, and DAFFODILS at Wholesale Prices.

Imported BULBS exceptionally fine this season.

Catalogue sent gratis on application to

E. J. JARMAN,
The People's Seedsman, Chard, Somerset.

EXPIRATION OF LEASE.

Several Acres of Nursery, containing a valuable Stock, continue to be offered at a nominal price; the lease cannot be renewed.

	Ordinary Price.		Reduced to	
RHODODENDRONS, Standard, 4000 to select from, of finest named kinds, perfect specimens, from 1½ to 5 feet through the head	105/-	10/6	31/5	5/-
,, Bush, do., 5, 6, 7, and 8 feet high..	42/-	21/-	15/-	10/6
,, Dwarf and Sweet-scented, 1 to 2½ feet high, consisting of K fragrans, Wilsoni, Govenianum, &c.	2/6	..	1/5	-/9
ANDROMEDA FLORIBUNDA; fine plants, well set with bloom, 1 to 3 feet high	10/6	2/6	5/-	1/-
AZALEAS, 1 to 3 feet high	2/6	..	1/6	..
A fine lot of P. NORDMANNIANA, T. LOBBII, WELLINGTONIA, CUPRESSUS, RETINOSPORAS, THUIOPSIS DOLABRATA, and many others in fine condition for removal	10/6	5/-	5/-	1/-
ORNAMENTAL TREES—Fine specimens of Limes, Laburnums in vars., Horse Chestnut, Scarlet Chestnut, Sorbus, Thorns of sorts, Maples, Fraxinus aucubæfolia, Scarlet Oak; also Weeping Birch, Elm, Ash, and Poplar, 6 to 15 feet high	10/6	3/6	5/-	1/6
LIGUSTRUM OVALIFOLIUM, 2 to 4 feet, per 100	20/-	..	10/-	.
,, common, 1 to 2½ feet				
LAUREL, common, 1 to 3 feet ..				
,, caucasica, 1 to 2½ feet				
,, Portugal, 1½ to 3 feet				
MAHONIA AQUIFOLIA				
BROOM, White				
YEWS, Irish				
ROSES, Dwarf, Moss, Teas, and Climbers				
CLEMATIS, fine stuff, in great variety; Virginia Creepers, Ampelopsis Veitchii	No reasonable offer refused, or quotations will be given.			
ILEX SHEPHERDI, a fine lot of perfect specimens, 6 to 9 feet; smaller, 2 to 3 feet, ...				
THUIA LOBBII, 3 to 4 feet ..				
RETINOSPORA AUREA, 6 to 15 inches				
CUPRESSUS ERECTA VIRIDIS, 1 to 3 feet				
WELLINGTONIA GIGANTEA, 3 to 5 feet				
MAHONIA AQUIFOLIA, 12 to 18 inches				
COB NUT, Webb's, 3 to 6 feet ..	25*s.* per 100			

Collections of SHRUBS and TREES for general planting, 2 to 6 feet high, 25*s.* to 75*s.* per 100.

Extra large Fruiting APPLES, PEARS, and CHERRIES, to clear, 1*s.* each.

SPIRÆA PALMATA, fine forcing clumps. The largest stock in Europe, 25*s.* per 100.

,, **JAPONICA**, 10*s.* 6*d.* per 100.

ERICAS in variety, 20*s.* per 100.

LAVENDER, fine bushy stuff, 3*s.* per dozen, 15*s.* per 100.

PERIWINKLE, 10*s.* per 100.

Thousands of other things too numerous for an advertisement are on offer, and inquiries or a visit will be found very advantageous.

CHARLES NOBLE, Bagshot.

LILIUM HARRISII (True).

We are the Original Introducers and Sole Agents of Mr. Harris in England for this Grand Lily.

We have just received our Consignments, and find the Bulbs very good, larger than last year, and in capital sound condition. This grand Lily has been pronounced by all the practical men who have grown it to be the finest introduction for many years. Producing 2 to 5 blooms on a stalk, and throwing up 2 to 3 stalks during the season in succession. Flowers pure white, long narrow trumpet-shaped, and recommended for forcing.

For Price of this and many other varieties, see our BULB CATALOGUE, free on application.

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SEED AND BULB MERCHANTS, EXETER STREET, STRAND, W.C.

The Largest Rose Grounds in England.

CRANSTON'S NURSERIES
(ESTABLISHED 1785).

NOW READY,

Descriptive Catalogue of Roses,
FREE ON APPLICATION.

CRANSTON'S NURSERY and SEED CO. (Limited),
KING'S ACRE, HEREFORD.

FLOWERING PLANTS
FOR AUTUMN AND WINTER.

STRONG, HEALTHY, AND FULL OF BLOOM.

ACACIAS, 18*s.* to 30*s.* per dozen.
AZALEA INDICA, 15*s.* to 60*s.* per dozen.
BOUVARDIAS, distinct, singles and doubles, 18*s.* per dozen.
CAMELLIAS, 30*s.* to 60*s.* per dozen.
CYCLAMEN PERSICUM (Smith's superb strain), full of buds, 5-inch pots, 18*s.* per dozen.
CYTISUS, 12*s.* to 18*s.* per dozen.
EPACRIS, best sorts, 18*s.* to 30*s.* per dozen.
ERICAS, HYEMALIS, WILMOREANA, CAFFRA, GRACILIS, AUTUMNALIS, &c., 6-inch pots, 18*s.* to [30*s.* per dozen.
GARDENIAS, 18*s.* to 30*s.* per dozen.
LAPAGERIA ALBA, 7*s.* 6*d.* to 42*s.* each.
LAPAGERIA ROSEA, 2*s.* 6*d.* each.
LIBONIA PENRHOSIANA, 12*s.* to 18*s.* per dozen.
PIMELEAS, very fine, 30*s.* per dozen.
PRIMULAS, best doubles, named, 30*s.* to 42*s.* per dozen.
PRIMULAS, double white and purple, 18*s.* per dozen.
TREE CARNATIONS, 5 inch pots, 24*s.* to 30*s.* per dozen.
GREVILLEA ROBUSTA, 5-inch pots, 12*s.* to 18*s.* per dozen.
FERNS, MAIDENHAIR, &c., in great variety; also STOVE and GREENHOUSE PLANTS.

Descriptive List Free.

Selections from above may be made at Dozen Prices. The Plants are remarkably fine and cheap.

RICHARD SMITH & CO.,
NURSERYMEN AND SEED MERCHANTS,
WORCESTER.

JAPANESE PLANTS, &c.

Messrs. HAYASHI & CO.,
OF
MOTOMACHI, KOBE, JAPAN,

beg to inform Collectors and the Trade that they have opened a London Order-office at

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PRICE LIST.

JAPANESE LILIES—A Collection for £10, consisting of

3 doz.	L. auratum	or at	8*s.*, 12*s.* & 16*s.*	per doz.
1 ,,	L. cordifolium	,,	24*s.* and 36*s.*	,,
2 ,,	L. coridium	,,	... 12*s.*	,,
2 ,,	L. concolor	,,	... 12*s.*	,,
2 ,,	L. Krameri	,,	... 12*s.*	,,
1 ,,	L. Leichtlini	,,	... 24*s.*	,,
2 ,,	L. Batemanniæ	,,	... 12*s.*	,,
½ ,,	L. longiflorum	,,	... 48*s.*	,,
¼ ,,	L. Hansoni	,,	... 60*s.*	,,

A Collection for £10, consisting of

Fifty JAPANESE MAPLES, forty different varieties, and including six of our celebrated grafted plants, containing three to seven sorts on one stem. All hardy varieties.

Or at 48*s.* per dozen; Grafted, 96*s.* per dozen.

Half of either of the above Collections, £5 5s.
Quarter of either of the above Collections, £2 15s.

Collection of 12 rare vars. of Japanese Iris,
Two of each sort, 30*s.*

Any JAPANESE SEEDS, PLANTS, &c., obtained, to order, direct from our Nurseries.

Speciality of Miniature Firs and Cedars.

Free delivered to any Railway Station in England. Orders now booked for Collections to arrive in December and January. Early application necessary. Terms:—Cash on delivery. All Bulbs and Plants guaranteed true to name and in good condition.

Trade Correspondence invited.

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ILLUSTRATED LIST, Descriptive, Select, and comprising important NOVELTIES, on application.

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NURSERYMEN AND SEED MERCHANTS,
WORCESTER.

Winter Flowering Tree Carnations.

W. HOWARD, Southgate, N., can supply good strong well furnished Plants, from the open ground, of all the varieties worth growing, including the new ones of this year, also ADIANTUM cuneatum, in 48's and 32's, very good; do. farleyense, in 48's; CYPERUS alternifolius variegatus; DRACÆNA striata, Green, a fine variety for Conservatory; GARDENIAS in all sizes; STEPHANOTIS in all sizes; ASPIDISTRA lurida variegata.

PICEA WEBBIANA.—See Illustration in last week's *Gardeners' Chronicle*, page 465.

SPECIAL OFFER.

6 to 9 inches	..	..	9s. per dozen.	..	50s. per 100.
9 to 12 ,,	..	..	18s. ,,	..	100s. ,,
1 to 1½ feet	..	..	24s. ,,	..	150s. ,,
1½ to 2 ,,	..	..	36s. ,,	..	250s. ,,
2 to 2½ ,,	..	..	60s. ,,	..	400s. ,,
2½ to 3 ,,	..	..	90s. ,,		

All transplanted last spring and grown in a very exposed position.
New CATALOGUE forwarded on application.
JAMES DICKSON AND SONS, "Newton" Nurseries, 108, Eastgate Street, Chester.

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COCOA-NUT FIBRE REFUSE,
4d. per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, *4d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, *4d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, *4d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2 bushel bags, *4d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25*s.*, free on to the following rails:—Great Western, Great Northern, Great Eastern, London and North-Western, and Midland, other lines 30*s.*, in sacks 1*s.*; 30 sacks £1 5*s.*; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &C.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*; 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons.
WALKER AND CO., Farnborough Station, Hants.

EUREKA INSECTICIDE.—The only Insecticide worth using. Recommended by the Principal Gardeners in Scotland. The only Insecticide awarded Diploma, Forestry Exhibition, Edinburgh.—Wholesale Agents, CORRY, SOPER, FOWLER AND CO., Finsbury Street, London, E.C.

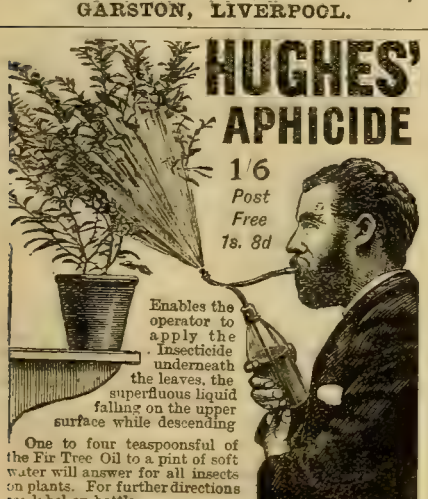
THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.



One to four teaspoonsful of the Fir Tree Oil to a pint of soft water will answer for all insects on plants. For further directions see label on bottle.

E. GRIFFITHS HUGHES, Operative Chemist,
VICTORIA STREET, MANCHESTER.

STANDEN'S MANURE.

ESTABLISHED 20 YEARS.

This old-established Manure is acknowledged by most of the leading practical Gardeners in the United Kingdom and the Colonies to exceed all others in general fertilising properties and staying powers. It promotes a rapid, healthy, and robust growth to plants generally. For Vines it cannot be too highly recommended, and this fact is fully sustained from the result obtained by its use in the hands of some of the most successful Grape-growers. It is a clean and dry powder, with very little smell, which renders it particularly adaptable for ladies interested in plant culture.

The highly fertilising properties of this Manure render its money value, in comparison with other Manures, at least double, as users will find that very small quantities will produce favourable results.

Sold in TINS, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each; and in BAGS, at reduced prices, 28 lb., 12s. 6d.; 56 lb. 23s.; 112 lb., 42s. each.

May be obtained from most known Seedsmen in the United Kingdom and the Colonies.

SOLE MANUFACTURERS—

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AND COMPANY (LIMITED),

Offices and Show Rooms, 18, FINSBURY STREET, E.C.;

Manufactory and Bonded Tobacco Stores,

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BEESON'S MANURE

Is the best for all Horticultural Purposes.
In Tins, 1s. and 2s. 6d. Sealed Bags, ½ cwt., 8s.; 1 cwt., 13s.
MANUFACTURED BY
W. H. Beeson, Carbrook Bone Mills, Sheffield.
Wholesale Agents: Corry, Soper, Fowler & Co., Ltd.,
18, Finsbury Street, E.C., and Shad Thames, London, S.E.
Supplies can be obtained through all respectable Seedsmen and Florists in the Kingdom.
Pure Crushed Unboiled BONES, any size, for Vine Borders.

Certain Sudden DEATH

to all Grubs, Woolly Aphis, Green and Black Fly, Lice, Red Spider, Thrips, Mealy-Bug, Caterpillars, Ants, Worms, &c.

FIR TREE OIL

INSECTICIDE (SOLUBLE IN WATER)

For destroying ALL INSECTS and PARASITES that infest Trees and Plants, whether at the Roots or on the Foliage. It cures Mildew and Blight on Fruit or Foliage, and a weak solution Kills all Vegetable Grubs, Turnip Fly, &c. Clears Grapes from Mildew or Mealy-Bug without affecting the bloom. Thickened with a little clay makes a good winter dressing. Destroys Lice and Fleas on Animals and Birds. Sold by Seedsmen and Chemists, 1*s.* 6*d.*, 2*s.*, 6*d.*, and 4*s.* 6*d.* a bottle. Per gal. 12*s.* 6*d.*, or less in larger quantities. Per post 3*d.* extra.
A treatise on FIR TREE OIL as an Insecticide, its application to Plants and Animals, sent Post-free on receipt of address, by the Manufacturer,
E. GRIFFITHS HUGHES, Manchester.
Wholesale:—HOOPER & CO.; CORRY, SOPER, FOWLER AND CO.; C. E. OSMAN AND CO.; and from all the London Seed Merchants and Wholesale Patent Medicine Houses.
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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

FINEST TOBACCO CLOTH and PAPER, at 8*d.* and 9*d.* per lb., 28 lb. 18*s.* Special quotations for the Trade.
J. DENYN, Manufacturer, 73, Rendlesham Road, Clapton, E.

SILVER SAND, coarse, Sussex and Bedfordshire; Sussex and Kent PEAT and LOAM of the best quality by truckload, ton, and in sacks, at moderate prices. Low rates to London and to all parts.—W. SHORT, Horticultural Company, Midhurst, Sussex.—Established 1862.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiffany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

TANNED NETTING,

Specially selected for Garden Use.
2 yards wide, 1½*d.*, and 4 yards wide, 3*d.* per yard run.
Scrim, Hessian, and **Tiffany,** for protecting Fruit Trees and shading Greenhouses, from 2½*d.* per yard and upwards.
Russia Mats, Raffia Fibre, Tobacco Paper and **Cloth, Cocoa-nut Fibre Refuse,** and other Sundries at the lowest possible prices.
CATALOGUE post-free on application.

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149, COMMERCIAL ST., LONDON, E.

ASTON CLINTON STRAW MATS.—The warmest covering for Pits and Frames. Sizes:—6 ft. 6 in. by 3 ft. 9 in. at 2*s.*; 6 ft. 6 in. by 4 ft. 6 in at 2*s.* 2*d.*; 6 ft. 6 in by 7 ft., 3*s.* 2*d.* Apply to
Miss MOLIQUE, Aston Clinton, Tring.

Under the Patronage of the Queen.

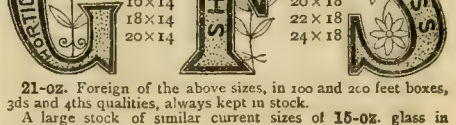
J. SMITH'S IMPERISHABLE STRATFORD LABELS.



The above Labels are made of a White Metal, with RAISED BLACK-FACED LETTERS.
The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
J. SMITH, The Royal Label Factory, Stratford-on-Avon.

BELGIAN GLASS for GREENHOUSES, &c.

Can be obtained in all sizes and qualities of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & SON have always a large stock in London of 20 in. by 12 in., 20 in. by 14 in., 20 in. by 16 in., 20 in. by 18 in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

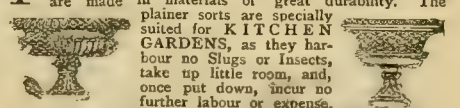


21-oz. Foreign of the above sizes, in 100 and 200 feet boxes, 3ds and 4ths qualities, always kept in stock.
A large stock of similar current sizes of **15-oz.** glass in 200 feet boxes.
Propagating and Cucumber Glasses, and all Miscellaneous Glass Articles, can be obtained from
GEORGE FARMILOE & SONS,
GLASS, LEAD, OIL and COLOUR MERCHANTS,
34, St. John's Street, West Smithfield, London, E.C.
Stock List and Prices on application. Quote *Chronicle.*

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.



GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W. Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
F. ROSHER AND CO., Brick and Tile Merchants.
See Addresses above.

SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves, A liberal Discount to the Trade.

PURE WOOD CHARCOAL

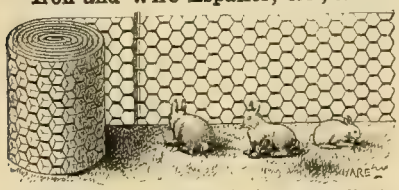
FOR

VINE BORDERS, FRUIT TREES, STRAWBERRIES, ROSES, FLOWER BEDS, POTTING PURPOSES,

AND GENERAL HORTICULTURAL PURPOSES.

HIRST, BROOKE, AND HIRST, Manufacturers, Leeds, Yorkshire.

Iron Hurdles, Gates, Tree Guards, Iron and Wire Espalier, &c., &c.



Illustrated CATALOGUE Free on application.

BAYLISS, JONES & BAYLISS,

VICTORIA WORKS, WOLVERHAMPTON;

And 3, Crooked Lane, King William Street, London, E.C.

Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH,

for Preserving Ironwork, Wood, or Stone.

(*Registered Trade Mark*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

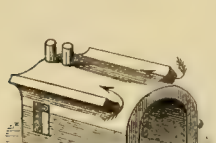
CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to

HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow.

THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler. Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.



	Long.	Heat of 4-in. Pipe.	Price of Boiler and *set of Fittings.
A,	19 in.	150 feet	£5 10 0
B,	22 in.	300 ,,	6 15 0
C,	24 in.	400 ,,	8 5 0
D,	26 in.	500 ,,	9 10 0
E,	28 in.	600 ,,	10 15 0
F,	32 in.	700 ,,	12 5 0
G,	36 in.	850 ,,	13 15 0
H,	42 in.	1000 ,,	15 10 0
I,	48 in.	1250 ,,	17 5 0
J,	54 in.	16.0 ,,	19 10 0
K,	60 in	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, flue bars, three cleaning doors, damper, &c.

Says a Gardener of great experience:—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite."

Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.

FOR SMALL CONSERVATORIES

for Heating from 50 to 100 feet of pipe.



An Independent Boiler, with furnace front, doors, fire bars and dead plate complete, and 6 feet of funnel. This is called the "LITTLE WONDER." It is fixed in the end or side wall of conservatory by any bricklayer; the funnel running up just outside the glass. It can be applied almost everywhere. It will keep in all night. It is worthy of its name. Price complete, 50 feet size, £4 15; 100 feet size, £5 15*s.*

If cheque is enclosed with order 5 per Cent. discount may be deducted, if not, reference to Banker required.

LANKESTER & SONS,

Horticultural Heating Engineers, Southampton.

We send capable men to fix work in all parts of the Kingdom. Estimates given. Drawings of Patent and Special Appliances for Heating Dwelling Houses and Churches sent on application.

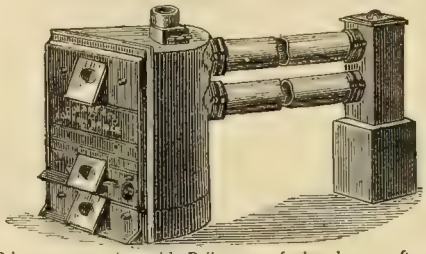
THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS

Can be seen in action Tuesdays, Thursdays, and Saturdays, in

DEANE & CO.'S "GEM" CONSERVATORY,

Close to the Panorama in the grounds of the

CRYSTAL PALACE.



Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4-inch hot-water pipe, and patent joints complete, £4 4*s.*

Delivered free to any Station. Discount for cash.

This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.

It burns over 12 hours without attention at a nominal cost.

"Loughborough" Boilers to heat up to 650 ft. of 4-in. pipe, with hot-water pipe, joints, &c., always in stock.

COST OF APPARATUS FOR HOUSES OF ANY SIZE ON APPLICATION.

The measurement of Greenhouse being given, every apparatus is delivered with pipes cut and fitted ready for fixing.

Illustrated LIST with full particulars, post-free.

DEANE & CO.,

Horticultural Builders and Hot-water Engineers,

46, King William Street, E.C. } LONDON BRIDGE.

THOMAS GREEN & SON

(LIMITED),

Smithfield Ironworks, Leeds,

And Surrey Works, Blackfriars Road, London, S.E.

Horticultural Engineers to Her Majesty the Queen,

CALL SPECIAL ATTENTION TO THEIR

PATENT

WROUGHT-IRON TUBULAR

HOT-WATER BOILERS,

And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

SADDLE BOILERS,

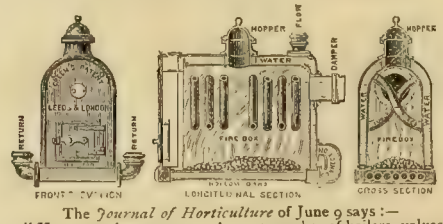
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3 1881.



The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

Descriptive Illustrated Price List may be had free on application.

Estimates given for all kinds of Heating Apparatus, and Hot-water Fittings of every variety supplied on the shortest notice. Galvanized Iron Cisterns, from 4*d.* to 1*s.* 6*d.* per gallon.

WRIGHT'S "CHAMPION" ENDLESS-FLAME-IMPACT BOILERS,

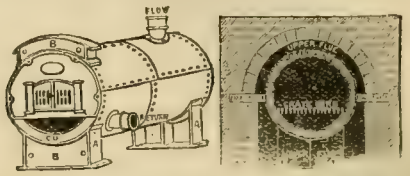
admitted by the entire Trade, after Public and formal challenges, to be *the most economical of fuel, the most powerful, the simplest,* and *the cheapest* in the Trade. Price Lists and particulars from

WRIGHT'S BOILER CO., AIRDRIE, N.B.

The Original and only Genuine Trentham Rivetted Boiler.

Recently Improved and Reduced in Price.

Also Makers of all other kinds of Boilers for Heating.



HOT-WATER PIPES AND FITTINGS

of every description for Heating Apparatus

THE LARGEST STOCK IN THE KINGDOM.



HIGH and LOW PRESSURE nd HOT-AIR HEATING APPARATUS ERECTED and GUARANTEED.

FRED. SILVESTER, Castle Hill Foundry, Newcastle, Staffordshire.

STOVES.

Terra-Cotta! Portable! For Coal!

ROBERTS'S PATENT.

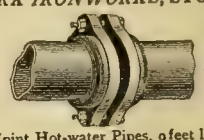
Pure and ample Heat 24 hours or longer for about 1*d.*, without attention. For Greenhouses, Bedrooms, or almost any purpose. Pamphlet and authenticated Testimonials sent. In use daily at Patentee's—THOMAS ROBERTS,

112, Victoria Street, Westminster, S.W.

THOS. W. ROBINSON,

DENNIS PARK IRONWORKS, STOURBRIDGE.

The "Expansion Joint."



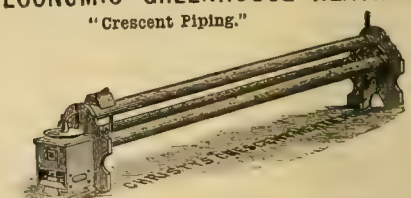
The Best and Quickest Made.

4-in Expansion Joint Hot-water Pipes, 9 feet long, 4*s.* 3*d.* each; 4-in. Socket Hot-water Pipes, 9 feet long, 4*s.* 6*d.* each.

Price List on application.

ECONOMIC GREENHOUSE HEATING.

"Crescent Piping."



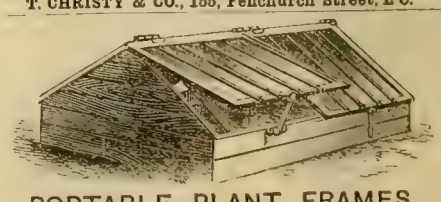
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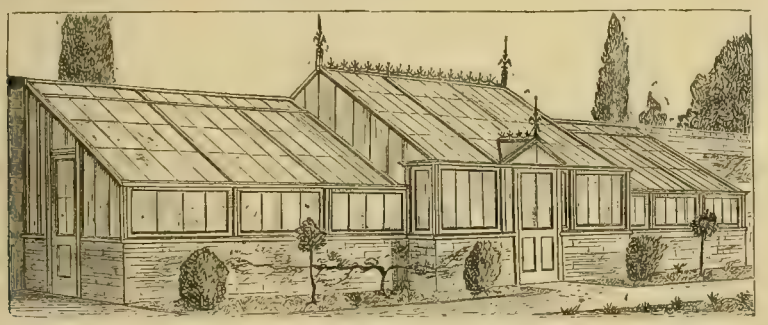
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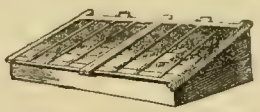
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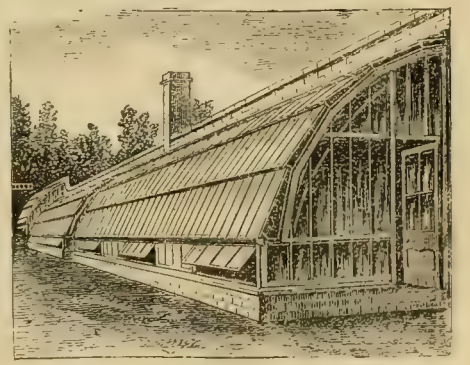
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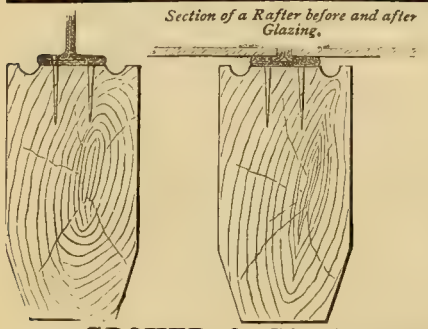
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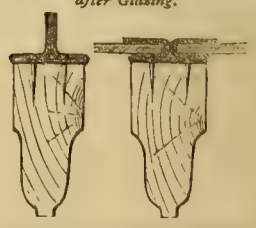
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 18, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 565.—Vol. XXII. {New Series.} SATURDAY, OCTOBER 25, 1884. {Registered at the General Post-office as a Newspaper.} Price 6d. {Post-free, 6½d.}

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J. V. REES (late Robert Parker), Hardy Herbaceous and Alpine Plants, DELPHINIUMS, IRIS GERMANICA, PHLOXES, POTENTILLAS, PÆONIES, &c. Selections of 100 showy varieties from 5os. The finest collection of Aquatics in the country.
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SEAKALE.—For Sale, 10,000 Roots of fine Seakale, for Forcing. Price, 10s. per 100. Apply to JAMES TURNER, 37, George Street, Richmond, Surrey.

SALES BY AUCTION.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 6755.)
CAMELLIAS and DRACÆNAS from Ghent, GREENHOUSE and HARDY BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C, on TUESDAY NEXT, October 28, at half-past 12 o'Clock precisely, consignments of Double White and other CAMELLIAS, DRACÆNA TERMINALIS, D. BAPTISTI, and FICUS ELASTICA, from Ghent; Home-grown LILIES, including many of the finest species in cultivation; 4400 TUBEROSES and other ROOTS, from South Africa; BULBS and PLANTS from America; also Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other DUTCH BULBS.
On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale 6755.)
5000 LILIUM AURATUM, just received from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, October 28, at half-past 12 o'Clock precisely, an importation of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan in fine condition; also a few gigantic Home-grown Bulbs.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6757).
SEMI-ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 30, at half-past 12 o'Clock precisely, a small COLLECTION of SEMI-ESTABLISHED ORCHIDS, comprising fine plants of Cycnoches chlorochilon, Aërides Emericii, Cypripedium Druryi, Dendrobium formosum Berkeleyi, Phalænopsis tetraspis, Calanthe Domini, Dendrobium Fytcheanum, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6757)
ONCIDIUM LOXENSE (new and fine).

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, October 30, at half-past 12 o'Clock precisely, a fine importation of the new and very rare ONCIDIUM LOXENSE, a most beautiful Orchid, in the way of superbiens or macranthum, with a large golden lip. It is one of Nature's rarities. The flower-spikes will give some idea of the grandeur of the species. Also a fine lot of the rare and beautiful ONCIDIUM BICOLOR, CŒLOGYNE PANDURATA, ODONTOGLOSSUM RAMOSISSIMUM, EPIDENDRUM WALLISI, CYPRIPEDIUM LINDLEYANUM, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6757.)
TWO FINE CONSIGNMENTS OF FERNS FROM NEW ZEALAND.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 30, two fine consignments of TREE and other FERNS just received direct from New Zealand, in splendid condition and different sizes, including Cyathea dealbata, C. Smithii, Dicksonia squarrosa, Lomaria discolor, Todea hymenophylloides, and others.
On view morning of Sale, and Catalogues had.

18 Cases of Orchids just received direct from Brazil.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 6, 18 cases just received direct from Brazil, comprising 380 CATTLEYAS, in variety, 330 LÆLIA PURPURATA, including some enormous masses, 18 ZYGOPETALUM GAUTIERI, 25 MILTONIA species, 12 plants of a sweet-scented MILTONIA, 25 ONCIDIUM BIFOLIUM, 16 ONCIDIUM species, &c.
On view morning of Sale, and Catalogues had.

Sales Every Monday, Thursday, and Saturday.
DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.
On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Important Sale of a First-class Collection of Dutch BULBS, a Superb Assortment of 500 handsome Standard, Dwarf and other ROSES, Selected FRUIT TREES, Hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above, by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, October 28, at 12 o'Clock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
ORCHIDS in FLOWER and ESTABLISHED.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 28, at half-past 12 o'Clock precisely, 150 Lots of ORCHIDS in FLOWER and BUD from various collections. Amongst them will be found Cattleya Sanderiana, Lycaste Skinneri delicatissima, Masdevallia ignea Massangeana, Cypripedium purpuratum, Odontoglossum Edwardi, and many others; together with 250 Lots of ESTABLISHED ORCHIDS from well-known collections, consisting of Cattleyas of sorts; Odontoglossum Alexandræ, fine varieties; Lælia anceps var. vestalis; Lælia anceps Dawsoni, and other valuable species.
On view morning of Sale, and Catalogues had.

Wednesday Next.
3000 LILIUM AURATUM.
300 STANDARD ROSES.
300 PALMS and FERNS.
DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 29, at half-past 12 o'Clock precisely, 3000 splendid Bulbs of LILIUM AURATUM, just received from Japan in very fine condition; FERNS, PALMS, and other DECORATIVE PLANTS; and 300 fine named Standard ROSES from an English Nursery; SPIRÆAS, FICUS ELASTICA, from Belgium; HYACINTHS, TULIPS, CROCUS, and other BULBS, from Holland.
On view morning of Sale, and Catalogues had.

Wednesday Next.—Hendon, N.W.
Close to the Railway Station.
IMPORTANT SALE of UNUSUALLY WELL GROWN STOVE and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr J. H. Pounce to SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., on WEDNESDAY next, October 29, at 12 o'Clock precisely, a large quantity of unusually well grown STOVE and GREENHOUSE PLANTS—500 specimen Ferns, 500 smaller ditto; a quantity of Eucharis amazonica in large pots, specimen Pancratium fragrans and Tabernæmontana, 300 Palms, 1000 Bouvardias of sorts, 4000 Carnations of the finest varieties, including 2000 Gloire de Nancy, the best new whites, Andalusia and Dr. Abercrombie, the finest yellows, and Miss Joliffe, the most delicate blush; 1000 of the White Clove Pink Mrs. Sinkins, 250 Roses in 32 and 48-pots; 2000 fine Standard and Dwarf Roses, in all the best sorts; a choice collection of Double and Single Dahlias, unusually fine specimen Portugal Laurels, Weeping Ash, and other Ornamental Trees and Shrubs.
May be viewed the day prior and morning of Sale. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Fifth and Final Great Clearance Sale, by order of Messrs. Ewing & Co., who have discontinued their business at Eaton, near Norwich, the Land having now been Sold. Highly important Sale of the Fifth Portion of the extensive, well-grown, and thriving young NURSERY STOCK, in excellent condition, comprising 10,000 Roses of the choicest exhibition kinds of Teas, Noisettes, and Hybrid Perpetuals, &c., in and out of pots. Many thousand Fruit Trees, Bushes, Raspberry Canes and Culinary Roots, Nut and Filbert Bushes, &c. 100,000 Ornamental and Forest Trees, many of them of suitable sizes to produce immediate effect—clean, stout, and well rooted, having been frequently transplanted and skilfully pruned. A large quantity of Deciduous Flowering Shrubs. 1000 Clematises, in choicest and newest variety; also some Evergreens and Conifers, and a large stock of Ivies and other Climbers, both in and out of pots.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the Royal Norfolk Nurseries, Newmarket Road, Eaton, near Norwich, on WEDNESDAY and THURSDAY, October 29 and 30, at 12 o'Clock precisely each day. Many of the Lots are large, and therefore specially adapted to the wants of extensive purchasers.
May now be viewed. Catalogues on the Premises, and of the Auctioneers, Estate Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.
Very valuable IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 31, at half-past 12 o'Clock precisely:—

1000 Dendrobium Lewi	1000 Cypripedium Lawrenceanum
2000 Odontoglossum Alexandræ	500 Cattleya Gaskelliana
500 Cattleya gigas imperialis	

And many other valuable Orchids.
On view morning of Sale, and Catalogues had.

Tottenham.
Adjoining the Station.
SALE of remarkably well grown NURSERY STOCK, Dwarf ROSES, HERBACEOUS PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 4, at 12 o'Clock precisely, a large quantity of unusually well grown NURSERY STOCK, including 3000 Laurels, 1½ to 4 feet; 1000 bushy Aucuba japonica, 1 to 1½ foot; 3000 Standard Ornamental Trees, 5000 well-furnished Euonymus, good for potting; 1000 Tree Carnations, in all the leading varieties; 2000 Tree Carnation "Andalusia," the finest yellow tree variety; 1000 Pinks "Mrs. Sinkins;" 2000 Violets, 8000 Dwarf Roses, in first-class varieties; 3000 hardy Climbers, 40,000 Seakale and Asparagus, extra strong; 10,000 Christmas Roses (Helleborus), 1000 Anemone japonica, 50,000 double and single Narcissus, and large quantities of other HERBACEOUS PLANTS and BULBS.
May be viewed. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Milford Nurseries, Godalming, near the Milford and New Godalming Railway Stations.
ANNUAL SALE of First-class NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, the Milford Nurseries, Godalming, on TUESDAY, November 11, and two following days, at 12 o'Clock precisely each day, several Acres of beautifully grown NURSERY STOCK, in fine condition for removal, and lotted to suit the Trade and Private Buyers, comprising 3000 specimen Evergreens and Conifers, 10,000 Laurel rotundifolium, 1 to 2½ feet; 2000 green and variegated Aucubas, 3000 ditto Box, 3000 Berberis Darwinii, 5000 Retinospora aurea and R. flavescens, 1 to 2 feet, suitable for pots; 1000 Cupressus Lawsoniana lutea, 1 to 2 feet; 1000 Euonymus radicans, 2000 fine named and hybrid Rhododendrons, 3000 Dwarf Roses, Fruit Trees, 5000 Red Currants, 3000 Ornamental Park Trees, 6 to 10 feet; 100,000 transplanted Forest Trees, 10,000 Evergreen Privet, 2 to 3 feet; 13,000 Spruce Firs, 1 to 3 feet—3000 fit for Christmas Trees; and other Stock.
May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.
N.B.—Messrs. PROTHEROE & MORRIS beg to call the special attention of Gentlemen, Nurserymen, and Others, requiring well-grown stock for immediate effect, to the above highly important Sale.

Foots Cray, Kent.
By order of the Executrix, who is desirous of reducing the Stock and disposing of the Business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Sidcup Hill Nursery, Foots Cray, about 1 mile from Sidcup Station, on WEDNESDAY and THURSDAY, November 5 and 6, at 12 o'Clock precisely each day, a further portion of the NURSERY STOCK, consisting of specimen Conifers and Evergreens, 1000 Laurels, 1 to 2½ feet; 800 Portugal Laurels, 2 to 4 feet; Ornamental and Forest Trees, Standard and Pyramid Fruit Trees, 1000 Aucubas and Common Hollies, 2000 Standard and Dwarf Roses, Climbing Plants, and other Stock.
May now be viewed. Catalogues may be had on the Premises and of the Auctioneers at their Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.
N.B.—The old established NURSERY BUSINESS is to be sold on greatly reduced terms. Full particulars of the Auctioneers.

Forthcoming Sales of Nursery Stock.

MESSRS. PROTHEROE AND MORRIS beg to call the attention of intending purchasers to the following SALES, the dates of which will be announced in next week's Advertisements.
THE NURSERY, ASHFORD, KENT.—CLEARANCE SALE of the whole of the Stock growing upon that portion of the Nursery taken by the Burial Board for the extension of the Cemetery and required by January 1 next. One day's sale.
THE ROYAL NURSERIES, ASCOT. By order of Messrs. John Standish & Co.—IMPORTANT TWO DAYS' SALE of NURSERY STOCK, for the growth of which this Nursery is so justly celebrated.
67 and 68, Cheapside, E.C.

Hare Hill Nursery, Brox, near Chertsey.
IMPORTANT SALE of ROSES and GENERAL NURSERY STOCK, in large and small lots to suit all Buyers.

MESSRS. WATERER AND SONS, owing to the lease of a portion of the land having expired, have received instructions to SELL by AUCTION, on the Premises, on MONDAY, October 27, and three following days, commencing at 11 for 12 o'Clock precisely on each day, the whole of the NURSERY STOCK, well grown and in excellent condition for removal, on the above land, comprising about 40,000 Standard, Half-standard, and Dwarf Roses, of the newest and best varieties, including 5000 Standard Gloire de Dijon, 1000 Dwarf Gloire de Dijon, 3000 Dwarf Général Jacqueminot, 100,000 Manetti and other Rose Stocks, 10,000 Standard, Pyramid, and Dwarf Fruit Trees, including leading and well known kinds of Apricots, Peaches, Nectarines, Apples, Pears, Plums, Cherries, Gooseberries, and Currants; 10,000 Christmas Trees, from 2 to 4 feet; a great variety of Evergreen Trees and Shrubs, including common and Portugal Laurels, 1 to 5 feet; Aucubas, Retinospora, Picea, Pinus, Abies Douglasii, Berberis, Thuia, Cupressus Lawsoniana and erecta, Cedrus Deodara, Arbor-vitæ, Hollies, Privet, Rhododendrons, &c; several thousand Ornamental and Forest Trees, viz., Limes, Maples, Scarlet Thorns, Beech, Mountain Ash, Horse and Spanish Chestnuts, Acacias, Larch and Scotch Firs, and a quantity of Christmas Roses.
May be viewed seven days before the Sale, and Catalogues had upon the Premises, and of the Auctioneers, Chertsey, and Weybridge Station, Surrey.

Fareham—Bugle Rooms.

MR. F. W. ABRAHAM will SELL by AUCTION, on MONDAY, October 27, at 2 o'Clock, a choice assortment of NURSERY STOCK, in variety.
Catalogues at the Rooms, or of the Auctioneer, Woking, Surrey.

Woolston, near Southampton.
Pleasure Grounds adjoining the Woolston Hotel.

MR. F. W. ABRAHAM will SELL by AUCTION, on WEDNESDAY, October 29, at 2 o'Clock, choice NURSERY STOCK, in great variety.
Catalogues may be had at the Hotel, or of the Auctioneer, as above.

Bournemouth—Tregonwell Rooms.

MR. F. W. ABRAHAM will SELL by AUCTION, on WEDNESDAY and THURSDAY, November 5 and 6, at 2 o'Clock each day, a fine and choice assortment of RHODODENDRONS, CONIFERS, EVERGREENS, &c, in great variety.
Catalogues at the Tregonwell, or of the Auctioneer, as above.

Fallowfield.—On October 29.

IMPORTANT SALE of over 2000 VALUABLE STOVE and GREENHOUSE PLANTS forming the collections (except Orchids) at Gorse Hall, Staleybridge, and Oakley, Fallowfield, near Manchester, the property of W. Leech, Esq., including an exceptionally fine lot of PLANTS for EXHIBITION and DECORATIVE PURPOSES, such as Palms and Tree Ferns, fine examples of leading sorts, from 3 to 9 feet high; a grand selection of eighteen Filmy Ferns, of the best varieties, averaging 2 feet across; sixteen beautiful Specimen Adiantum Farleyense, 1 foot 6 inches to 2 feet 6 inches through; thirteen Adiantums, 2 to 4 feet each way, of the finest new sorts; twelve Crotons, 3 to 6 feet each way, splendid plants, fine in form, condition, and colour; a remarkably fine plant of Cordyline indivisa (true), 7 feet by 7 feet; fifteen Eucharis amazonica, finely grown specimens, 2 to 5 feet across; nine Lapagerias, alba, rosea and rubra; fine pans of Imantophyllum miniatum, Cycas revoluta, Medinilla magnifica, Anthuriums Andreanum, Scherzerianum and giganteum; fourteen fine double white Camellias, 3 to 6 feet each way, finely set with flowerbuds; with fimbriata alba, Lady Hume's Blush, Duchess of Orleans, Lavinia Maggi, and many other best sorts, 6 to 8 feet high; fifty well-trained Azalea indica, good pyramids and bushes, 3 to 5 feet, and many other smaller sizes of the best varieties; twenty choice Greenhouse Rhododendrons; 150 Ornamental Table Plants, 1 to 2 feet; 200 Adiantum cuneatum and gracillimum; fifty choice Ferns, in baskets; 160 named, well set Chrysanthemums; 250 named zonal Pelargoniums, numbers of Ericas, Epacris, Nepenthes, Dracænas, Amaryllis, Pancratiums and Yuccas; together with a large quantity of assorted Greenhouse Plants, Climbers, &c.

MESSRS. ARTINGSTALL AND HIND respectfully notify the receipt of instructions from W. Leech, Esq., who is leaving the district, to SELL by AUCTION, on WEDNESDAY, October 29, commencing at 12 o'Clock, prompt, in the Tent erected on the ground, at Oakley, Fallowfield, near Manchester, the VALUABLE, CHOICE, and RARE COLLECTION of EXHIBITION and other DESIRABLE PLANTS.
May be viewed on the afternoon prior and morning of Sale, when descriptive Catalogues may then be obtained, or earlier, together with further particulars, on application to Mr. W. SWANN, in the Gardens at Oakley (which is situated 3 miles from town); or by post, or personally, from the Auctioneers, 45, Princess Street, Manchester.

Tansley Nurseries, near Matlock

MR. GEO. MARSDEN has the pleasure to announce that he is again instructed by Messrs S and J Smith to SELL by AUCTION, at the above old-established Nurseries, on WEDNESDAY and THURSDAY, October 29, and 30, commencing at 11 o'Clock each day, the following :—
100,000 RHODODENDRONS, named varieties.
20 000 RETINOSPORAS, in sorts.
5 000 ANDROMEDA FLORIBUNDA.
30 000 IVIES.
12,000 Golden ELDERS, Golden ERICA, HOLLIES in varieties, LAURELS.
80,000 English OAKS, and large quantities of SYCAMORE, BEECH, POPLAR Scotch PRIVETS, and other TREES and SHRUBS, all of the finest possible growth, and well rooted.
Catalogues may be obtained on application at the Nurseries as above, or from the Auctioneer, Wicksworth.

Loughborough Auction Rooms.

MESSRS. PEED and GREAVES will SELL by AUCTION, at the above Rooms, on WEDNESDAY, October 29, at 12 for 1 o'Clock prompt, about 100 Lots of PLANTS, including choice Greenhouse Plants, Azaleas, Camellias, Acacias, Fruit Trees, and Shrubs.
Will be on view on Monday and Tuesday previous to Sale. Full particulars and Catalogues to be obtained, post-free, from the Auctioneers, Loughborough Road, Brixton, S.W.

Hundleby, near Spilsby.

The Nursery is situated within half a mile of the Spilsby Station on the East Lincolnshire Line, Great Northern Railway.
MR. H. SIMPSON, instructed by Mr. J. W. Cole (in consequence of the expiration of the Lease of the Halton Nursery), will offer by PUBLIC AUCTION, on the Holly Nursery Grounds, Hundleby, on TUESDAY, November 4, the whole of the valuable NURSERY STOCK. Sale to commence at 11 o'Clock.
Particulars and cards to be had of Mr. Cole.

Hale Farm Nurseries, Tottenham, London.

AUCTION SALE

OF VALUABLE WELL-GROWN NURSERY STOCK.

Including several thousands of strong Dwarf Hybrid-perpetual, Moss, and Provence ROSES, in all the best varieties.
A quantity of Standard Hybrid Perpetual ROSES in best sorts.
A quantity of Dwarf Gloire de Dijon ROSES.
Oval-leaved PRIVET, very bushy stuff, invaluable for villa planting.
Many thousand EUONYMUS JAPONICA, 1 to 2 feet, very bushy, fine for pots and boxes.
Thousands of AUCUBA JAPONICA, specially fine bushy stuff, 1 to 2 feet.
TREE CARNATIONS, in best varieties.
SPIRÆA JAPONICA, LILY OF THE VALLEY, DIELYTRA SPECTABILIS, and other forcing stuff.
Thousands of Standard PLANES, LIMES, LABURNUMS, POPLARS, &c., in fine strong trees.
Large quantity of Common LAURELS, very fine and bushy, 2½ to 4 feet.
Thousands of Hardy CLIMBERS, all the best sorts, including JASMINES, LONICERAS, AMPELOPSIS, IVIES, ESCALLONIAS, &c
Thousands of LILIUM CANDIDUM, very strong bulbs.
A large quantity of HELLEBORUS NIGER, and H. NIGER MAXIMA.
Several thousands of extraordinarily fine strong forcing SEAKALE and ASPARAGUS.

The Sale will be held on TUESDAY, Nov. 4

Catalogues may be had on application to THOMAS S. WARE, at above address.

WANTED TO RENT, on Lease, about 2 Acres of LAND (with House preferred), within about 8 miles of Covent Garden Market, for Florist Trade, and the Erection of a few Greenhouses.
W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, a first-class SEED BUSINESS, in one of the largest towns in the Midland Counties.
Apply, Z. Y. X., Hurst & Son, 152, Houndsditch, London, E.

TO BE SOLD, a FLORIST'S BUSINESS, most prominently situated in a wealthy and improving neighbourhood, N.W.—This is a desirable opportunity, and worthy the attention of any young man about starting. Purchase money can be arranged.
M. C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

FOR SALE a NURSERY and SEED BUSINESS at the thriving Market Town of Denbigh (North Wales). Nurseries about 14 acres, with a good saleable stock of Forest, Fruit, and other Trees and Shrubs, Greenhouse, &c. Very favourably situated near to railway station. Land in good condition and on easy terms. Premises (leasehold, and rent low) for Seed Business situated in the centre of the town in the main street, to be disposed of on favourable terms to purchaser.
All particulars on application to Mr. HUGH ROBERTS, Crypt Chambers, Chester.

To Nurserymen, Landscape Gardeners and Others.

TO BE SOLD, by Private Contract, the BUSINESS of NURSERYMAN and LANDSCAPE GARDENER, carried on for nearly fifty years by the late Mr. Thomas Coudrey, and lately by his Son and Successor (who is declining the business on account, of ill-health), at the Edgbaston and St. James' Nurseries, Edgbaston, Birmingham
Apply, for particulars, at No. 6, Ampton Road, Edgbaston.

To the Seed Trade.

TO BE DISPOSED OF, in one of the leading Towns in Hertfordshire, an Old-established GARDEN and AGRICULTURAL SEED BUSINESS, doing an excellent Trade. The Premises are very extensive, and splendidly situated. Long Lease. This is a genuine concern, and to a business man a good opportunity offers. Satisfactory reasons given for disposal.
For particulars apply to X. Y. Z., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN AND ESTATE AUCTIONEERS AND VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

RICHMOND HORTICULTURAL SOCIETY, embracing Richmond, Twickenham, Isleworth, Mortlake, East Sheen, Kew, Petersham, and Ham.
President—H S H THE DUKE OF TECK, G C.B.
The FOURTH AUTUMN EXHIBITION of CHRYSANTHEMUMS and other PLANTS, FLOWERS, FRUIT, and VEGETABLES, will be held in the Assembly Rooms, Castle Hotel, Richmond (by the kind and gratuitous permission of G H Tod Heatly, Esq.), on THURSDAY and FRIDAY, November 13 and 14.
ADMISSION :—1st day, from 1 to 4 o'Clock, on payment of 2s 6d.; from 4 to 10 o'Clock, 1s. (The Exhibition will Close on the 1st day at 10 o'Clock). 2d day, from 10 to 5 o'Clock, 1s.; from 5 to 9 o'Clock, 6d. (The Exhibition will Close on the 2d day at 9 o'clock.
Schedules may be obtained on application to
J. H. FORD, Esq., Hon. Sec.
22, George Street, Richmond.
N.B There are 38 Open Classes.

THE FOURTH GRAND EXHIBITION of CHRYSANTHEMUMS, FRUITS, and VEGETABLES, Fine Art Exhibition Building, York, NOVEMBER 26, 27, and 28.
Group of CHRYSANTHEMUMS, arranged for effect, 9 feet diameter.—1st prize, a Silver Cup, given by the Right Hon. the Lord Mayor of York.
Twelve CHRYSANTHEMUMS, large flowered, in pots.—1st prize, a Silver Cup, given by the Sheriff of York.
Twenty-four CHRYSANTHEMUMS, large flowered, cut.—1st prize, a Silver Cup, given by the ex-Sheriff of York
Other liberal prizes offered. Schedules, &c., to be obtained of
8, Spurriesgate, York. J. LAZENBY, Secretary.

INTERNATIONAL INVENTIONS EXHIBITION, London, 1885.
DIVISION I., *INVENTIONS*. DIVISION II., *MUSIC*.
Patron—HER MAJESTY THE QUEEN.
President—H.R.H. THE PRINCE OF WALES, K.G.
NO APPLICATION will be RECEIVED after NOVEMBER 1.

SCHOOL of the ART of LANDSCAPE GARDENING and the IMPROVEMENT of ESTATES, CRYSTAL PALACE, S.E.
Principal—Mr. H. E. MILNER, A.M. Inst. C.E.
Lecture and Demonstration Rooms near the North Tower. Public Lectures, WEDNESDAYS at 4 P.M Prospectus and full particulars on application to the SUPERINTENDENT of the School of Art, Science, and Literature, Crystal Palace.
Mr. MILNER has moved his Offices to the above address, where his professional work is now carried on.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

Hyacinths in Pots.

POTS made expressly for HYCINTHS can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Rhubarb and Seakale Forcing.

STRONG well-made POTS for the above can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 25, 1884.

THE GARDENS AT HIGHBURY.

MR. CHAMBERLAIN'S noble mansion, with its surrounding grounds, is situated in such a pleasant part of the country that the task of laying-out the garden must have been greatly simplified by that circumstance. The natural beauty of the curves and the undulations of the hilly ground no doubt suggested many of those beautiful views which now present themselves, each complete in itself and having a totally different aspect when viewed from different points, but nevertheless all in harmony one with another.

Situated on the crest of a hill within four miles of busy Birmingham, but so placed that but few indications of the proximity of so large a town are to be seen, Highbury commands on all sides an extensive view — that on the garden side, which stretches far away over the Worcestershire country, being truly magnificent, and reminding one of those lovely Surrey views which are so pleasant at al seasons of the year. In viewing the garden and surrounding country from the mansion one great feature attracts attention, and that is that the garden and grounds are so arranged and planted that, seen from the higher points, they are in thorough keeping with the scenery around, and, indeed, seem to form an uninterrupted part of it, no fence, wall, or other line of demarcation being visible anywhere around the estate. The reason why the Highbury garden presents a feature so harmonious with its surroundings is that it is cleverly laid out, as it were, in a series of gardens on different levels, many of them backed by neat shrubberies or rockworks, and approached by winding walks, so that in looking over the garden from the highest ground only that appears which was intended to meet the eye from that point, and consequently to harmonise with the whole scene. Every turn, indeed, reveals fresh beauties to the visitor. Thus, from the upper ground too much gardening is not visible, and as bedding plants are not in favour, the laboured efforts which mar too many gardens and spoil too many scenes, do not appear; and the result is that a quiet, almost old-fashioned, air reigns over the whole place, the idea of repose being strengthened by the neat, orderly, yet informal character of everything around and by the frequent appearance of those cleverly arranged water views which are equal to anything of the kind to be found within the limits of a garden. Mr. Chamberlain's garden has been constructed with refined taste in every particular, and is one in which even our best landscape gardeners could pick up some useful ideas.

Passing down the smooth grassy slope with its naturally arranged hardy flower garden with a terrace at the bottom and thriving beds of Heaths, Kalmias, Pernettyas, Rhododendrons, and other flowering shrubs—along the winding walk with a shrubbery fronted with showy hardy perennials

on the left and the sloping garden on the right—the great rosery is reached. This forms a pretty garden in itself, and being nearly surrounded by shrubberies it is a pleasant and fragrant retreat in summer and a very useful garden too, great quantities of Roses being produced there from early summer until late autumn. At the back of it is one of those really natural looking alpine rockeries and rocky herbaceous plant borders, which are arranged at points of vantage in several parts of the garden, and which look so beautiful with their never-ending variety of hardy plants for which Highbury has become a stronghold.

Passing still down over the smooth turf planted with clumps of Rhododendrons mingled with Lilies and Foxgloves, past various peeps and views, and arriving at a lower level, another garden reveals itself—a large important, well-planted rockery, shelving down to the first piece of ornamental water, which, with its small island and tastefully arranged margin, forms a very pleasing break in the view. This is also a very interesting part of the garden on account of the many rare bog plants which thrive on the edges of the water, and in the rocky crannies formed for them. Among these some fine clumps of Cypripedium spectabile, and other handsome North American plants are in very fine order. The massive plume-bearing clumps of Pampas-grass are also very effectively arranged.

Continuing along the sloping garden, always with a goodly amount of evenly trimmed turf studded with rare shrubs in view, and with broad borders of showy herbaceous perennials on either hand—the most prominent by their handsome flowers at this season being the robust looking, white-flowered Chrysanthemum maximum, the elegant and not less beautiful C. uliginosum, the tall golden-headed single and double perennial Sunflowers, the many varieties of Michaelmas Daisies, and the yet abiding Phloxes and Delphiniums—the most beautiful scene perhaps in the whole garden discloses itself, and that is the lake, a really important piece of water, well stocked with fish, navigable by boat, and useful for skating in winter, but so skilfully formed and planted that with its Willow-covered island and its two rustic bridges it seems more like one of the reaches in a river than an ornamental water in a private garden. From the little Swiss cottage boat-house by the waterfall the view of the garden and the expanse of water with its varied tints of leafage, from the bright yellow of the Golden Elder to the dark green of the Conifers, is altogether delightful; and viewed from the bridge; although presenting quite a different aspect it is equally beautiful, in fact, this part of the Highbury garden is a triumph of the gardener's art.

Returning by the other side of the garden the ground is ascending, the shrubberies and hardy plants of the one previously passed over being continued, supplemented by beds in which each of the important classes of hardy perennials can be grown by itself; some are devoted to Japan Irises, others to Phloxes, Pentstemons, Antirrhinums, Potentillas, Pyrethrums, Clematis, &c., and these and the neat herbaceous borders continue until the large sunk Fern rockery is reached; this, too, is a well-arranged and quiet place, and as it is planted with the most varied collection of hardy Ferns procurable, it is interesting at all times. Beyond the rockery the ground still rises, and the view opens out until, arrived at the mansion again, the whole of it comes under the eye once more.

The glass department at Highbury is as well arranged as the open garden, the conservatory with its broad tessellated pavement and side stages of showy flowers being just the kind of place most suitable to step into from the drawing-room and enjoy the cool walk beneath the planted-out tree Ferns, Palms, and Camellias, and inhale the fragrance of the flowers without seeming to be in a plant-house. Next the conservatory is the Fern rockery under glass, a really beautiful display of naturally arranged rockwork, tastefully planted with the rarest and most beautiful Ferns. Not a flower pot is to be seen in this large building; and the foliage of the Ferns overhanging the rocks, and mingling with the coloured leaves of the Begonias which are planted around the basin gives a very pretty and natural appearance to the whole. From the fernery runs a broad corridor nearly 200 feet in length. This is not devoted to the cultivation of plants in pots, although it is sometimes used for a few resting Dendrobes, but its roof and back wall are covered with perhaps the most complete lot of climbing plants which can be found under one roof in the country.

Everything that is showy is there—Lapagerias, Passifloras, Kennedyas, Stephanotis, Hoyas, Dipladenias, and every other good thing mentionable, and a great many of them seem to be always in bloom, but one of the prettiest and most lasting is the scarlet Trumpet Honeysuckle (Lonicera sempervirens). The main use for which the corridor was intended is to connect the ends of the thirteen long span-roofed plant-houses which run out from it on the right-hand side and thus to allow of the whole of the plants being visited without the visitor once passing into the open air. This is a very convenient arrangement, and it has been well carried out.

ORCHIDS.—The greater part of the thirteen houses are devoted to Orchids, of which a noted collection exists at Highbury—some of the species being there managed in the best form. For example, Dendrobium Wardianum, D. crassinode, and most of the other Dendrobes which require growing well, here send out enormous growths, and furnish large supplies of flowers. Dendrobium superbiens, D. bigibbum, D. heterocarpum, D. Cambridgeanum (which had sixty flowers), and many others, which puzzle some of our best growers, are very robust, and so are the dwarf Cattleyas, C. Acklandiæ, C. Walkeriana, C. Schilleriana, &c.; and the Lælias in general and the plants of Odontoglossum Phalænopsis grow like weeds. Some of the usually shy growers are behaving remarkably well, and in particular may be noted a vigorous and verdant plant of Saccolabium Hendersonianum, which is sending up several spikes, and which has almost grown out of recognition; and the fine plants of Dendrobium Falconeri, which Mr. Cooper, the gardener, seems to have a special skill in managing. The Phalænopsis-house shows remarkable improvement in its occupants, and the whole of the general collection is in good condition, the Cattleyas alone having given some trouble owing to the weevil, or borer, having attacked the young growth, and done much mischief before they were observed, and caused much trouble afterwards. Ultimately it was found that the insect deposited its eggs in the young growths, and that the growths so injured started into premature activity, and if allowed to grow became deformed while nourishing the grub inside it. The plan was then adopted of cutting off the growths as soon as they were seen to have been bored, and thus the insect has so far been got rid of that it is becoming as scarce as it should be. The cutting off of the young growths does not cause half so much damage as many would suppose, as most bulbs have more than one leading eye to them.

Among the Orchid-houses a fair display of bloom is to be found, Cattleya Gaskelliana, C. exoniensis, Vandas, Lælias, &c., still giving flowers. The house for the display of Orchids in bloom is very prettily arranged, it is in reality a houseful of Maidenhair and other graceful Ferns, among which the Orchids in flower are placed; at present it is delightfully set up with many Odontoglossum Alexandræ, Epidendrum vitellinum majus, E. prismatocarpum, Dendrobium bigibbum, Cattleya exoniensis, C. bicolor, C. Eldorado, Cypripedium Sedeni, C. Lowii, C. Spicerianum, C. niveum, C. Schlimii, Odontoglossum grande, O. Pescatorei, Maxillaria grandiflora, Lælias, &c.

The houses which are devoted to general stove and greenhouse stuff are well filled, the Eucharis and other things for cutting, and the plants for table decoration being in fine order, and the large lot of Cyclamen and Cinerarias in the pits outside a long way beyond market growers' quality, and that is saying a great deal for them.

The large Odontoglossum-house is to the left-hand side of the corridor, and it contains a very fine collection of all that is good in Odontoglossums and Masdevallias, the condition of all of which leaves nothing to be desired in connection with them, as they are healthy, plump, and clean, and plentifully furnished with flower-spikes. In a cold pit outside is a vigorous lot of Disas, Cypripedium spectabile and Todeas, and beyond lies the kitchen garden, a range of vineries, and Peach, Melon, and Cucumber-houses.

In the lean-to Peach cases, Mr. Cooper has attained great success this year in growing most of the Mexican Orchids in the full sun and with a free current of air around them. Now in the most vigorous health are Barkeria elegans, B. Lindleyana, B. cyclotella, Lælia albida, L. autumnalis, L. majalis, Odontoglossum citrosmum, O. Londesboroughianum, Epidendrum nemorale, and many others, and all of them in excellent condition, and the Barkerias sending up flower, all having thoroughly enjoyed their sunny, airy quarters. It is pleasant to see that Mr. Cooper in the midst of his many duties gives his attention to these interesting matters.

New Garden Plants.

CATTLEYA (LABIATA) CROCATA, *n. var.* MSS., Sept., 1882.

THIS is not to be had in the trade. Probably it is near the Eldorado group, though the fine flowers are larger. It has a broad flower of the finest white, with a deep orange broad line running from the base of the lip on the anterior disc, where it expands into a pentagonal blotch, with teeth in front. The column is white, with a green base.

First I knew of it from poor Gustav Wallis, who said it was exceedingly rare; then Mr. F. Sander sent a dried flower, for inspection only; he, alas! wanted it back. I suspect Mr. F. Sander knows where it has its nest. In September, 1882, it was sent by and named for Mr. Edwin G. Wrigley, Howick House, Preston, Lancashire. You might compare it with Cattleya Wallisi, were it not for the deep orange in lieu of sulphur on the lip. I had it afresh once more—I am ashamed to confess I do not know from whom. Mr. R. P. Percival, Clevelands, Westcliffe Road, Birkdale, Southport, also kindly forwarded me a three-flowered grand inflorescence superior to any flowers I had seen before, though Mr. Wrigley's plant may equally have improved. It is to be highly commended. *H. G. Rchb. f.*

DENDROBIUM VIRGINEUM (NIGROHIRSUTA), *n. sp.**

This is a lovely thing, very near Dendrobium infundibulum of Dr. Lindley, a fresh Dendrobe from inexhaustible Birmah, now in flower with Messrs. H. Low & Co. It is much like the above-named species; the leaves, however, are nearly twice as broad. The flowers are only two-thirds the size of those of the named species, and the lip has, as its best recommendation, two singular light reddish, thickened, ligular lines from the base of the lip to the base of the mid-lacinia. Excepting this and some reddish tint at the base of column the flowers, which have a fine texture, are ivory-white, as well as the stalked ovary, only the back of the mentum has a light green hue, and the upper part of the ovary is of the gayest green, which looks very graceful. *H. G. Rchb. f.*

CATTLEYA BRYMERIANA, *Rchb. f.*

This very rare and very lovely Cattleya has appeared this year at two places. It flowered with Mr. F. Sander, and recently with Mr. E. Brymer, M.P., near Dorchester. It is a great satisfaction to read in Mr. Stuart Low's letter, accompanying two Brymerian flowers (from plants sent by the collector, Mr. White, to Messrs. Hugh Low & Co.), that he is now of my opinion in suspecting its being a natural mule between Cattleya superba and Eldorado. It is decidedly as lovely as it is rare, as stated before. *H. G. Rchb. f.*

TRICHOPILIA LAXA (*Rchb. f.*) VAR. FLAVEOLA, *n. var.*

A curious variety, which, in lieu of the usual brownish-reddish sepals and petals, shows them whitish-yellowish. It is by no means Trichopilia grata, Rchb. f., as that has a much shorter and broader lip, and a beaked anther. It was kindly sent me by Messrs. Hugh Low & Co. *H. G. Rchb. f.*

* *Dendrobium* (*Nigrohirsuta*) *virgineum*, n. sp.—Caule bene foliato; foliis oblongo ligulatis apice bilobis; racemo terminali plurifloro, mento extinctoriiformi abbreviato; sepalis lateralibus triangulis obscure carinatis; sepalo impari oblongo obtuso; tepalis rhombeis obtusangulis, labello trilobo, lobis lateralibus semiovatis crenulatis, lobo antico producto rotundo emarginato crenulato lineis incrassatis depressis subparallelis geminis a basi labelli in basin lobi antici.—Ex Birmah intd. cl. Low mer. Lond. *H. G. Rchb. f.*

AQUILEGIA GLANDULOSA.

During the last few years the Columbines have very greatly increased in popularity, and no wonder, for they are amongst the most handsome of herbaceous plants either for the herbaceous borders or for the rock garden. A. glandulosa and A. alpina are the best of the genus for the rock garden. A. glandulosa is quite hardy, indeed it prefers the moist cool climate of the north of Scotland to the warmer, drier southern parts of these isles. There seem to be two or three varieties of it, but they vary more in the size of the flowers than in their form and colour. It is probable, therefore, that cultivation has something to do with it. In dry light soils near London the plants deteriorate. It is not a plant that can be successfully propagated by division, but succeeds best if raised from seeds. The seeds ought to be sown in pots some time in April, they will vegetate either in cold frames or in a hotbed. When large enough they may be pricked out in pans or pots. Some time during the summer they may be planted out where they are to flower, and they like a deep, moderately clayey loam. Some of them may be grown in pots, and when well managed in that way they are extremely beautiful. Their worst enemy during the hot weather is red-spider; it attacks the undersides of the leaves, and is likely to do much mischief before it is destroyed. The flowers are of a bright blue colour, the tips of the petals white. The plant grows from a foot to 15 inches high, and flowers very freely. In saving seeds of this or any other species of Columbine care must be taken to keep them quite apart from others of the same genus, as no flowers are easier to intercross with each other. A. glandulosa is a native of Siberia. *J. D.*



Fig. 93.—Aquilegia glandulosa: sepals blue, petals white.

THE NATIONAL EXHIBITION AT ROUEN.

We left London lately *en route* for Rouen, *vid* Newhaven, for Dieppe, and thence to Rouen. The journey from Dieppe to Rouen is performed by rail in about an hour, through an interesting part of the country. The crops of corn were ripe, and reaping had begun generally. Splendid weather favoured us, and we made a very pleasant journey, admiring the fine scenery through this part of France, which is very diversified and pleasing; with the fine pasture-land, corn, and the fine trees, chalk hills being intermixed with the woods and green fields. Streams of water and rivers abound, also famous orchards of Apples. Altogether it is a very interesting journey to those who appreciate scenes of natural beauty. The Apple and Pear trees were for the most part loaded with fruit, which is grown in large quantities for making cider, and the Apples are also dried and find their market all over the world as Normandy Pippins.

We travelled on, passing towns and villages, with their quaint style of building, and came to the cotton manufactories in the valley of Trouville, with their hosts of chimneys and factories extending for miles up the river, which, with the foliage of the trees above them and the streams below, produced a very curious and picturesque effect. These tapering chimneys are well built, and the trees intermixing with them present a very different aspect to what we see in the North of England.

After we pass these factories the river Seine gets wider, and you see pretty islands well-wooded and dotted here and there in the water, and the high banks covered with trees with the houses intermixed, have a very pleasing effect. The Seine at Rouen is said to be about 750 feet wide; it is crosssed by two fine bridges, one of stone and the other a suspension bridge. There is a great deal of business done, especially in cotton fabrics. From the promenade a splendid view of the Seine both ways is obtained. The front of the Exhibition presented a very imposing appearance, there being a large and open space in front with a noble mound of trees above on the right. Entering the Exhibition building, which was well decorated with Palms and trees of different forms, we passed through the grand entrance until we came to the open garden, which was a large space with the Exhibition buildings all round, highly ornamented and decorated. The grounds were tastefully laid out in an undulated manner with lawns and broad walks, and were planted by various nurserymen with Palms and other foliage plants, also flower-beds and vases; there was a large piece of water with a fountain in the centre, which was planted with a variety of aquatic plants flowering beautifully. There was a band-stand at the end, also plenty of seats and summer-houses—the *tout ensemble* with the Exhibition all round being very agreeable. At the end of this garden was the chief object that attracted us there from London, which was a span-roofed house, 70 feet in length and 20 in width, with an entrance in the centre having a porch to enter by. This house was put up on purpose for the Comte de Germiny, Château de Gonville, France, which place is about 12 miles from Rouen, and who undertook to fill it during the time of the Exhibition, which lasted for several months. This was a wonderful undertaking for a private gentleman, and generous in the extreme, as he undertook to bear all the expenses connected with the display, and to find as well the large quantities of fine plants throughout that period, many hundreds of Orchids, as well as other plants, being employed. This gentlemen has large resources to pick from, and his glasshouses at Trouville are well stocked with fine specimens. We will now describe the inside of the house. It was laid out with a bed in

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the centre on the ground, which was over 60 feet in length and 6 wide; the side tables on each side were 4 feet in width, the middle had an edging round well planted with subjects with coloured foliage; the ground plan was one mass of beautifully variegated and green foliage, which formed a good foundation for the fine plants to be placed upon.

There were graceful Palms, Ferns, Marantas, Caladiums, and large specimen Orchids; up the centre and on each side of the middle row was a noble lot of specimen plants that did our eyes good to behold in fact it was one of the finest sights we ever saw grouped from one collection, and we were told that it had been continued all through the season. We will describe some of the most noted specimens, so that your readers may form their own opinion of them.

ORCHIDS.—Commencing with the Orchids, Cattleya labiata pallida was a noble specimen, having over twenty spikes of its pink andc rimson flowers and buds—it is a most beautiful and rare Cattleya; the plant was 3 feet in diameter, and had good foliage as well as flowers, which is considered the beauty of a plant; also a wonderful specimen of C. crispa, with its showy white and crimson-purple flowers, 4 feet in diameter, with twenty-eight spikes, bearing 125 expanded blossoms, which was a fine specimen, well cultivated. There were several other plants of the different varieties of C. crispa, which is one of the most useful Cattleyas, flowering as it does in August and September.

Associated with this were a unique specimen of Sobralia xantholeuca, a rare and remarkable plant, with many flowers of a creamy-yellow, the lip lemon-yellow, and the throat orange coloured; Epidendrum prismatocarpum, with twelve spikes of its curiously spotted flowers in good form and colour; a fine plant of Saccolabium retusum, with its fine spikes of showy white and mauve flowers; S. guttatum, one of the best; Lælia Turneri, finely in bloom, with its lovely rose and deep magenta-coloured blossoms; Cypripedium superbiens, a very fine specimen, with large flowers, and good in colour—one of the best of the barbatum section; Cattleya Harrisoni violacea very attractive in colour, and the charming Oncidium macranthum, with a fine spike of its showy blossoms. There were also several fine specimens of Vanda suavis, with many spikes of flowers; also different varieties of V. tricolor, plants 4 and 5 feet high, perfect to the pot; also several fine specimens of Phalænopsis, such as P. amabilis and P. grandiflora, with their white flowers drooping amongst the foliage plants with good effect; Cattleya Leopoldi, bearing several spikes of its spotted flowers; and Oncidium Lanceanum. Other well bloomed plants in flower were found in great numbers in the middle bed, which gave a pretty effect to it.

MISCELLANEOUS PLANTS.—Fine plants of Cocos Weddelliana were placed in position up the centre with their graceful foliage, together with Ferns and fine Caladiums, Marantas, and other foliage plants of different forms and colour; many fine specimens of Anthurium Scherzerianum giganteum, with forty or more of its bright scarlet flowers on each; numerous specimens of A. Andreanum, with many flowers of large size, also the new A. Ferrierense, with its rose-coloured blossoms. These Anthuriums contrasted well, intermixed as they were with Orchids and with ornamental foliage plants. There were many fine specimens of Lilium auratum and other Lilies, also the bright orange-scarlet Vallota purpurea, the Hæmanthus cinnabarinus, and other different sorts were very showy. There were many fine Amaryllis, such as Mrs. Garfield, Mrs. W. Lee, and Prince Albert, with enormous bulbs and bright crimson flowers; in fact, there were several dozen different kinds in bloom. This centre bed was edged with pretty Caladium argyrites and Adiantum cuneatum—a very pretty mixture. There were many other beautiful flowering and foliage plants in this bed, too numerous to mention. On one of the side tables were 800 Gloxinias in full bloom. There were many uncommon varieties among them, all seedlings raised in the Comte's garden. This establishment has a world-wide renown for its Gloxinias, and great credit is due to M. Rondeau for his perseverance in improving these plants—and the greatest variety of colour imaginable.

On the other side was a miscellaneous collection of Achimenes of various colours; also Ixoras, such as I. Pilgrimii and I. Williamsii, with fine heads of flower; many Ferns, Vallotas, Liliums of sorts, and a fine lot of Odontoglossum grande, Cattleya Dowiana, C. gigas, and others; Cypripediums of sorts, Odontoglossum Alexandræ and O. Pescatorei, and others; fine spikes of Masdevallias. At the ends of the house were fine specimens of Vanda suavis, 5 feet high, with several spikes; several fine plants of V. tricolor, V. superba, and V. planilabris. By the side of this were fine specimens of Anthurium Veitchii with its noble foliage; A. Waroqueanum with its magnificent dark green foliage; at the other end were Vanda suavis and V. tricolor, and Anthuriums, which had a noble appearance. The roof was decorated with many fine Nepenthes, such as Mastersiana, with its dark bronzy pitchers, which is one of the best; also good plants of N. Hookerii and N. Rafflesiana, and many others, which looked beautiful hanging from the roof with many bright-coloured pitchers. Intermixed with these were several specimens of Cattleya Dowiana, whose fine showy flowers were seen in great abundance; two Cattleya gigas in great beauty, several specimens of Stanhopea, their blossoms drooping from the bottom of the basket; Epidendrum vitellinum majus, with many spikes of flowers. Next this was a plant of Grammatophyllum Ellisi, with its curious coloured flowers; and the charming Cœlogyne Massangeana, carrying several long spikes; Barkerias and Phalænopsis, and other fine plants and drooping Ferns intermixed. The roof had a splendid appearance, and the whole arrangement was excellent. Great credit is due to the Comte de Germiny for the liberal and enthusiastic manner in which the show was kept up, and too much praise cannot be given to his persevering and energetic gardener, M. Rondeau, for his clever arrangements and good taste; for there was nothing left undone which could make it a scene of delight to the thousands of persons who visited this exhibition. It is to be hoped the committee will make some handsome recognition for the arduous labours that must have been caused by this show. *B. S. W.*

INFLUENCE OF STOCK ON SCION.

THAT the stock exercises a powerful influence upon the scion no practical gardener will for a moment doubt; and by way of supporting this assertion as much as sounding a warning note to growers whose intention it may be to graft some superior or well-tested variety upon some inferior, and, it may be, as in my own case, unknown variety to them, I will, with your permission, instance a most striking illustration and conclusive proof of this fact.

In planting the new vineries here, in 1881, I planted, among many others, a variety sent from Malta by a friend of my employer. The following spring a friend also sent me a small eye of the Gros Maroc Grape, which I rooted in a 3-inch pot, subsequently shifting it into a 7-inch one, and inarching it on a young Black Hamburgh Vine. During the interval from inarching the Vine in question and the perfect union of the scion and stock, the former, owing to the temporary check which it received in being inarched, pushed into growth a little way from the pot. In the meantime the "Maltese variety" produced a solitary bunch, which, by way of ascertaining what the variety was like, I allowed to remain and ripen, and which turned out to be a miserable apology, not only for a bunch, but also for a Grape; but, owing to the source whence it came, I did not feel justified in doing away with it until I had drawn the attention of my employer to its produce. But, anticipating what his verdict would be, and at the same time forgetting the results that such a union was likely to lead to, I determined to inarch on it the shoot of Gros Maroc referred to above, and which, like the one previously inarched on the Black Hamburgh, made most satisfactory growth then and since.

Now for results. The produce of the "Maroc and Hamburgh union" has been most satisfactory, but that of the Maltese union has been the reverse; not only in the size and form of bunch and berry of the Maroc injuriously affected by the union, but also the flavour and keeping qualities and general appearance of this fine Grape have suffered in consequence—so much so that several of your readers who have recently seen the produce of the two Vines, suspended side by side from bottles in the Grape-room here, could not recognise that obtained from the Maltese stock, which is a shrivelled mass as compared to the fine large oval heavily-bloomed berries of the Hamburgh stock. *H. W. W.*

GARDEN PALMS.

(*Continued from p. 427.*)

Arenga, Labill.—A genus of five species, four of which are in cultivation at Kew. When full grown their stems reach a height of from 30 to 40 feet, and are thick, ringed, and unarmed, unless when clothed in the long black fibres which cover the lower parts of the petioles. The leaves are pinnate, the segments being arranged regularly along the rachis, though sometimes a pair of segments are joined by their bases. The jagged or truncate end, and curiously lobed bases of the segments, are characters by which these Palms may always be recognised, the only other cultivated genera with which they might be confused, viz., Caryota and Didymosperma (Wallichia), differing in the former having bipinnate leaves, and in the latter being without lobes at the bases of the leaf-segments. Arengas are ornamental Palms, the graceful arching habit of their leaves, the dark shining green of the upper, and the silvered under surfaces of the segments, together with the thick network of strong black fibres which surrounds the lower portions of the sheathing leaf-stalks being both singular and attractive. "This fibrous substance," Seemann says "is superior to that obtained from the husk of the Cocoa-nut, and is renowned for its power of resisting wet. The coarser parts found with this 'vegetable horse-hair' are used by all the tribes who write on paper as pens, and they are the arrows used by others to discharge, poisoned or otherwise, from blow-pipes or arrow-tubes." A. saccharifera yields the Palm-sugar known in India as "jaggery;" "toddy," or Palm-wine and Sago are also obtained from this species, which is described as being one of the handsomest and most useful of Malayan Palms. The seeds of Arengas are enveloped in an Apple-like fruit, which is fleshy, generally 3-celled, and contains two or three oblong slightly angular dark brown seeds, which are about an inch long, rounded at one end, pointed at the other. The seedling leaves are simple, becoming pinnate when the plant is about a year old. Young plants assume a graceful character when about two years old. They are of sturdy nature, capable of withstanding the rough treatment of decorative work, &c.

A. Bonnetti, Hort.—East Indies.

A. obtusifolia, Mart.—Java, Sumatra.

A. saccharifera, Labill. ("Gomuti" and "Sugar Palm").—East Indies.

A. Wightii, Griff.—Malabar.

Astrocaryum, Meyer.—These are excessively spiny Palms, the foliage of even very young plants being covered on both sides with long sharp spines. When large every portion—stems, leaves, fruit-stalk, and spathe—is clothed with a thick covering of spines, which in some cases are a foot long. Most of the species form stems varying from 20 feet to 40 feet in height, and these have the spines arranged in rings all the way up. One of the cultivated species, viz., A. acaule, never forms a stem, the leaves springing at once from the ground. All the species are found in the rich, moist virgin forests of South America, chiefly in Brazil. Their preference for moist situations shows them to be fond of water both at the root and overhead, treatment which at Kew has resulted in several handsome specimens, which produce annually their spiny boat-shaped spathe, in which the flower-spike is enveloped. When young the spiny, elegant, pinnate foliage of these plants, and the silvery underside of the pinnæ, which are acuminate and not truncate as in Martinesia, are not wanting in attractiveness. To keep them healthy, especially when young, a hot, moist stove is necessary for them. The seeds of Astrocaryums are enclosed in a fleshy fruit, which varies in the different species from the size of a hen-egg to a Walnut. When fresh this fleshy covering is juicy and edible, and is said to be good food for cattle. In some of the species this rind is covered with spines. When dry the fruit becomes more or less fibry. The seeds are egg-shaped, smooth, dark brown, rounded at one end, narrowed to a nipple-like point at the other. They are

hard and white inside, like ivory. Seedling leaves bipartite.

In Regel's *Gartenflora*, t. 1022, a Palm is figured under the name of Astrocaryum iriartoides, Wallis, but the nature of the spines and their arrangement, and the truncate leaf segments of the Palm figured, denote it to be a species of Martinesia.

A. aculeatum, Mey.—"Gri-gri Palm" of Trinidad, Guiana.

A. acaule, Mart.—Rio Negro.

A. aureum, Griseb. and Wendl.—Trinidad.

A. filare, Hort. Bull.—Hab. ?

A. gynacanthum, Mart.—Guiana.

A. Malybo, Karst.—New Grenada (A. argenteum, Hort.).

A. mexicanum, Lieb.—Mexico.

A. Muru Muru, Mart.—Brazil.

A. rostratum, Hook. f., *Bot. Mag.*, t. 4773.—Brazil.

A. vulgare, Mart.—Brazil.

ATTALEA, a genus composed of about twenty species of tall, large-leaved Palms, of noble aspect when large, and ornamental when in a small state. Six of the species are cultivated at Kew, amongst them being the "Piassaba" or "Coquilla-nut Palm," and the species yielding the "Cohune-nut." Piassaba is a coarse black fibre formed by the splitting up of the outer portions of the sheathing base of the petiole of A. funifera. From this fibre ropes are manufactured, and the so-called whale-bone brooms are made of the same material. The seeds of this species are the Coquilla-nuts which are turned into very pretty ornaments and sold at church doors in Paris, &c., they are also used for making handles for parasols, walking-sticks, &c. The Cohune nut is the fruit of A. Cohune, from which a valuable oil is obtained. The Attaleas are unarmed, middle-sized Palms, with ringed stems, and large pinnate leaves, the segments of which are regularly placed along the rachis, and at right angles with it. A handsome specimen of A. Cohune in the Kew collection, although as yet stemless, has leaves 20 feet long by 6 feet wide, the segments extending down to within 2 feet of the base of the petiole. It is a most attractive Palm in this stage, the dark shining green, and almost erect position of its feather-like foliage being exceptionally fine even amongst Palms. All the species are natives of tropical moist forests of South America, and, therefore, thrive only in stoves with us. Young plants assume a graceful habit, and are robust enough to be employed as ordinary decorative plants. The fruits of Attaleas vary in size from that of a hen-egg to a Damson. They are perfectly ovoid in form, and enclose each a single seed of excessive hardness, which is generally mottled on the outside. The rind is composed of closely-packed fibres, and is about an eighth of an inch in thickness. The cotyledon is undivided and acuminate.

A. amygdalina, H. B. K. (A. nucifera, Karst.).—New Grenada.

A. Cohune, Mart., "Cohune nut."—Honduras to Guiana.

A. compta, Mart., "Pindova Palm."—Brazil.

A. funifera, Mart., "Piassaba" and "Coquilla" Palm.—Brazil.

A maracaibensis, Karst.—Venezuela.

A. spectabilis, Mart.—Amazon River.

MANGROVES AT THE ROYAL BOTANIC SOCIETY'S GARDEN.

THERE are now growing in the Victoria-house, in the gardens of the Royal Botanic Society, Regent's Park, some strong healthy plants of the White Mangrove, Avicennia sp. Hitherto it has been found next to impossible to cultivate any of the Mangroves, and perhaps those at the Park are the only ones now in England. Their habitats are the low banks or marshes at the mouths of tropical rivers, where they effect much good in reclaiming such unsanitary neighbourhoods, and building up dry land for the use of man. They are enabled to do this as they are endowed with several peculiar properties, such as the production of numerous interlacing aërial roots, which, forming a labyrinth or network, arrest and fix in place floating *débris* of all kinds.

The White Mangrove is provided with special appliances acting in a similar manner. Those at the Park have produced strong thick fleshy roots from the base of the plant, just below the surface of the soil. These extending horizontally throw up at intervals perpendicular shoots about the size of common lead pencils, which, indeed, in form and colour, point and all, they closely resemble. Whether these will eventually produce leaf-buds and grow into trees time must prove. Even in their present form they act as snags, or stakes, projecting from the surface of the water, massing together the floating *debris*, and thus answering the same purpose in the design of Nature as the aërial roots of other Mangroves.

It is an interesting fact that these specimens of Avicennia, imported to the gardens from the Andaman Islands, in 1882, remained in a very unsatisfactory and sickly condition until the autumn of 1883, when (at the suggestion of the Duke of Buckingham, who presented them to the Society), they were treated with sea-water, the effect of which was marvellous and almost instaneous: they started into growth, and have since remained in a very healthy condition. *W. S.*

NOTES ON THE CULTIVATED ASTERS.—I.

NOW that Mr. Bentham has remodelled the genus Aster in the *Genera Plantarum*, and recast and defined afresh its subgenera, and Dr. Asa Gray has published the result of his life-long study of its North American representatives in the volume of his *Synoptical Flora* which has just appeared, we shall have to arrange and name our garden forms afresh, in accordance with the result of their labours. I have gone through the collection of living plants in the herbaceous ground at Kew for this purpose, and in order to help other cultivators to do the same I propose in the present paper to give an outline of the general plan of arrangement that has been followed, and to describe briefly the cultivated specific types. When Dr. Gray was in England on both his two last visits he kindly took a great deal of pains to determine both the living and dried specimens in the Kew collection, so that there are very few of the 124 species which he recognises as inhabiting the United States, of which we do not possess authenticated specimens. Altogether, there are nearly 200 species now known, but of these not much over fifty are, so far as my own knowledge goes, in cultivation at the present time in our English collections. The United States is the great headquarters of the genus, but it is also represented abundantly in temperate Asia, in Japan, China, Siberia, and the Himalayas, and its out-wandering members are spread through Europe and South America, and reach even Natal and Cape Colony. By far the largest proportion of the cultivated types come from the Eastern United States. There are about as many species in the Western as in the Eastern States, and they are nearly all different ones, but as yet scarcely any of the Rocky Mountain and other Western types have found their way into English gardens. There are a great many plants loosely called Aster in gardens which do not belong to the genus at all. In this, as in all other questions of nomenclature, our Kew standard is the *Genera Plantarum* of Bentham and Hooker. The China Aster forms by itself the genus Callistephus; Boltonia differs from Aster by its short almost paleaceous pappus, Erigeron by its more numerous narrower ray-flowers, Felicia and Olearia (Eurybia) by their shrubby habit, and the former by its fragile, uniseriate pappus, and the latter by its cylindrical achenes. Solidago and Haplopappus belong to the homochromous series of Asteroideæ, in which both ray and disc flowers are a bright yellow, not the latter yellow and the former white or lilac, as in Aster and the other heterochromous genera.

The following sketch will give an idea of the subgenera as understood by Bentham and Asa Gray, which are represented by the cultivated species:—

Series I.—Perennials, with a pappus not separated into two distinct rows.

Subseries I.—Bracts of the involucre dry at the base, but furnished with distinct, spreading, leafy tips.

Subgenus I. EUASTER.—Bracts of the involucre furnished with large leafy points, the outer bracts usually gradually shorter than the inner. Ray-flowers fertile. Achenes with flattened faces. Pappus bristles moderately rigid in texture. Heads of flowers usually very numerous and copiously panicled. Examples: A. lævis, A. Novi-Belgii, and A. Novæ-Angliæ. To this subgenus belong half of all the wild species, and far more than half of the cultivated ones. It seems to be entirely confined to North America, its European representatives being only garden escapes.

Subgenus II. CALLIASTRUM.—Differs from Euaster by its narrower achenes, more rigid pappus bristles, and generally by its fewer and larger heads of flowers. Examples: A. Curtisii, A. radula, A. surculosus, and sibiricus; and here I think range best the European A. Amellus and its near neighbour the Himalayan A. Pseudo-Amellus, Hook. f. This is kept up as a distinct subgenus by Bentham, but now merged in Euaster by Gray.

Subgenus III. BIOTIA.—Differs from Euaster by its unflattened achenes and the shorter leafy points of the bracts of its distinctly multiserial involucre. Two species only, A. macrophyllus and A. corymbosus, restricted to the United States.

Subseries II.—Bracts of the involucre dry throughout, and not spreading or at all leafy at the tip.

Subgenus IV. ORTHOMERIS. — Bracts of the involucre dry throughout and adpressed, the outer usually gradually shorter. Ray-flowers fertile. Achene flattened on two faces. Pappus moderately firm in texture. Examples: A. ptarmicoides, A. glaucus, and A. acuminatus. To this subgenus belong five species of the Eastern and sixteen of the Western United States, only one of which we possess alive at Kew, and most of the Himalayan, Siberian, and Japanese species. For garden purposes it is distinctly inferior to Euaster.

Subgenus V. CALIMERIS.—Differs from the last by the bracts of the involucre being fewer, and nearly equal, and the setæ of the pappus shorter than the flowers and rather flattened. Example: A. Thomsoni. Entirely Asiatic.

Subgenus VI. GALATELLA. — Differs from Orthomeris mainly by the ray-flowers being sterile, the ovary and style being imperfect, and the stamens absent. Examples: A. acris, dahuricus, and canus. Few species, confined entirely to Asia and Europe.

Subgenus VII. LINOSYRIS.—Differs from the two last by the entire absence of ray-flowers. Examples: A. Linosyris, widely spread in Europe, and a few Siberian species.

Subseries III. Bracts of the involucre about equal in length and foliaceous throughout, as in Erigeron.

Subgenus VIII. ERIGERASTRUM.—Bracts of the involucre linear, or lanceolate, leafy from the base. Stem leafy. Heads large, one, or very few, with very numerous fertile ligules. Achene with two flat faces. Pappus moderately firm in texture. Examples: A. alpinus and A. pyrenæus. Mountains of both hemispheres. Few species.

Subgenus IX. BELLIDIASTRUM. — Differs from the last by its leafless peduncle, so that it closely resembles a Daisy. Only one species, A. Bellidiastrum, Scop., an inhabitant of the mountains of Central Europe.

Series II.—Perennials with a distinctly double pappus, the outer of a row of nearly equal, much shorter bristles.

Subgenus X. HETEROCHÆTA. — Dwarf, with one or few large heads and sub-equal leafy bracts. Examples: the Cape A. hispidus, figured *Ref. Bot.*, t. 342, and two other Cape species. Represented also by the Himalayan A. heterochæta and Siberian A. flaccidus, Bunge.

Subgenus XI. DOELLINGERIA.—Bracts of the involucre destitute of foliaceous tips. Ray-flowers white, inconspicuous. Achenes flattened, many-nerved. Pappus moderately firm in texture. Leaves broad and flat. Example: A. umbellatus.

Subgenus XII. IANTHE.—Differs from the last by its large bright-coloured ray-flowers and narrow rigid one-nerved veinless leaves. Example: A. linariifolius.

Series III.—Biennials and annuals.

Subgenus XIII. TRIPOLIUM.—Involucral bracts few, dry, lanceolate. Achenia compressed, those of the inner flowers sterile. Bristles of pappus fine and slender. Shores of the Old World. One species only, A. Tripolium.

Subgenus XIV. MACHÆRANTHERA.—Bracts of the involucre rigid at the base, with very large, spreading, leafy tips. Heads large, with bright lilac ligules. Leaves toothed or pinnatifid. Example: A. Bigelovii (A. Townsendii, Hook. fil.) and A. canescens. Exclusively American.

Besides these fourteen subgenera there are several others not at present in cultivation, in the perennial series Megalastrum, Heleastrum, and Hesperastrum,

and in the annual-biennial series Oxytripolium and Conyzopsis, the two latter both, like Tripolium, confined to saline localities. Of all these a full account will be found in the new volume of Dr. Gray's *Synoptical Flora*. *J. G. Baker.*

(To be continued.)

PALM BASKETS.

Visitors to Bordighera, on the Mediterranean coast, not far from Mentone, are not likely soon to forget the plantations of Date Palms, of all sizes, from the low bush to the stately shaft, surmounted by its crown of stiff foliage. For many years it has been the custom to make use of Palm leaves in religious ceremonies of the Romish church, for which purpose the leaves are blanched by tying them together so as to shield them from the light. Thus blanched they are dried, and in some cases gilded—a perversion of taste we can only lament. Recently a further use has been found for these leaves in the construction of ornamental baskets for holding flowers, living or dried, screens, and other decorative objects, at once novel and beautiful. For the two illustrations (figs. 94 and 95) here given we are indebted to M. Winter, of Bordighera, who has made a speciality of the manufacture of these elegancies.

SOME NEW VARIETIES OF IRIS.

I have now in flower in my garden what seems to be quite a new Iris. It is a bulbous Iris—a Xiphion; and its quadrangular leaves, as well as its general habit, show it to be closely allied to Iris reticulata. The form of the bulb, however, is different from that of I. reticulata, and the flowers are very different. The falls have a narrow claw and a lanceolate blade; the crests of the style are very long, triangular, and pointed, and the colour is a groundwork of white, with lavender or blue veins, producing a general effect of slaty-blue. It is not very valuable from a garden point of view, though if its flowering at this season (October 18) is normal and not exceptional, and if it prove quite hardy, it may be welcomed as a useful addition to autumn flowering bulbs. We treasure many things now which we should not care for amid the many joys of summer, and this Iris, having just that share of beauty which leads one to call it "a pretty little thing," is capable of affording some little pleasure at least. I do not propose to describe it formally now; indeed, I shall leave that and its christening to my friend Mr. Baker. I am in this note calling attention to it for the sake of pointing a moral.

My friend Mr. W. Besant, of the Palestine Exploration Fund, kindly put me into communication with Dr. Vastan, of Nazareth. That gentleman sent me last July a few bulbs and roots of Irises, gathered, I suppose, in Palestine, though I have not yet been told the exact localities. There were in all four kinds; one set of bulbs were those of I. sisynachinus, another set were of the Iris of which I am now writing; one set of tuberous roots were those of an Iris belonging to the Onocyclus group, and may be, indeed, probably are, new. The other set of tuberous roots were those apparently of an Iris, but from their characters must be those of an altogether new Iris. That is to say, of four Irises sent to me two, probably three, are new, and that from a land which every year is observed by hundreds of our countrymen and women, whose stay frequently lasts through the flowering season.

How is it that these many English travellers rarely ever bring back from the Holy Land anything else but common Anemones and Cyclamens when so many known beautiful plants, and, as this letter shows, so many unknown plants, might be brought home, and being brought home would fill with gladness the hearts of many of us?

My friend, Canon Tristram, has put me on the track of one or two Palestine Irises which I believe to be quite new, and which he describes as exceedingly beautiful; and I trust before long that I shall have them alive in this country, thanks to the kind exertions of friends resident in Palestine. But these and others ought by this time to have been well-known plants, if only those who travel would remember those who are forced to stay at home. *M. Foster, Shelford, Cambs.*

Orchid Notes and Gleanings.

Orchids at Laurie Park, Sydenham (the residence of Augustus Sillem, Esq.). — There is a choice collection here under the care of Mr. Billiald. Phaius tuberculosus is also well managed in the warmest house, growing in a bed of moist healthy green sphagnum. The conditions which command success in the culture of this handsome Orchid are a warm stove, a moist atmosphere, and the keeping the plants constantly moist in a pot full of living sphagnum. Nanodes Medusæ is better managed here than I have ever seen it anywhere else. It is grown in the cool house suspended near the glass, and seems to be kept moist, as the sphagnum is growing freely. Some of the woody stems are quite 14 inches in length, well furnished with leaves. There is a nice batch of Cypripedium concolor flowering in the warm house. It is a distinct and pretty species, not often seen in good condition. It seems allied to C. niveum, and would require much the same cultural conditions. Dendrobium Dearei has a large cluster of its charming white flowers. Phalænopsis Esmeralda forms a tall upright spike, and continues to produce a succession of its flowers for a long time. The flowers though small have violet-purple sepals and petals, a deep purple lip with brownish-purple wings. Oncidium Londesboroughianum has made capital growth, and has produced a very handsome spike. In the cool house Oncidium aurosum is nicely in flower: although it has been introduced rather plentifully during the last twenty years, it is not often seen in flower. It cannot be considered more than a third-rate species, but the small bright yellow flowers with brownish bars are pretty enough in their way. There is a very nice lot of Zygopetalum maxillare flowering in the cool house; it not only flowers very freely, but lasts a long time in good condition, and the rich blue tints on the labellum contrast well with other flowers. *J. Douglas.*

Brassia antherotes. — A species with long slender many-flowered racemes, flowers 6 inches long with very long narrow yellow segments spotted with brown; lip shorter, broad at the base, tapering at the point. It does best in the Cattleya-house slightly shaded. *Orchid Album*, t. 159.

Epidendrums.—This enormous genus is poor in good ornamental species, the really first-class ones being so few as to be counted on one's fingers. Bentham has added the Barkerias to the Epidendrums—an addition which gives a higher status to them in a horticultural sense. E. macrochilum is perhaps the finest of the species with short pseudobulbs, and its variety album is even better than the type. Of course we must not overlook the claims of the brilliantly coloured E. vitellinum, whose colours are literally dazzling to the eyes. E. macrochilum album is notwithstanding a first-rate Epidendrum, its dark brown petals and sepals, and broad white lip, with a yellow spot at the base instead of the purple of the type, being ornamental and a little out of the common. Several blocks of this white lipped variety are now bearing spikes of flowers in the Orchid-house at Kew. A block, with a littlesphagnum moss about the roots, and a place near the glass in the warm house, are what this Epidendrum requires. A totally different species is E. purum, which has Dendrobium-like pseudobulbs crowned with long, branching, gracefully arched racemes of white, Dendrochilum-like flowers. In the morning these flowers have a sweet Almond-like fragrance; a subject for the cool house. It is now in flower at Kew. A third species of somewhat attractive floral characters is E. ciliare, an old introduction from the West Indies, with long pseudobulbs and spikes of rather large white flowers, or rather the conspicuous lip is white, the petals and sepals, which are 2 inches long, being pale yellow.



Fig. 94.—Palm basket.

The form of the lip of this plant is rather singular. It is divided into three lobes, the two outer ones being half an inch wide by 2 inches long and deeply fringed all along the outer margin; the middle lobe is merely a long spine-like filament. Also in flower at Kew. *V.*

Small Masdevallias.—For those whose fondness for Orchids depends upon an admiration for mere size and brilliant colours only, the small microscopic species of Masdevallia have no charm. With the aid of an ordinary pocket lens, or even with good sight alone, by looking into the flowers of these small plants one may find much to admire both in their strange forms and in the beautiful nature of their markings. Take, for instance, the rare little M. triglochin and peer into its strange-looking horn-tipped flower, or examine the flowers of the equally curious species, M. trichæte, the singular M. triaristella—in fact any of the species belonging to this group will, on careful examination, be found rich in attractions both of colour and of form. It has been suggested by Dr. Reichenbach that the characters of these little Masdevallias reveal a close relationship between this genus and the Restrepias, and certainly it is easy to see a near approach in the flowers of the above-mentioned species to Restrepia elegans and R. antennifera. To any amateur wishing to possess a collection of pretty little Orchids, but whose means do not go beyond the possession of a small Wardian case placed in a window recess, these little Masdevallias would prove a great source of interest and delight, and with a little care there seems no reason why they should not prove happy and grow well under the conditions provided in such a case. The Restrepias might be added, for, like the Masdevallias, they do not care for bright sunlight, nor are they at all fastidious as regards heat and moisture, preferring little of the former and abundance of the latter. We saw the above-mentioned species of Masdevallia in flower at Kew a few days ago. *U.*



Fig. 95.—Palm basket. (see p. 524.)

Phalænopsis speciosa, *Orchid Album*, t. 158.—This was described and figured in our volume xvii. It requires to be grown in the East Indian-house, shaded from the hot sun.

Orchids at Westbrook.—The collection of Orchids at Westbrook, Sheffield, the residence of Alfred Wilson, Esq., is one of the best and most valuable in the district, and for years past has been noted for its excellence. The beautiful and refined flowers of the Orchids are greatly admired and appreciated by Mr. Wilson, who from time to time procures new varieties and others possessing special merit in order to make the collection as varied and attractive as possible. The houses devoted to their culture are never without blossom during the whole of the year, but it is in the summer months that the grandest displays are made, when the house set apart for those in bloom is well filled with beautiful and chaste examples of various kinds. During the season now passing away many most excellent spikes, well filled with fine flowers, were produced, and were much admired on account of their great beauty. Amongst the varieties now in flower may be mentioned Dendrobiums formosum, giganteum, Dearei, and heterocarpum philippinense, Cypripedium Veitchii, insigne, Sedeni, and Spicerianum: the sepals of the latter are more fringed, but not quite so long as are generally seen in this variety; Lycaste Skinneri, Oncidium bicolor and varicosum, both bearing very fine spikes; Zygopetalum Mackayi and Gauteri—the former is very good, the lip of the flowers being 2 inches in diameter; Epidendrum species, Masdevallia Davisii, Wagneriana, ignea, and Harryana; Lælia Dayana (two varieties), Pleione Lagenaria, Cattleya Eldorado splendens, a charming variety, the deep orange colour of the lip being very striking; Odontoglossum Rossii, Lindleyanum, Pescatorei, several varieties, one a beautiful white with broad sepals and lip 2¾ inches wide; O. Alexandræ, several fine varieties, one pure white, except the yellow colouring of the lip, a compact specimen, similar to O. Alex. Warneri: others have flowers 3½ inches in diameter, the spikes carrying about a dozen blooms. Amongst the Odontoglots are Uro-Skinneri and vexillarium rubellum, the latter, as its name implies, being somewhat more pink or red than the ordinary variety. Numerous varieties are throwing up spikes that will give a succession of blossoms later in the year, when flowers are more prized and better appreciated, both on account of their scarcity and contrast to the bleak and flowerless parterres of the outside pleasure grounds. Westbrook is situate just in the suburbs of Sheffield, but not sufficiently distant from the manufacturing portion of the town to escape the showers of falling particles of soot with which we are too familiar or the injurious gases which the atmosphere is impregnated with. Notwithstanding these drawbacks the head gardener, Mr. E. Pidsley, who is greatly interested in Orchid culture, contrives to keep them in robust health, and to flower them in a manner that would do credit to a much more suitable and favoured locality. *J. H. S.*

GLASNEVIN.

(*Concluded from p.* 488.)

Hardy and Half-hardy Bulbs.—One of the characteristic features of Glasnevin, seen so well nowhere else, so far as I know, in botanical gardens, is the luxuriant manner in which half-hardy shrubs, bulbs, and herbaceous plants are induced to thrive at the feet of low plant-house walls in the open air. The Belladonna Lily has long been so grown in many gardens (notably at Bicton), but a mere list of the rare and beautiful plants, which not only live and thrive, but absolutely luxuriate, in this way, would more than fill up the space now at our command. The following kinds are, however, of especial interest or beauty.

Foremost of all come the Crinums, which, as here planted in the warm and sheltered angles of the heated plant-houses, not only form striking fine-leaved masses, but they also bloom most profusely—much more so, indeed, than I ever saw them do under pot culture inside a hothouse. The kinds so cultivated are C. Moorei, C. amabile, C. Powelli, C. longifolium, C. longifolium album, and one or two others. Of course all intelligent gardeners are aware that the late Dean Herbert made quite a speciality of this genus, raising several hybrid varieties, and he was one of the first to cultivate them successfully in the open air. That "all real progress is slow," is a truism particularly exact as applied to cultural matters in our gardens, and so notwith-

standing all that the worthy Dean of Manchester told us, we are even yet quite timid at planting out our Crinums and Amaryllis in sheltered sunny places. Years ago I saw big clumps of these plants luxuriant and floriferous at the late Sigismund Rucker's garden at West Hill, Wandsworth; and even to-day a friend tells me of the beds of Vallota purpurea and Japan Lilies, which grow and bloom year after year at Muckross Abbey, near to that Eden of the West, yclept Killarney; but nowhere else, so far as I know, can Crinums be seen growing and blooming so luxuriantly out-of-doors as they can at Glasnevin.

Among other rare plants here is the old Lobelia (Tupa) Feuillei, and just now its hoary leaves are topped by spires of dark red blossoms. Kniphofia (Tritoma) caulescens here grows and flowers in full perfection, and the golden blotched form of Abutilon vexillarium is quite hardy, and flowers quite freely along with such plants as Dietes Huttonii, Tricyrtis hirta, Arum crinitum, and Jaborosa integrifolia. Tropæolum polyphyllum is here most luxuriant, producing a profusion of golden flowers on a creeping mass of glaucous foliage. Rodgersia podophylla and its giant relative, Saxifraga peltata, are alike effective; and that rare Crucifer, Megacarpea polyandra, grows and blossoms freely. Another rare plant, this time a Poppywort, Romneya Coulteri, a shrubby species with glaucous leaves and great white blossoms, four to six inches across, has flowered freely on a sunny wall during the past summer. Like Fremontia californica and other quick growing flowering shrubs of similar habits, this Romneya is liable to be short-lived. Another rare herbaceous plant which blossoms well here is Dicentra chrysantha. The outdoor plant department and reserve garden is in charge of Mr. Parnell, who has been here many years, having with the indoor foreman Mr. Pope, been originally a pupil and journeymen under the late Dr. Moore.

THE RESERVE GARDEN.—The little triangular walled-in garden (popularly known to initiated visitors as the "lock-up") is one of the especial features of the open-air garden at Glasnevin. It is interesting all the year round, and is used as a trial ground or nursery garden for rare plants and novelties, as well as for old-fashioned garden flowers long forgotten, but which are now being cherished and admired. Here in this sheltered place come the earliest Snowdrops and Squills, Crocus and Anemones; here also are great clumps of Cypripedium spectabile and of fine forms of some of the most showy native Orchids. The Kilmarnock Orchis, the spike of which may be likened to the inflorescence of a tropical Saccolabium in size, is here vigorous every year, as also is the early claret-coloured form of O. maculata and several other showy varieties not generally to be met with in a state of successful cultivation. The central portion of this garden is divided into nursery beds of rare or curious shrubs and trees of various kinds, but the borders around by the old grey walls are richly enamelled with hardy flowers and bulbs in their season. A very complete collection of Christmas and Lenten Roses are grown here, and there are also complete collections of Narcissus, Iris, Saxifrage, and Lilium. All the American Lilies are quite at home, and the rich claret-coloured bells of L. martagon Cataneæ are borne thirty to forty together on great spiring stems 7 feet high or more.

The new Montbretias are most floriferous here, and he North American Saxifraga peltata grows most luxuriantly, as also does its Japanese relative, the "Bronze Leaf" (Rodgersia podophylla). Garrya macrophylla forms a healthy mass of leafage on the wall. Here and there also are some choice old Roses and Ivies, and it is within the charmed circle of this little garden that Dicentra chrysantha and the Californian Poppy-bush (Romneya Coulteri) does so well. Tropæolum polyphyllum wanders about here on sunny beds and alleys at its own sweet will. This pleasaunce is bounded on its longest side by the well known Glasnevin Cemetery, the old Ivy-clad watch towers of which form interesting objects, being also monuments of the time when body-snatching was the usual manner in which anatomical subjects were obtained. The tradition is that in each tower watchmen, with their bloodhounds and blunderbus, kept watch and ward over the dead sleepers. This tradition may be true or not, but even to-day, while we admire the satin-like petals of the Romneya, the wail of a widowed mourner comes like the shriek of a Banshee as borne on the autumnal breeze.

In conclusion, we may point out that in recent years Mr. F. W. Moore, the energetic Curator, has made many important additions and improvements, and most ably fills the influential position his respected father, the late Dr. Moore, held for so many years before him. At present the garden (although originally founded by the Royal Dublin Society) is for the most part under Government control. To the people of Dublin it is peculiarly interesting, historically and otherwise, and thousands of visitors throng its grassy slopes and wander through the plant-houses during the summer season. As a really picturesque botanical garden it has but few rivals, and the garden-loving visitor to Ireland who fails to include Glasnevin among the sights to be seen will have missed a floral welcome such as but few other places of the kind can offer at all seasons. *F. W. Burbidge.*

APPLE TOM PUTT.

IN last week's issue I observed a slight notice of the well known West of England Apple, Tom Putt, and I think it may be interesting to some of your readers to know a little more concerning this, or more properly these Apples. There are five varieties known in Somerset and Devon under the name of Tom Putt, namely, Colbrook, Old Scarlet, Spicy, White, and Green Tom Putt. The three former are the most useful kinds, although the two latter are good for kitchen purposes. These Apples are, correctly speaking, of Devonshire origin, although Somerset is credited by some with being their native county.

I find on inquiry that the Colbrook, which is the oldest of the group, has been cultivated in Devonshire for upwards of 100 years, and was either raised by Sir Thomas Putt, of Gittisham, near Honiton, Devon, in the parish church of which is a monument erected to his memory, or by the Rev. Thos. Putt, rector of the same parish, and afterwards, from 1802 to 1835, rector of Ryme Intrinsica, near Yeovil, Somerset. It is generally the latter gentleman who is credited with being the raiser, but probably Sir Thomas had also something to do with it.

I have given the description of the three best and most useful kinds taken from fruits growing in Mr. Scott's nurseries at Merriott, and feel no hesitation in saying they are some of the most useful and best Apples in cultivation. They are very largely grown in the three counties of Devon, Dorset, and Somerset, both as cider and as keeping Apples.

Tom Putt, Colbrook.—First size, first quality (either as a dessert or cooking sort). September to December. Form roundish oblate, irregular in outline, obscurely and irregularly ribbed; wide in the middle, and narrowing towards each end. Skin pale yellow when ripe, but almost covered with fine dark crimson; much striped and splashed with deeper shades of the same colour. Stalk very short, and set in a deep, wide, irregular and shallow cavity, slightly russeted. Eye large, nearly closed, and set in a wide corrugated and generally shallow basin. Flesh white, crisp, rich and juicy, with a nice pleasant acidity.

Tom Putt, Old Scarlet.—First size, first quality, especially for cooking. November to February. Form oblate to dome-shaped, broad at the base, very even, smooth and regular in outline, and equal in size. Skin golden-yellow, but generally so thickly covered with dark brilliant crimson that very little of the yellow is visible. The base of the fruit is thinly covered with large, light, russety specks, which become thicker and smaller as they approach the crown, the whole covered with a beautiful bluish bloom. Stalk very short and thick, set in a very wide, deep, regular and rough russety cavity; the dark rough russet radiating over the base. Eye rather small for the size of the fruit, with long reflexed segments, generally closed, and placed in a rather shallow, wide and ribbed basin. Flesh white, tender, rich and very juicy, with a refreshing flavour. This variety is almost without a rival in form and beauty, the nearest approaching to it being Hoary Morning.

Tom Putt, Spicy.—First to second size, first quality. November to March. Form dome-shaped, even and regular in form, but variable in size, beautiful and handsomely formed. Skin orange-yellow, but almost covered with dark crimson, interlined and mottled, with the orange ground and tracings of light russet. Stalk in some fruits short and thick, in others about 1 inch long, thin, and protruding beyond the base, set in an even, wide, and deep cavity, lined with rough russet. Eye nearly closed and placed in an even, smooth, small, and shallow basin, or nearly level. Flesh yellowish, slightly tinged with red, and when cut transversely the seed cases show a regular star, surrounded by ten crimson specks (in the Old Scarlet variety these specks are eleven in number, and greenish; whilst in the Colbrook variety they hardly appear), juicy, rich, and perfumed with a nice spicy flavour. *W. R.*

Plants and their Culture.

STOVES.—FINE-FOLIAGE PLANTS.—The numerous genera of these habitants of the stove are very ornamental, and render the house attractive, especially so during the winter, when vegetation out-of-doors has so few attractions. Unless the house devoted to their culture be of considerable dimensions it is not advisable to encourage too much, plants that grow to a large size, as the effect produced is not nearly so good and variety is not so easily to be had, because of the room they occupy. Small sized specimens of healthy and vigorous growth are greatly to be preferred, unless plants are required for exhibition purposes. When a plant has reached its full growth, having regard to the house wherein it has been grown, the same can, perhaps, be used for a season or so in the conservatory, at the same time pushing on a duplicate of smaller size to take its place. It will pay to contrive to keep any suitable plant of large size when there is any such prospect in view as that just named, for another summer season. Unless such be the case we would either dispose of them in the way of business, or, failing that, consign them to the rubbish-heap, rather than spoil the many for the sake of the few.

Some plants that have become overgrown can be considerably reduced in size for the winter season. Specimens of the Marantas could, if necessary, have one-half of their foliage removed; Alocasias could be gone over, and have the older leaves thinned out freely, afterwards drawing them into closer compass with a few sticks. Large plants of Dieffenbachias, after they have been kept dry at the root for a time, could be cut down—when performing this operation, however, be careful not to let either the knife or the shoots come into contact with the mouth, or an unpleasant sensation will be produced—and kept dormant during the winter. Aralias could be treated in a similar way, keeping watch for the appearance of young shoots, and then giving the plants all the light possible. Cupania filicifolia is a handsome foliage plant that is not grown nearly so much as it deserves to be. It can be safely wintered in a warm conservatory if there is not room in the stove. Every second or third season it will require to be cut down, but previous to doing this it will be the safer plan to withhold water for some weeks, the plant being disposed to bleed pretty freely, and this loss of sap will tend to weaken the young growth.

When potting this plant the propagation of a fresh stock should be attempted from some of the roots of fair size that can be safely spared. Cyanophyllums and Sphærogynes take up an extra amount of room to grow them to perfection, and where they are now becoming tall, we would advise the tops to be taken off, and the larger leaves to be removed, relying on a young stock being obtained from lateral shoots. Overgrown Crotons will not pay for cutting down and waiting for fresh growths to refurnish them, but rather secure some of the most promising shoots for the propating-pit, and dispense with the old plants. Growths from 1 to 2 feet will readily strike in a brisk heat. Theophrastas and Rhopalas when becoming too tall can be treated in a similar way as advised for the Cupania. The propagation of the Rhopalas can at the same time be secured by cuttings. Acalyphas will be useful perhaps to do a turn at furnishing for awhile, their foliage looking well by artificial light; the same, too, can be used with effect for dishing up the dessert on special occasions when Vine leaves have become scarce. If the Cycads are wintered in the stove, it will be possible perhaps to dispense with a whorl or two of the oldest leaves, thus making rather more room for other things.

By various contrivances much may be made of the room at one's disposal, the old adage, "Necessity is the mother of invention," being very applicable to those who endeavour in gardening to extract the

utmost out of the space at command, and that sometimes under disadvantageous circumstances. Whilst overhauling the stock of stove plants, and previous to re-arranging them, it will be advisable to thoroughly wash and cleanse the same. Now is the time for a vigorous onslaught against the mealy-bug where any exists. When once an insecticide has proved to be efficacious we advise its continued use; this is far better than changing from one kind to another. We have for years past kept to the "Chelsea Blight Composition," finding it to answer our purpose admirably. With it we mastered this pest of our hothouses entirely. Whether this or any other mixture be used, it is always best to proceed with caution in making up the mixture; do not at first go beyond the printed directions, but gradually increase the strength when it is found to be necessary. We have used it 50 per cent. stronger than was recommended when employed against bug and white-scale, and always found it to answer. At this strength any insecticide should be effectual or it is not worth its price.

Between killing the insects we have named and injuring the plants by the application there is but a narrow margin, it is therefore highly essential to be careful in the mixture, not but that we would rather run the risk of injury to the plant than not to kill these insect parasites outright. All plants with large foliage that cannot be conveniently laid over a trough and syringed should be gone over carefully with a soft sponge, for which purpose the mixture that is being used will hardly ever require to be even of the strength recommended for the same by the vendors. In order to keep in check any aphis or thrips that may have escaped notice, an occasional fumigation will be advisable. These insects should not, however, be very troublesome whilst the fires have not to be pushed more than at the present time in order to maintain an average stove temperature.

Keep a watchful eye on all bulbous and tuberous rooted plants that have died down; the Caladiums are one of the first genus to suffer if allowed to be even a few days in a cool-house during the winter. A temperate-house will safely protect the Gloxinias and Achimenes, from which also they will start into growth more kindly in the spring when needed to be pushed. Should either of these class of plants be kept in a more than usually dry place, an occasional watering with tepid water will be beneficial rather than to run the risk of injury from excessive drought. *James Hudson, Gunnersbury House Gardens, Acton, W., October* 21.

Fruits Under Glass.

Pines.—Where the plants need rearrangement in any department no time should be lost in giving it attention; it is a pretty general practice to replunge successional plants either about this time or immediately previous to starting them at the commencement of the new year, but other than moving such as show their fruits prematurely—a fault, if it may be so termed, which Smooth Cayennes and Charlotte Rothschilds are liable to in the autumn, particularly those that are strong through being propagated the previous autumn, and filling their places with substitutes—we seldom shift them from the time they are potted into their fruiting pots until their fruit is gathered, for however carefully gone about, it is impossible to replunge fully grown plants without injuring them, and if such pots as diverge from the perpendicular, as well as the defects in the plunging material, can be rectified—as in our case they can be, through the beds being only of sufficient width to contain three rows of plants—the operation and its consequences may be avoided, providing the bottom-heat is derived from artificial means, otherwise it will be expedient to turn and replenish the beds with fermenting material, so that the required temperature may be kept up. This turning of beds calls for discretion, so as to prevent violent heating, and where leaves are employed only those that have done service a season for some other purpose should be used. Successional plants having been brought to their suitable winter temperature—viz., 60° at night and 65° to 70° by day, which may each be allowed to fall 5° during severe frosts, and a bottom-heat of 78° to 80°—will now need great care in watering to keep the soil at the roots moderately moist, the uniformity of which will be greatly assisted if the plunging material is likewise kept moist. Atmospheric humidity should be promoted by damping the walls and floors with tepid water, and although this must not be excessive, a parched air should not on any account be allowed. In mild weather when the temperature reaches 70°, a little air should be admitted. The above remarks apply likewise to suckers, the only exception being that the temperature of the air may range about 3° lower. We may remark that the fear of over-watering during the winter months sometimes ends in the plants being kept injuriously dry, especially the suckers, which are sometimes left unwatered until their roots shrivel to such an extent as to cause repropagation needful; and with the inexperienced this is possible, before any indication of injury is seen in the foliage. All sections of plants should be kept well up to the glass which, if dirty, should be washed so that the light, which is so essential during winter to maintain health, is not diminished. Fruiting plants should be afforded a compartment well provided with means of heating, so that a minimum atmospheric temperature of 65°, and a bottom one of about 85°, may be preserved in cold weather, without unduly driving the fires. Slight ventilation should be given when the sun causes the thermometer to exceed 80°, while overhead syringing may be discontinued otherwise the crowns may enlarge to an unsightly degree; the plants must however be daily syringed between when the weather is fine, and the floors be damped to promote moisture, which if accompanied with the proper watering of the plants with tepid guano-water, will cause the fruits to make good progress. The present is a suitable season for securing enough soil to meet a year's demand: the kind in which the Pine thrives best was described in the Calender for January 19.

Strawberries.—The progress of the plants as far as leaf growth is concerned has now about come to an end, but it must be borne in mind that although this stage is reached, the roots are fresh, and it is very important that they should be preserved in this state by being properly supplied with water when the rainfall is insufficient to keep the balls of soil well moistoned, otherwise success will be doubtful. Weeds should be removed from the pots carefully, so that the soil and surface roots of the plant are disturbed as little as possible, and late plants should be afforded situation a where they can reap the full benefit of the sun. A suitable place must be provided before severe frosts occur in which to winter the plants. The unsatisfactory results occasioned through stacking them is now very generally known, and the practice is seldom advocated or followed, yet it may be well to caution the inexperienced about it, as well as to point out the advantage of plunging the pots in cold-pits, in cocoa-nut refuse, coal ashes, or leaves; where they can be conveniently watered, and protected from inclement weather, or exposed when the weather is favourable. Where such convenience does not exist, the plants may be plunged in the open, but should rest on a well-drained foundation, and bracken or straw with which to cover them during spells of sharp frosts, should be kept in readiness for that purpose.

Vines.—Where ripe Grapes are required in May, an early house, if not already put in order for forcing, should be prepared without delay, and be closed early in the ensuing month, when the borders, if they require it, should be well watered at a temperature of 85° to 90°. The temperature should range near 50° at night, varying according to external conditions, and 5° to 10° more during the day, which may rise to 65° from sun-heat, when a little air should be admitted. A well moistened atmosphere must be maintained and the rods be syringed with tepid rain-water several times daily, so that the buds may be thus softened and assisted to burst, they must not, however, be allowed to remain saturated and should not be damped late in the day. A ridge of fresh leaves with some stable litter mixed with it, placed in the house, is a desirable and frequently recommended medium for promoting genial humidity, as well as saving other artificial heat; and where its appearance is not objected to, and it can be made use of, it should be turned daily so that the fullest extent of its assistance may be derived. It is not consistent with good practice to give the roots of early forced Vines the run of external borders, but where this is the case no time should be lost in covering the border with a thick coating of leaves, dry litter, or bracken, protecting it with sashes or shutters. Although we sometimes grow and fruit pot Vines we do not depend upon them for a supply of fruit, and make it a rule to close a house of permanent Vines about November 1. The house is well supplied with the requisite hot-water pipes, and its situation is sheltered, moreover, its border—an inside one—is also provided with pipes; we are, however, no advocates for these, and consider them unnecessary; and, moreover, great care and watchfulness are wanted in order to prevent injury being done by them, and they should not be wanted after the laterals have made a free start. Vines in successional houses should be pruned and cleaned as soon as they are in a fit condition; it is a mistake to neglect this after the foliage falls, as there is no such thing as absolute resting in Vines, and consequently the longer they are left unpruned after they are ready for the operation, so will their energies be wasted upon the lateral growths. The borders will also need attention to keep them properly moistened. The continuance of extraordinary fine weather causes ripe Grapes to keep particularly well with ordinary care this season. *Thomas Coomber, The Hendre Gardens, Monmouth.*

The Hardy Fruit Garden.

All the remainder of the late Pears may now be gathered, choosing a fine, dry, sunny day to get them in, and let only sound fruit be stored away together, carefully naming each kind as they are carried to the fruit-room. Any fruit which is specky had best be put away by themselves for immediate use. The Medlar and Quince may also be gathered; the latter is sometimes made into marmalade, and is also used to give a flavour to Apple-tarts, which it is thought to improve. Walnuts ought now to be knocked down, and those which free themselves from the husk are fit for immediate use, but those which are firm can be put away singly in a rather dry place, when they will shell out of themselves.

Nearly all the late ripening Apples had better be gathered and housed; then look carefully, and note if there is sufficient for the supply of the family, and if there is a deficiency it should be made good while the price is reasonable.

Frequently look over the stores, and remove any decaying or specky fruit, remembering that "dead flies caused the ointment of the apothecary to send forth a stinking savour."

November is the best month of all the year to plant fruit trees, and now is the best time to choose the trees, and decide what and where to plant them, and to assist in this matter I would speak first of the kitchen garden walls. Those with a south aspect should be given to Figs, Apricots, Peaches, and late Pears; on the east walls plant Cherries; west walls do well for fine dessert Plums and mid-season Pears, especially those which are of a large size, which would be blown from standard trees before they are ripe; and the north walls should be planted with late Plums, late Cherries, and Morellos. But I would dwell upon a very common mistake, which is, mixing up different kinds together; so keep the Figs together, the Pears by themselves, the Cherries altogether, and so on; this looks better, and is much more convenient. Another grave mistake is deep planting: seeing that for years after the trees are planted the borders are subject to being raised by manure and other dressings, it behoves one to keep the tree tolerably near the surface of the border at planting time. If the soil is a stiff loam plant the Pears on the Quince stock, but not otherwise. The piers of the walls may be planted with Pears on the Quince stock; they will fruit directly and can be kept to their space by root-pruning: and in some cases the Sweetwater and Black Cluster Grapes can also be planted there—in very favourable seasons they will ripen and their leaves are useful for garnishing.

A great mistake is often made even in arranging new gardens; the fruit tree borders are not sufficiently deep. Seeing that the borders are always cropped, and as often as twice or three times in a year, it is quite necessary that the border should not be less than 2 feet deep, and if it is 3 feet all the better; and provided the drainage is good the trees will not be so likely to find their way to the subsoil, and will therefore continue healthy and be more fruitful. Subjoined is a list of those kinds which I can recommend, the major part of which are growing in the garden here and do well, 400 feet above the sea. They are arranged in the order of their ripening, and are worthy of a place on the walls. For a south aspect I recommend—Pears: Doyenné du Comice, Glou Morceau, L'Inconnue, Joséphine de Malines, Jean de Witte, Bergamotte d'Esperen, Beurré Sterckmans, Bezi Vaet, Winter Nelis, Ne Plus Meuris, Duchesse de Bordeaux, Beurré de Jonghe, Knight's Monarch, Marie Benoist, Chaumontelle, Oliver de Serres, Madame Millet, Van de Weyer Bates, Directeur Alphand. On a west wall—Marie Louise, Pitmaston Duchess, Napoleon, Doyenné Boussoch, Louise Bonne of Jersey, Thompson's, Van Mons, Vineuse, British Queen, Beurré Hardy, Gansel's Bergamotte, Zepherin Grégoire, Passe Colmar. Of Cherries, the kinds preferred are Belle d'Orleans, Black Eagle, Knight's Early Black, Early Lyons, Frogmore Early Bigarreau, Ohio Beauty, Noir de Schmidt, Bedford Prolific, Jocso-Sot, Frogmore Late Bigarreau, Bigarreau Grosse Cœur, Florence. The Figs which bear in great quantities here are Brown Turkey, Castle Kennedy, Brunswick, and White Marseilles. It is needless to say that Peaches and Apricots require a south wall, and, except in favoured localities, the former are best covered with glass. In my next I shall speak of orchards, and the trees and kinds most desirable for them. *J. Rust, Eridge Castle, Sussex.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Oct. 27	Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Bulbs, at Stevens' Rooms.
TUESDAY,	Oct. 28	Sale of Roses and Bulbs, and of Established Orchids, at Protheroe & Morris' Rooms. Sale of 5000 Lilium auratum from Japan, at Stevens' Rooms. Royal Horticultural Society's Monthly Show (three days).
WEDNESDAY,	Oct. 29	Sale of Plants, at Pounce's Nursery, Hendon, by Protheroe & Morris. Clearance Sale of Nursery Stock, at Ewing's Nursery, Norwich, by Protheroe & Morris (two days). Sale of Lilium auratum and Roses, at Protheroe & Morris' Rooms. Sale of Bulbs, &c., at Stevens' Rooms.
THURSDAY,	Oct. 30	Sale of Orchids, Tree Ferns, &c., at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms
FRIDAY,	Oct. 31	Sale of Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 1	Sale of Hardy Bulbs, Plants, &c., at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms.

DR. SCHLICH'S report on FOREST ADMINISTRATION IN BRITISH INDIA for the year 1882—1883 is very encouraging. The revenue has increased rapidly, probably from the destruction of private forests — not altogether an unmixed advantage, but one likely to increase in proportion as railroad enterprise extends.

"Forest estates," says Dr. SCHLICH, "are properties requiring special and peculiar treatment, and in this respect they differ widely from land under ordinary cultivation. In the case of forests the produce of a particular year cannot, as a rule, be removed at once, but has generally to be kept for many years before it becomes fit for the special purpose for which it is wanted. The forest officer thus becomes trustee of considerable capital, on which he may, by overworking the forest, make inroads for a long period without the fact coming to the knowledge of the Government, or becoming even apparent to himself, unless a careful account is kept of the growing stock, and sales are duly regulated with reference to the capabilities of the forest and its powers of reproduction. As regards the latter point, special care must be taken to effect a restocking of all areas cleared for the market in the shortest time practicable. Where circumstances are favourable, this may be done in the natural way; but under unfavourable circumstances planting and sowing must be undertaken to augment the efforts of Nature, in order to prevent loss of time and a reduction of the possible yield of the forest. All these things demand that a strict control should be exercised over the working of the Government forests, and this can only be done by means of working plans, which should be prepared at first for the more important areas, but eventually for all forests.

"A working plan deals with all points connected with the management of a forest, amongst which the following are the most important; it ascertains—(1) The stock on the ground at a particular time; (2) the annual increase of the stock; (3) the quantity of material which may be removed annually; and (4) it arranges for the proper and immediate restocking of all areas cleared for the supply of the market.

"The degree of accuracy required in the collection of the data for a working plan depends chiefly upon the market value of the produce and the demands made on a particular forest. Where that demand equals, or even exceeds, the possible yield, the work must be done with the greatest minuteness, and everything must be arranged so as to obtain the highest yield which the forest is capable of returning under the most careful management. Where, on the other hand, the demand is as yet below the ordinary capability of the forest, a more rough procedure may be followed."

Forest conservancy in India is considered to be secure—a result that has not been arrived at without considerable opposition on the part of the natives, accustomed as they have been to roam at will through the forests, and to fell timber on no other principle than that of their own convenience for the moment. This suicidal policy was not checked for a long time, from the unwillingness of the officials to interfere unnecessarily with native rights and prejudices. The course of procedure for the future is laid down by Dr. SCHLICH in the following words:—"To derive the greatest possible benefit from these estates with the smallest possible inconvenience to the natives." The report further contains a summary account of the work done in the various provinces of India, and a series of valuable tables showing the expenditure and receipts for nineteen years.

The reports for the Madras Presidency indicate a period of transition and reorganisation, the southern circle, comprising eleven districts and fifteen "forest charges," being placed under Major CAMPBELL WALKER; the northern circle, with ten districts, under Mr. GAMBLE. The latter gentleman complains that he is called upon for information and for specimens of bees, cochineal, and silk—matters which have little real connection with forest work. "The Board," however, administers a gentle snub, and lay down their dictum that such matters are not outside the range of a forest officer's duty; as such a "revenue officer has peculiarly good opportunities of reporting fully on such matters." It would seem from this that a "revenue officer" may be called upon to deal with any actual or possible source of revenue irrespective of his special duties—to make himself useful, in fact.

—— FRUIT AND VEGETABLE SHOW. — We are informed that the exhibition which will be held on Tuesday, Wednesday, and Thursday next in the conservatory of the Royal Horticultural Society, and the last of the series of most successful meetings which have been held in connection with the International Health Exhibition, will be of more than usual interest and extent. It has been decided by the authorities to allow it to remain open until the close of the "Healtheries" at 10 o'clock, P.M., on Thursday, the 30th inst. All exhibits to be removed on Friday morning, October 31.

—— BLENHEIM. — We understand that extensive improvements are going on in the gardens at Blenheim; all the existing plant and fruit houses are being thoroughly renovated and altered, so far as necessary, to bring them up to the requirements of the present day, including a re-arrangement of the heating. Over a dozen new plant-houses are to be erected, with an excellent suite of rooms for the men. The grounds in the vicinity of the mansion are to be altered considerably, so as to do away with some of the abrupt slopes in that quarter. The Duke of MARLBOROUGH has appointed Mr. G. A. BETHELL, recently in Baron NATHANIEL ROTHSCHILD'S garden at Vienna, and previously at Baron ALPHONSE ROTHSCHILD'S princely establishment at Ferrières, to take charge of the gardens at Blenheim, and under his supervision the alterations are being carried out.

—— A DICTIONARY OF ENGLISH NAMES OF PLANTS "applied in England and among English-speaking people to cultivated and wild plants, trees, and shrubs," by WM. MILLER, will shortly be published by Mr. JOHN MURRAY.

—— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A letter before us, from a gentleman who has for many years been a subscriber, is not pleasant reading, but we insert it in the hope that it may stir up that large section of gardeners who have done nothing to help their companions, but who leave the work to be done by the few of their own profession and by outsiders who have many other claims on their liberality. "I do not care to help those who can, and will not help themselves. During thirty-three years here I have not been able to persuade any of my head gardeners to contribute to the society established for their benefit; so please strike my name from the list of your subscribers."

—— A QUEEN'S BOUQUET.—According to the *Illustration Horticole*, a bouquet recently presented to the Queen of the BELGIANS comprised no fewer than sixty-five species derived from the well-stocked stoves of the Compagnie Continentale d'Horticulture.

—— M. LUDDEMANN'S ORCHIDS.—This famous collection, which was sold in its entirety at Paris lately, has passed into the hands of M. le Duc de MASSA, of Foucauville, for the sum of 16,800 francs, probably considerably less than would have been obtained had the collection been divided into lots.

—— HÆMANTHUS KATHERINÆ.—A fine species, native of Natal, with lateral flower-stalks and broad oblong acute leaves, with canvas-like venation. The scarlet flowers are in terminal globose umbels, each with a narrow tube 1½ inch long, and a limb 2 inches across, with linear, obtuse, spreading segments, and long protruding stamens. The plant was originally described in the *Gardeners' Chronicle*, vol. vii., 1877, p. 656, and is figured in the *Botanical Magazine*, t. 6778.

—— NEW ORLEANS EXHIBITION.—The Horticultural Hall is, we learn, 600 feet in length and 194 feet wide through its centre. It is the largest conservatory in the world. It is substantially built as a durable structure, becoming, by arrangement with the city, a permanent feature of the Park. It is located on high ground in the midst of live-Oak groves. Surmounting the centre is a magnificent tower, 90 feet high, roofed with glass. Beneath this tower, in constant play, is a grand fountain. Twenty thousand plates of fruit, double the amount ever before displayed at any exposition, will be shown on tables extending through the hall. Around the hall will be arranged an infinite variety of rare tropical and semi-tropical plants, flowers and shrubbery. There is a tropical hothouse, 250 feet long by 25 feet wide, in which the most delicate flowers from the far South will be nurtured and made to bloom in their most brilliant perfection. Tropical fruits in the various stages of growth will be exhibited. Fruits of every section and the productions of all seasons will, by arrangements for stated supplies and thorough processes of cold storage, be available for exhibit. The most eminent horticulturists of the United States are engaged in arranging and perfecting the display. Cash premiums to the amount of 32,000 dols., are offered in this department, and contributions to its exhibits from Mexico, Central America, the West Indies and the different States of the Union will be unprecedentedly large and varied. The Exhibition opens on December 1, and will close on May 1.

—— SAXIFRAGA AQUATICA.—A stately Pyrenean species, also found in the mountains of Corsica. It has very broad channelled leaf-stalks, supporting roundish palmately-lobed hairy leaves. The numerous white flowers are arranged along the sides of tall erect flower-stalks. It is figured in the *Garten-flora*, t. 1167.

—— CHRYSANTHEMUM CINERARIÆFOLIUM. — This plant is figured in the *Botanical Magazine*, tab. 6781, October 1884, and from which we learn that it is the plant which yields the famous Dalmatian insecticide powder now so universally used, and the flowers of which are said to be the most valuable product of its native country, where it is also cultivated. It must not be confounded with the Caucasian insecticide Pyrethrum roseum, which is cultivated in France. A very valuable paper by G. B. LORING, on the cultivation in the United States of both these insecticides, with copious notes on the mode of application of their powder and preparations of it to insects that infest plants, is given in the report of the United States Commission of Agriculture. From this document it appears that the powder of both species is valuable as a general insecticide, specially in solution, but that it is not a universal remedy, and has serious disadvantages. Of the advantages the most notable is, that is it a specific in the case of aphides, house flies, and musquitos, or gnats, and if used with a pair of ordinary bellows, is very effectual in killing the commoner insects that infest plants in rooms and houses. The powder burnt is not disagreeable to smell, and is very effectual in rooms, wardrobes, and greenhouses. The alcoholic extract of the powder diluted in water, the simple solution in water, and the decoction in water, are all most useful in cases where the powder may be less effectually applied. The disadvantages are, that the result is not permanent; after half an hour insects may reappear on the plants that had been cleared, and be unhurt. Again,



FIG. 96.—VIEWS IN THE GLASNEVIN BOTANIC GARDEN. (SEE P. 525.)

actual contact with the insect is necessary in the open air; and powdering the upper surface of the leaf has no effect on an insect on the under-side. More important still are the facts that it has no effect on insect eggs, or hard chrysalis, on beetles with hard elytra, and on the vast class of Hemiptera (true bugs), whilst hairy caterpillars and spiders are proof against it. Hymenoptera, again, quickly succumb to its effects. The C. cinerariæfolium is an old inhabitant of botanic gardens, but it has not been known till comparatively recently that it is the source of the Dalmatian insecticide.

—— ORTHOCARPUS PURPURASCENS.—This is a curious and pretty Californian annual, introduced by HAAGE & SCHMIDT, with finely divided leaves, like those of an Eschscholtzia, the tips of the uppermost being tinted with violet. The figure in the *Gartenflora*, t. 1166, does not show the nature of the flower clearly.

—— THE HORTICULTURAL CLUB.—The first meeting and dinner of the Club in their new quarters, 1, Henrietta Street, Covent Garden, (Covent Garden Hotel), was held on Tuesday the 14th inst. There was a large attendance, including the Rev. T. Flintoff and T. H. Gall, Professor Michael Foster, Messrs. B. S. Williams, Geo. Deal, William Bull, J. S. Cousins, James Cutbush, H. M. Stollenhoff, H. Briscoe Ironsides, A. Bull, C. T. Druery, H. J. Adams, H. Baldwin, J. Wood Ingram, Shirley Hibberd, &c. Much satisfaction was expressed at the arrangements which had been made. Some interesting plants were shown, notably the remarkable form of Scolopendrium Kelwayi, by Mr. Stollenhoff, and a remarkable form of Blechnum spicant, by Mr. Druery. Mr. Baldwin, of Corner Hall, Hemel Hempsted, contributed ten varieties of Grapes grown in one house, including Golden Champion, Muscat of Alexandria, Foster's Seedling, Mrs. Pince's Muscat, Buckland Sweetwater, Duke of Buccleuch. These were all in excellent condition. The Secretary also contributed some excellent examples of Doyenné du Comice and Comte de Lamy—the two best October Pears grown. A pleasant and interesting evening was spent, and many good wishes for the prosperity of the Club were expressed. Two new members were admitted.

—— ALPHABETICAL CATALOGUE OF LILIES.—A Belgian Lily amateur, who does not wish his name to be published, has issued a synonymic catalogue of Lilies. All the synonyms are arranged in alphabetical order, and referred to their proper species. Such a catalogue will be very useful to all of us, both botanists and cultivators, for one cannot always remember on the spur of the moment to what species the numerous names that have been employed at one time or another belong. The botanical part is based on Mr. BAKER's paper, which we published in 1875. With references and explanatory notes the catalogue spreads out to forty-five pages. It is entitled *Table alphabetique des espèces et des principales variétés du genre Lis*, and it is printed at Gand by C. ANNOOT BRACKMAN.

—— NATIONAL CHRYSANTHEMUM SOCIETY.—The second meeting of the Floral Committee of this Society was held on Thursday evening last week, at the "Old Four Swans" Hotel, Bishopsgate, E. SANDERSON, Esq., presiding, and with only one exception all the members were present. A number of very fine blooms of Chrysanthemums were exhibited, and First-class Certificates were awarded to Colonel MALLACK for Japanese Chrysanthemums Monsieur Astorg and Monsieur Tarin. A sport bloom from a Japanese variety was also exhibited by Mr. PENFOLD, Leigh Park, Havant, but it was decided to defer any award until the sport was thoroughly fixed. The next meeting will be held on Thursday evening, October 30, and growers (whether members of the Society or not) are specially invited to send specimens of new or rare varieties for inspection.

—— ENCEPHALARTOS VILLOSUS.—In the magnificent collection of Cycads in the Palm-house at Kew there are male and female specimens of this species, and frequently one or other of them produce cones. Those of the female plant are very attractive when the scales burst asunder so as to expose the deep scarlet seeds, which are large, angled, and somewhat wedge-shaped. These seeds are very deceptive, inasmuch as they contain no embryo. There are five male cones on one plant at present ranging from 15 inches to 2 feet in length, exclusive of their stalk, and the effect is very bold and imposing. They are cylindrical in outline, tapering a little to each end, and the huge scales are thickened at the apex, like those of a Pine. The whole cone is of a uniform glaucous green colour till the internodes commence to lengthen in order to facilitate their dispersion of the pollen, when it gradually becomes pale yellow.

—— CHRYSANTHEMUM, YELLOW SPORT FROM MADAME DESGRANGES.—What will no doubt be acknowledged to be the finest early summer flowering Chrysanthemum as yet introduced to commerce can now be seen at Mr. WORMIG's nursery, Woking, Surrey. It is a sport of the well-known Madame Desgranges, which has been named G. Wormig, and is identical with its parent in size, shape, habit, and time of flowering, but of a fine pure yellow. The Floral Committee at the last meeting of the Royal Horticultural Society, when a dozen trusses were shown by the raiser, awarded it a First-class Certificate. It originated at Mr. WORMIG's nursery about four years since, when he noticed that one bloom of Madame Desgranges was half white and the other half yellow. Cuttings were taken from the shoots and produced these coloured blooms, some of which cuttings bore yellow flowers. It will meet with general demand for early decorative purposes out-of-doors, and for late summer bedding.

—— THEN AND NOW.—In 1817 the late Mr. W. BRIDGEWATER PAGE, then a celebrated nurseryman at Southampton, published his *Prodromus*, and under the head of "bulbous-rooted plants" he states that of the garden Hyacinth "there are more than 100 fine varieties of single, and as many of double named sorts." In September, 1835, eighteen years afterwards, Mr. W. J. NUTTING, then a seedsman in Mansion House Street, City, gave, in the *Floricultural Cabinet* of that year, a list of the best sorts of Hyacinths in cultivation, making seventy-two varieties, and of these fifty-eight were double and only fourteen were single flowered. One wonders what had become of a hundred single named varieties of 1817. There is no doubt that at the time Mr. NUTTING gave his list double Hyacinths were thought a great deal more of by Dutch raisers and English cultivators than they are at the present time. Of the double red varieties named by Mr. NUTTING half a century ago, Acteur, Bouquet Royale, Bouquet Tendre, Groot Voorst, Madame Zoutman, Panorama, and Waterloo, are found in a bulb catalogue issued for the present year by one of the leading wholesale seed houses; among the double whites, A-la-Mode, Anna Maria, Grande Monarque de France, La Déesse, and Prince of Waterloo; among the double blues, Envoye and Pasquin only; and notwithstanding the great improvements made in the single varieties, the following, grown by Mr. NUTTING, are still grown:—Single Red: Charlotte, Marianne, Lord Wellington, and Mars; Single White: Grande Blanche Imperiale, Grand Vainqueur, and La Candeur; Single Blue: Enricus, Emilius, and Grande Vedette. This throws some light upon the length of time that varieties of the Hyacinth remain in cultivation. The prices given by Mr. NUTTING are interesting, as enabling a comparison to be made with those charged in the present day. A few were sold at 9*d.* each, among them the old Groot Voorst; a few at 1*s.* each, many at 2*s.*, 3*s.*, and 4*s.* each. La Grande Vedette, still a good single blue Hyacinth, was charged at 3*s.* 6*d.* each. In those days the cost of getting Hyacinths from Holland must have been considerably greater than in these days of rapid railway and steamboat transit. In these days single varieties are produced much more largely than double ones, and the bulk of these go to the English markets. In other countries the double varieties maintain their old ascendancy, though the single forms are gradually winning their way to the front.

—— TOMATOS IN THE OPEN AIR.—A most successful crop of Tomatos in the open air has this season been grown by Messrs. C. STEEL & SON, market gardeners, of Ealing, in their garden in Gunnersbury Lane. There were about 2 acres of plants of the ordinary Large Red variety, planted in a fully open position, sloping a little to the north, and protected by a broad belt of trees on the west, some 50 yards or so distant. As soon as the lower parts of the plants were laden with bunches of set fruit (all the leading shoots and lateral growths having been kept pinched out), they were bent down towards the soil, and appeared to be almost flat on the ground, but yet so that the sun and air could reach them. This was done with a view to secure early ripening, advantage being thus taken of the heat reflected from the earth's surface. As soon as the fruits began to show signs of colouring they were picked and laid within frames used for raising seeds of Celery, Lettuce, &c., until they were ready for marketing. Thirty years ago the senior member of the firm used to grow Tomatos with equal success at Ealing. They ceased to do so because they lost the services of a skilled grower. They have now one who has caught the knack of cultivating Tomatos with the success set forth above. The crop found a ready sale at remunerative prices, and it has done something towards making good the loss sustained by the failure of the hardy fruit crop. Surely if Tomato culture can be so well managed in the open air at Ealing there is no reason why it should not be carried out in other parts of the country, and then there will be a chance of reaching the time when fresh Tomatos in plenty, and at cheap yet remunerative prices to the grower, can be placed within the reach of the million. Probably it will be said that the past summer was exceptionally favourable to the culture of the Tomato in the open air, and certainly too favourable a conclusion must not be drawn from the experience of one season.

—— A MODEL CONSERVATORY.—The Mayor of Bradford has just added a spacious conservatory to his residence at Daisy Hill, Bradford. The buiding, of square form, 40 feet long by 25 feet wide, is connected to the dwelling-house by an open corridor. The materials employed for the framework are red deal of small scantling strengthened with ironwork; the fronts have bold pilasters and ornamental ironwork over the transoms; the roof is of one span, of domical form, surmounted by a lantern, in which lead-lights of delicate tints have been used. All the latest improvements in ventilating and internal fittings have been introduced, the whole of the lights on a side opening simultaneously by means of a very simple and admirably contrived lever apparatus. The heating is by MESSENGER'S patent elastic jointed pipes, which, owing to the facility with which the joints are made or taken apart, are being very largely adopted for heating buildings of all kinds. The whole of the work has been designed and carried out by Messrs. MESSENGER & CO., Horticultural Builders, of Loughborough.

—— MR. SWAN.—We hear that Mr. W. SWAN, of Fallowfield, Manchester, is leaving his situation, on account of the breaking up of the establishment and change of residence. We hope Mr. SWAN, whose clever management of the gardens, and especially of the Orchids at Fallowfield, was well known, will soon meet with an engagement worthy of his abilities.

—— CITY OF EXETER APPLE AND PEAR EXHIBITION.—This exhibition is announced to take place in the Flower Market, Fore Street, Exeter, on October 30 and 31. The principal object of the exhibition is to attract attention to the recognised best sorts of Apples and Pears, and thus conduce to an improvement in the special culture of these fruits in the county of Devon. Prizes are offered in various classes, the leading one is for twenty-five distinct varieties of Apples; and throughout the schedule six fruits of Apples for a dish, and five of Pears. There are classes for culinary and dessert Apples and Pears; and also for single dishes of certain specified sorts such as Blenheim Orange, Ribston Pippin, &c., and the same of Pears. The Chairman of the Committee carrying out the exhibition is the Mayor, Alderman R. C. WILKINSON; the Hon. Secretary, Mr. J. ISAAC PENGELLEY, at the Guildhall, Exeter. The competition is confined to English grown fruit, and one of the rules sets forth that all specimens must be distinctly and correctly labelled with their proper description. It is to be hoped this rule will be insisted upon. Further, it would be of great advantage were a competent committee appointed to examine and revise the nomenclature of the fruits. This should be one of the main objects of an Apple and Pear show of this character.

—— THE FRUITERERS' COMPANY.—On Friday last, the 17th inst., the Lord MAYOR entertained at dinner the members of the Court of the Fruiterers Company. In accordance with a very ancient custom the Court of the Fruiterers' Company present the Lord MAYOR with a selection of fruit of all

kinds once in every year. The Master of the Company, George Hopcroft, Esq., was absent on account of indisposition, and his place was taken by Edward Tidswell, Esq., the Treasurer of the Gardeners' Royal Benevolent Institution, who presented the fruit to the Lord Mayor. After the ceremony was over Mr. Tidswell, then as Treasurer of the Gardeners' Royal Benevolent Institution, presented the Lady Mayoress with a magnificent basket of flowers prepared by Mr. Dickson, of Covent Garden. In the course of the evening Mr. Tidswell was very successful in securing many gentlemen as stewards for the ensuing dinner in July next of the Gardeners' Institution, and he was seconded in his exertions by Mr. Cutler, the Secretary, who was a guest of the Lord Mayor on the occasion.

—— Orchids at Ferrières-en-Brie. — M. Ernest Bergman writes :—We have had the pleasure of flowering the new Cypripedium Godefroyæ, and we showed it at the Paris Horticultural Society last Thursday (9th inst). It was rewarded by a First-class Certificate. This plant is very interesting. We sent the flower to Mr. Williams, who is going to publish it in the *Orchid Album*. By-the-bye, we see the enormous price realised by the Vanda Lowii at the last sale of Protheroe & Morris. The following are the dimensions of our large specimen :—6 feet (basket not included) high ; one main stem, from which start four big shoots ; from these again start two other shoots. It has 106 leaves, all perfect. The Orchids which are now in bloom at Ferrières are :—

Vanda tricolor
,, cœrulea
,, Batemanni
Cattleya Dowiana
,, gigas
,, Sanderiana
,, Harrisonii violacea
Lælia Perrini
Dendrobium infundibulum
,, formosum
,, Dearei (this last keeps in bloom three months and more)
Cypripedium Godefroyæ
,, Spicerianum
,, Sedeni
,, Ashburtoniæ
,, Roezlii
,, Harrisianum
,, Pearcei
,, barbatum
,, insigne
,, ,, Maulei
,, Chantini longifolium
Phalænopsis rosea
Phalænopsis violacea
,, antennifera
Oncidium Lanceanum
,, Krameri
,, Forbesii
,, cheirophorum
,, macranthum
,, tigrinum
Calanthe vestita lutea
,, Veitchii
Pleione lagenaria
Lycaste Skinneri
Maxillaria venusta
Cœlogyne assamica
Mesospinidium vulcanicum
Odontoglossum Alexandræ
,, grande
,, tripudians
,, Andersoni
,, Pescatorei
,, hebraicum
Masdevallia bella
,, chimæra
,, Reichenbachiana

—— Ceanothus Gloire de Versailles. — A very fine plant of this growing against an east wall on Mr. C. Turner's nursery at Slough is now in full bloom, and for its vigorous growth, freedom of bloom, and bright colour, it appears to be equal to any variety yet produced. The spikes of bloom are very large, and it promises to go on flowering up to Christmas if only the weather should prove favourable.

—— The Recent International Horticultural Exhibition at Dundee. — Mr. J. McIndoe, of Hutton Hall Gardens, Guisborough, takes exception to an allegation made in our report of this show, that the tip of another bunch was tied on to the tip of a disqualified bunch of Duchess of Buccleuch Grape, and consequently that by so doing the exhibitor, who was not named, attempted to deceive the judges. The circumstances, as set forth in our telegraphic report, were authoritatively stated to our reporter in the presence of the fruit judges. The facts of the case are set forth by Mr. A. Fowler, of Castle Kennedy, in a letter sent to Mr. McIndoe, and sent to us by that gentleman. A copy was also sent to our reporter, and both are now before us :—"Mr. Westing [Westcott], Raby Castle, and I, were engaged judging Grapes at the International Show at Dundee ; we came to [the class for] the best flavoured bunch, which were to be at least 1 lb. in weight. It was decided before tasting them to weigh some of the smaller bunches. Mr. McIndoe's was one of them. In cutting it from the board and lifting it by the stalk a portion like a small shoulder remained on the board. This at once arrested attention, and caused us to examine minutely the bunch, and how it was secured to the board, and whether the remaining part had been broken off—which it was not. The bunch was tied to the board, and secured in the usual way ; the additional bit was placed below the point, so as to appear as a part of the bunch before being disturbed, forming the apparent terminal point of the bunch. When weighed it was under 1 lb. weight without, and half an ounce over with the additional bit. On making this discovery we agreed to disqualify the exhibit, and wrote to that effect on the board." That an addition was made to the bunch is beyond doubt, and it is, moreover, attested by a letter from the Secretary, now before us, and Mr. Fowler expressly states it had not been broken off from it. Our reporter was informed that the added point was tied to the bunch, but as to the particular way in which the addition was made Mr. Fowler shows that our representative was misinformed, and we have to express our regret that that allegation was published. Mr. McIndoe furnishes us with an explanation of the occurrence, but marks it "private," so that we are debarred from giving it publicity, as we should otherwise do.

—— Narcissus serotinus, L.—This late species is now in fine flower at Floore Castle. Though introduced in 1629, it still remains a scarce plant, yet like several other African species requires one or two years to vegetate if once got thoroughly dry ; imported bulbs should be sent over in moist soil — then there is no difficulty in getting them to vegetate the first season. The two African species, N. canariensis and N. Broussoneti, are now appearing above-ground, a month earlier than usual.

—— Chrysanthemum Exhibitions. — The Wimbledon Horticultural Society will hold an exhibition of Chrysanthemums in the Drill Hall, Wimbledon, on Wednesday, November 19 ; and on Thursday, November 20, the Ipswich and East of England Horticultural Society will have a Chrysanthemum show also. The fixtures of exhibitions during this particular week are very numerous throughout the country.

—— Weald of Kent Gardeners' and Cottagers' Mutual Improvement Society.—The second annual Chrysanthemum show of this society will be held in the Vestry Hall, Cranbrook, on November 12 and 13, when, no doubt, the gardeners and amateurs of the county will make a good display of the Chrysanthemum.

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Oct. 20, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W. :—The weather has continued cloudy or dull in all parts of the kingdom, though very little rain has fallen. The temperature has been about equal to the mean in the "Channel Islands," but from 1° to 3° above it in England, 4° above over Ireland and in "Scotland, W.," and 5° in "Scotland, E." The maxima were very generally recorded on the 16th or 17th, and varied from 58° in "Scotland, N.," to 65° in the "Midland Counties" Ireland "land, S.," and to 67° in "England, S." The minima, which were registered either on the first or last day of the period, ranged from 33° or 34° over eastern, central, and southern England, to 43° in "Scotland, W.," and 47° in the "Channel Islands." The rainfall has been considerably less than the mean in all districts. Over the greater part of England and Ireland the fall was especially light. Bright sunshine has been much less prevalent than for some time past. In "Scotland, N.," the percentage of the possible duration was only 3, in "Ireland, S.," 8, in "England, N.W.," 9, and in "Ireland, S.," 11, while the largest percentages were 27 in "Scotland, E.," and 28 in "England, N.E." Depressions observed : — The only depressions observed in our area during this period were some rather well defined systems travelling eastwards to the northward of our islands and over Scandinavia. During the first part of the time pressure was highest over the Bay of Biscay and the west of France, but as the week progressed the high readings gradually spread to the greater part of England and Ireland. Light or moderate breezes from between west and north-west consequently prevailed generally, but on our extreme western and north-western coasts they occasionally backed to south-west.

—— Gardening Appointments. — Mr. W. Brown succeeds Mr. Tallack as Head Gardener at Prideaux Place, Padstow. — Mr. W. Sutton as Head Gardener to C. J. Leaf, Esq., Pains Hill, Cobham, Surrey, formerly at Eshald House, near Leeds.—Mr. E. Brown, late Gardener at Widmore Lodge, Bromley, Kent, as Gardener to H. Michel, Esq., Undermount, Bonchurch, Isle of Wight.

THE FALLING LEAVES.

As the time of year is upon us when trees and shrubs begin to shed their leaves, a few remarks bearing upon the subject may not be without their value to the practical gardener.

In considering the question, it is necessary to bear in mind that the natural aim of every plant is to produce a perfect seed, and that when growing in a soil and climate adapted to its special habits and peculiarities, it produces no more of each organ that it requires for the healthy perpetuation and reproduction of seed. When the leaf has fulfilled its office, the nutritive fluids circulating through it are withdrawn and it decays or dries up. These fluids are absorbed in great part by the stem, through the agency of the roots, and rising higher and higher are at length deposited in the seed ; the functions of the foliage being performed the leaves drop off, to be renewed in the following spring. Some interesting experiments of Zöller and Rissmüller* have shown that while in early summer the leaves of plants contain very considerable amounts of nitrogen, phosphoric acid and potash, these substances are withdrawn into the wood of the tree with the advancing season ; so that before the leaves fade they have lost the larger part of what was most valuable in them, which the tree retains for its future use.

In some of these investigations on the leaves of the Beech tree it was shown that in their water-free substance the highest "percentage amount" of nitrogen, phosphoric acid, and potash is found when they open or expand in the month of May, and this percentage quite regularly decreases till they ripen and fall, but the "absolute" amount of nitrogen, phosphoric acid, and potash, is greatest in July, and from that time on decreases.

At the Connecticut Agricultural Station last year samples of leaves were carefully picked from an Oak tree and from a Chestnut (Castanea vesca) on the following dates :—October 16 and November 13, and submitted to analysis.

On October 16 the leaves were bright green, and showed no signs of fading or changing colour.

On November 13 the leaves were brown, having almost entirely lost their reddish tinge. Leaves were falling from the trees, but not rapidly.

Analyses of the Fresh Leaves.

	Oak.		Chestnut.	
	Oct. 16.	Nov. 13	Oct. 16	Nov. 13.
Water	56 6	29 7	60.2	31 7
Albuminoids	5.3	3 4	4.3	4.2
Woody fibre	9 3	20 4	6 7	13 4
Non-nitrogenous extract	24 9	39 3	23.5	42.3
Ether extract	1.6	3 4	3.5	5.4
Mineral matter (a h) ..	2 3	3.8	1 8	3 0
Total..	100 0	100.0	100 0	100.0

The mineral matter (or ash) contained :—

	Oak.		Chestnut.	
	Oct. 16	Nov. 13.	Oct. 16.	Nov. 13.
Potash	.326	.173	.353	.384
Soda	.015	.029	.016	021
Lime	.688	1.426	.404	.864
Magnesia	.162	.288	.928	.443
Oxide of iron	081	.077	.181	.164
Phosphoric acid.. ..	.263	.260	.186	.230
Sulphuric acid	.060	.090	.086	.149
Carbonic acid	.418	.815	.259	.512
Silica, &c.	.317	.642	.100	.208
Total	2 330	3 800	1.813	2.975

The leaves gathered on October 16 had very nearly finished their assimilating functions, while those gathered on November 13, we may assume, had nearly or quite ceased to lose through resorption into the wood.

The green Oak leaves lost between one-third and one-half of the percentage of nitrogen in their water-free substance between the time that they began to change colour and the time when they became brown (dead). The corresponding gain is found chiefly in the woody fibre and in the ether extract.

* *Landwirthschaft, Versuchs-Stationen*, xvii, 30.

From the data obtained by the analysis of the Oak and Chestnut leaves gathered on November 13 it is seen that the newly fallen leaves, with about 30 per cent. of water, contained in 100 lb.:—

	Oak.	Chestnut.
	Lb.	Lb.
Nitrogen	54	67
Potash	17	38
Phosphoric acid	26	23

Stable manure, with 70 per cent. of water, contains about 5 lb. nitrogen, 6 lb. potash, and 3 lb. phosphoric acid. It must, however, be remembered, that while the nitrogen in stable manure is readily available as plant-food, it is exceedingly likely that the nitrogen of fallen leaves is comparably inert. From these facts we learn that Nature, in causing trees periodically to shed their leaves, returns with them to the soil a very large portion of the soluble inorganic substances which had been drawn from it by their roots during the season of growth. The amount of leaves which fall yearly, according to Ebermayer,* varies considerably, being larger in wet seasons than in dry—larger on a rich soil than on a poor one. It also varies with the thickness of the forests. Other things being equal, trees produce more foliage when standing apart than when standing in dense woods.

The degree of rapidity with which, under ordinary circumstances, leaves undergo decay, has also considerable influence upon the extent to which the soil is capable of being improved by any species of tree. The broad leaves of the Ash, Maple, and Sycamore, decay more quickly than those of the Oak and Beech, and these latter more rapidly than the needle-shaped leaves of the various Pine tribes. If the gardener desires to hasten the decomposition of fallen leaves for the purposes of compost, soils, or manures, it is necessary to add to them lime, wood-ashes, &c., as well as earth, pond or ditch-mud, and vegetable refuse generally. They will then be found to form an exceedlingly useful material for potting purposes. If a bushel of common salt (to six bushels of lime) be disolved in water and the brine be used to slake the lime, the action will be much more rapid, and a few weeks will suffice to set up a decomposition, when the heap may be overhauled, and the compost will be ready in a few weeks more. Instead of salt, muriate of potash may be advantageously used. It will probably act as well in the compost, and will also supply indispensable potash to the plants. *J. J. W.*

* *Versuchs-Stationen*, xviii., 63.

Florists' Flowers.

The Amaryllis.—At p. 331 it was stated that the resting period of these plants had arrived, and that the plants should not have any more water. If the plants are in pots, and plunged in a tan bed, many of them will yet have green leaves, but there will not be much moisture in them, and it will be as well to cut the leaves off near the crown of the bulbs. They can do no good to the plants in the stage they have now arrived at. The seedlings of this year are yet quite green, and growing freely; they will require a little water at times during the winter, and should be kept in a temperature of from 50° to 55°. Where the bulbs of the general collection are kept a high temperature would be injurious, and would probably start them into growth before their time.

The Cineraria.—The usual way of treating the Cineraria is to raise plants from seed every year. It is the easiest, and in ordinary circumstances perhaps the most satisfactory; at the same time it is not the method that should be adopted by those who seek for high-class quality in their flowers. If a really good seedling is obtained the plant should be selected to save seeds from to produce something better, and the plant itself must be propagated by taking offsets from it, which are produced from the base of the plant soon after it is cut over. I have known large handsome specimens to be formed by planting three examples of one variety in an 8-inch or 9-inch pot. Complaints have reached me this season of plants dying off suddenly, and of others flagging when exposed to the sun. This evil is produced either by over-growing the plants or by over-shading them and not admitting sufficient air. Some gardeners—and their numbers are not few—have an idea that the right kind of cultivation such plants as these require is to pot them in the richest compost they will stand without being actually injured by it, and giving them manure-water freely afterwards. How pleased they are to point to the vigorous growth of their plants! The large flabby leaves are thought to be evidence of good culture; but this is where they make their mistake, and it is one more often made by young gardeners than by those of larger experience. Plants produced in that way are not really healthy, although they may appear so, as it is these that are most likely to die off suddenly, or to hang out signals of distress by drooping their leaves. The plants should be grown in a good compost of loam four parts, decayed manure one part, leaf-mould one part, and a sprinkling of sharp sand. Artificial manures should be avoided in the compost. We are now potting the plants into their flowering pots. They should be potted rather firmly, be placed near the glass in a heated pit, and be well exposed to light and air. We draw the lights off in fine weather. Fumigate the plants occasionally, to prevent their being attacked by green-fly or thrips.

The Hyacinth.—The best time to pot the general collection is in the last days of October. That is the time that we pot those intended for exhibition. The Hyacinth likes a rich compost, but in this respect it also can be over-fed. When I first commenced their culture I was told that the best compost was cow-manure, loam, leaf-mould, and sand in equal parts. I soon found that the proportion of loam was not enough, and it was more than doubled with gratifying results. We mix the compost some two or three months before using it, in order that the manure may be more incorporated with the other materials. In potting the bulbs do not press them down into the soil, as this causes the compost to become hard under the root-stock, and may be the cause of some of them being thrown out of the soil. The right way is to open a space in the centre of the compost with the fingers; drop in a little sea or river sand; put in the bulb, and press the soil firmly round it, leaving the crown out of the soil; over the crown place a little sand, and the operation of potting is complete. We use 6-inch pots for nearly the whole of them; a few of the varieties that have small bulbs, and which on that account do not produce such a mass of roots, may be grown in 5-inch pots. A meed of praise should not be withheld from the last generation of Dutch florists (if it can be given without reflecting on the present one) for the high state of perfection to which they had brought the Hyacinth. The old flowers are certainly not surpassed; indeed, one can scarcely say that they are equalled by the newer ones, and when making up our order very few new varieties are included. There are certainly some novel and very richly coloured kinds recently introduced; and in the class for yellow or straw-coloured kinds an advance has certainly been made. It is some comfort to know that the best Hyacinths are cheap enough for cultivation in the smallest gardens, and the dealers tell us that the culture of this fine flower increases in England year by year. *J. Douglas, Ilford, Essex.*

EPIPREMNUM MIRABILE.

A couple of years ago I found among the plants entrusted to my care an Aroid, the *provenance* of which was a mystery to me; I did not know the name, nor could I recollect whence it came. It grew on nicely, and as it became more vigorous its leaves increased in size, and one day I noticed a leaf with a deep lateral sinus. After a time there appeared leaves with the same left and right, and now the leaves have grown much larger and are fairly pinnatisect. From this I inferred I had to do with Epipremnum mirabile, but still it was a puzzle to me how it came there.

A while ago, however, I happened to pot a few bits of Pothos aurea. One of them went wrong and turned green, and exhibits now, having grown more vigorously, the closest resemblance to the above-mentioned plant. And now I recollect also to have received some pieces of Pothos aurea prior to the time I noticed the Epipremnum. This induces me to suppose Pothos aurea to be the variegated juvenile form of Epipremnum mirabile. Has any one had similar experience? *J. F. Wilke. Zoological Gardens, Rotterdam.*

MR. CYPHER'S NURSERY, CHELTENHAM.

For many years past more plants have been exhibited successfully from this nursery at the leading shows in the country than from almost any other public or private establishment in the kingdom. It is no exaggeration to say that during the last ten or a dozen years thousands of prizes have been awarded to Mr. Cypher's plants in the principal classes at the largest shows, beginning with the spring ones, going on throughout the season, and not ceasing until late autumn. A large stock of fine-foliaged plants is kept up all the year round, but the flowering subjects change. In early spring the Azaleas are greatly depended upon; then come a valuable class of Ericas, Ixoras, Allamandas, and such like. Up to now in this year twenty-nine large shows have been attended, and 130 1st prizes gained. All classes are gone into, no matter whether they be for a single specimen or a group of five or six dozen plants. The majority of the plants are not quickly and easily run up subjects of the common Fuchsia and scarlet Pelargonium types, but huge and grand masses of the choicest and most difficult to cultivate hard and soft-wooded stove and greenhouse plants. Buying-in ready grown specimens is no part of the trade here, although many are sold in that state, and all have been propagated and cultivated on the premises; and at present there are many choice young specimens coming forward which will sustain the renown of this place so long as Mr. Cypher chooses to deal with them.

Leaving the Cheltenham Midland Railway Station, a walk of two minutes along the Queen's Road brings us to the nursery. Show-houses of a half stove, half greenhouse character, and a seed and spacious bouquet-making place, form the entrance to the nursery. The houses number upwards of forty, and cover close upon 2 acres of ground. They have not been all put up in a day or a year, but have been added to a small beginning from time to time as demands increased; they are, however, closely packed together, and are well adapted for specimen plant and general nursery stock culture. There is a special house for almost every class of choice plants, and we will here give a few details of these and their occupants. The Camellia-house is 70 feet long, 24 feet wide, and very high. The sides are brick for 10 feet or so up, surmounted with a glass roof. The plants are planted in a centre bed and round the edges, and bristle with finely formed flower-buds. These are in great demand about Christmas, and play an important part in Mr. Cypher's immense cut flower business. The roof of this house is beautifully clothed with the red and white flowering Lapagerias. Racemes of L. alba as long as one's arm were hanging from the roof, and they certainly do remarkably well under the same treatment as the Camellias. There are two houses devoted to Ixoras, 30 feet long and 12 feet wide each. Here are plants 3 feet high and 3 feet through, of I. coccinea, I. Colei, I. Williamsi, I. Fraseri, I Pilgrimi, and I. Westii, a valuable new pale pink free flowering variety. The roofs of these houses are adorned with finely grown plants of Dipladenia hybrida and amabilis. The Allamanda-house is 30 feet long and 12 feet wide. There are some dozens of large plants here, the majority of them, when tied in, measuring 4 feet 6 inches in height and 4 feet in width. The varieties are chiefly nobilis, Hendersoni, and grandiflora. Two houses are devoted to Stephanotis and Gardenias, the latter occupying the body of the house, and the former the roof, both being mainly grown to supply cut flowers. In a north stove we found a fine batch of Anthuriums. Few of them were in bloom, but Veitch's splendid variety of Scherzerianum were noble specimens, several being composed of over 100 massive leaves. I need hardly say they were in the finest possible health, and highly gratifying to see minus the flowers. Ward's variety was also here, and Andreanum, and another, named Cypheri, which in size and brightness of spathe excels all. A large batch of Dendrobium Falconeri was growing very luxuriantly in this house. The Heath-house is 40 feet in length and 12 feet wide. Of Erica Cavendishii there were four magnificent specimens, 5 feet high and 5 feet through, beautifully furnished from the rim of the pot to the crown, and as green as grass. Of E. depressa there are two, 4 by 4 feet, and we question if there are two better plants of this fine variety in the country. E. Austiniana is 5 feet high and 5 feet through; E.

Irbyana, 4 by 4 feet; E. Candolleana, 4 by 4 feet; E. affinis, 4 feet 6 inches by 4 feet; E. Lindleyana, 3 feet 6 inches by 3 feet 6 inches; and E. Marnockiana, 4 by 4 feet. These and many more Ericas are all grown in a mixture of the best peat and silver-sand. They are kept very cool at all times, many of them being placed in the open air in the autumn; not in the shade, however, but fully in the sun, with the pots protected from its rays. Careful watering is one of the secrets in their culture, and Mr. Cypher is to be congratulated on possessing such a magnificent collection of those valuable plants. It would be impossible to imagine any plants in better health or finer in every way, and it was no small source of delight to us to find that there was still a truly representative collection of Heaths in the country. Their culture tests the gardener's skill more than anything, and that, as we have indicated, is not wanting here. I might add that when under glass these plants are slightly shaded during the day, and at night the lights are drawn off, leaving them exposed in the summer and autumn nights. We noted about on hundred half-grown specimens in the same excellent condition as the large ones. The New Holland house is 60 feet long and 20 feet wide. This contains many well grown specimens. Darwinia tulipifera was 4 by 4 feet, and several very little smaller. Phœnocoma prolifera Barnesii, 4 by 3 feet; Dracophyllum gracile, 3 by 3 feet; Acrophyllum venosum, 2 feet 6 inches by 2 feet 6 inches; Aphelexis macrantha purpurea, 4 by 4 feet. Epacris were remarkably good in this house, E. miniata splendens measuring 5 by 5 feet, and Cordyline indivisa was 6 feet high and 5 feet through. Numbers of small Heaths, too, were quite at home here. There are three Azalea-houses, one 40 feet long by 18 feet in width, the other two being 33 feet long and 12 feet wide. A plant of the large white flowering Azalea Magnificent was 6 feet high and 6 feet through, beautifully trained, and one splendid mass of the most luxuriant growths. A. Charmer was of the same satisfactory dimensions, and so was A. Duc de Nassau, of which there were three of these grand specimens; A. Napoleon III., 5 by 5 feet; Mrs. Turner, 4 by 4 feet; A. grandis, 5 by 4 feet; and many others of almost equal proportions. These bloom in rotation in May and June, and are valuable for the early shows at Manchester, York, Bath, London, and elsewhere; when done blooming they are kept close in a warm house to make rapid and substantial growth, and when this has been accomplished abundance of air is admitted, many of them being placed in the open air to finish off the ripening of the wood. Peat and sand alone are used as rooting material. The Palm-house is a lofty structure, 60 feet long and 24 feet wide. The largest plant of Latania borbonica here is 16 feet high, and as much in spread of leaf. It is growing in a small box about 2 feet square, and is truly a magnificently developed specimen. Encephalartos villosus appears to be in habit something between a Palm and a Cycad, and as seen here it is more grand than either. The largest plant of it here, which is a weighty subject in competition, is only taken out on special occasions, when heavy opposition is anticipated, and certainly it is a telling subject. At present it has thirty fronds, each about 15 feet long, and they are of the most graceful description. This plant is about thirty years old. When the late Mr. Pilgrim was in his "palmy" days of showing, he bought this plant from Mr. Cypher for £20, and some years afterwards Mr. Cypher bought it back for £5, but both of these sums combined would not secure it now. Thrinax elegans is 16 feet high and 12 through; Pritchardia pacifica, rare and valuable, is 6 feet high and 5 in width; Areca Baueri is 12 by 10 feet; Kentia Fosteriana is 10 by 10 feet, and K. Belmoreana 8 by 6 feet. The Cycads are another class much valued for exhibition. There are three extra fine specimens, the largest of which is C. circinalis, being 12 feet high and 14 feet in diameter; C. revoluta is 8 feet through, C. media, 6 by 4 feet; and C. Normanbyana, 6 by 6 feet.

The Croton-house is 35 feet long and 18 feet in width. Some of the plants which had been out at shows in the early part of the season were dressed to begin growth anew—or rather undressed would be a more suitable term, as every leaf and small shoot had been cut from them, and the magnificent show plant of a few months ago was nothing but a skeleton of nude boughs, but they will soon be started into growth again, and develope their magnificent foliage. Those in show condition just now were remarkable for the brightness of the leaves; we never saw any Crotons more intensely coloured. They are all grown in two parts loam and one of silver-sand, charcoal, and peat. All the light and sunshine possible are admitted to them, and moisture is copiously applied to the foliage to keep them free from insects. The following are a few of the dimensions of the best of the plants:—C. angustifolius, 6 by 6 feet; C. Disraeli, 6 by 6 feet; C. Queen Victoria, 6 feet 6 inches by 6 feet; C. majesticus, 6 by 6 feet; C. Sunset, 6 by 5 feet, very distinct, and a favourite here; C. Johannis, 4 by 4 feet; C. Prince of Wales, 6 by 5 feet; C. Evansianus, 4 by 4 feet; and C. Warreni, 4 feet by 3 feet 6 inches. The Eucharis-house is 30 feet in length and 10 feet wide. Here there are twenty grand specimens in 16-inch pots. They are grown as valuable exhibition subjects, and also for the supply of cut flowers. Loam and manure are the ingredients in which they luxuriate, and provision exists in the house for plunging one or all if necessary. There are two houses 35 by 12 feet for the culture of Clerodendrons. There are twenty specimens 4 feet high and 4 feet through. We have now seen the majority of the exhibition plants, and they are really a unique collection. The main features of one and all are their clean luxuriant growth, wonderful floriferousness, and remarkable leaf colouring. Fresh air and a sweet atmosphere are two of Mr. Cypher's favourite assistants in high-class plant culture, and we were told that one of the secrets in growing fine large plants was never to allow them to become pot-bound until their full or desired size had been attained. Specimen plant culture, however, is not the only thing extensively and well done here, as the general nursery stock is worthy of special note. Of late Mr. Cypher has taken to Orchid culture, and his success with these is remarkable. I have never at any time seen Orchids growing in a more natural manner than they are here. The extent of their growths and extreme good health is all that possibly could be desired. The Cattleya-house is 60 feet long and 16 feet wide, and is filled to overflowing with fine batches of C. Mendeli, C. speciosissima, C. Leopoldi, C. amethystina, C. Dowiana, C. Warneri, C. Brabantiæ, and many others. The Dendrobium-house is 40 feet long and 12 feet wide, with two side stages and a walk up the centre. These stages are filled with plants in pots and the roof is completely covered with plants growing on cork and pieces of wood. D. Wardianum is a favourite here, and there are hundreds of it growing in this house and some others, the majority of them having produced from five to eight growths this season, and many of these are from 2 to 3 feet in length. There are also fine batches of D. crassinode, D. devonianum, D. nobile, D. nobile pulchellum, D. densiflorum, D. Brymerianum, D. Farmeri, D. densiflorum, D. Schrœderi, and D. Bensoniæ, the latter having made growth 18 inches in length in 3-inch pots. These are growing in peat and sphagnum moss; they receive little or no shade and plenty of air and water during the growing season.

The East Indian-house is 40 feet long and 12 wide. Here is a capital batch of Cypripedium Spicerianum, with many crowns, and leaves over 1 foot in length. C. Lowii was also fine here, as was C. Parishi, C. Veitchi, C. hirsutissimum, C. Sedeni, and all others of extra value. These have ample drainage, and their rooting mixture consists of loam and charcoal. In the same house there are many finely grown young plants of Aërides affine, A. expansum Senoiæ, new, rare, and a grand batch; A. virens superbum and A. Rohaneanum, opening its blooms for the first time. Of Vandas we saw many, including a number of plants of V. Sanderiana, which is the rarest of the class; several plants of it had seven pairs of leaves in a fine growing state. The true V. insignis is largely represented, and so was V. Cathcarti and V. Lowii.

In a cool fernery, 35 by 12 feet, there were many handsome specimens of Tree Ferns, and in front of these there were large batches of Lycastes, Odontoglots, &c., but the main body of the cool Orchids are contained in two special houses, 30 feet long and 10 feet wide each. O. Alexandræ, O. nebulosum, O. tripudians, O. Halli, O. Rossi, O. Pescatorei, O. Edouardi, and all the best in cultivation are to be seen here in quantities. Oncidiums and Masdevallias are doing remarkably well in these houses, and promoters of flower shows may soon expect to find Mr. Cypher fill their Orchid classes in as creditable a manner as he has done their fine-foliaged and flowering plant ones of late.

Space forbids us to extend our notes much further at present, but besides the houses named there are many low pits filled with large quantities of Bouvardias, Cyclamens, Cinerarias, Primulas, and there are two Pelargonium-houses and a Rose-house, from whence buds are in constant demand; as in bouquet-making and dinner-table decoration privately and at shows, Mr. Cypher and his eldest daughter, who superintends, this department, have gained a well-merited reputation. There are three new houses being erected just now. They are 72 feet long and 18 feet wide each, and, like the majority of the others, they are span-roofed; one is for Ferns, the second for Roses all the year round, and Chrysanthemums in winter, and the third is to be devoted to Gardenias and Stephanotis. Chrysanthemums are extensively grown, and they are excellent plants. The majority of them are growing in 12-inch pots, and they average 3 feet in height and 4 feet in diameter. They are well furnished with leaves, the lower ones being quite green, and hanging over the sides of the pots. They bear every indication of attentive culture. Outside this glass nursery and across Queen's Road there are 3 acres of ground devoted to the culture of flowers, Roses being one of the principal subjects; and there are fine batches of single and double Dahlias, Gladioli, &c. *J. J. M.*

The Rosery.

New Roses.—Circumstances have prevented my following up my notes on the Rose season, with, as I had promised, some on the newer Roses, but as, since that was written, I have paid a short visit to Paris, and have had the pleasure of a talk with my old friend Margottin, of Bourg La Reine, it is perhaps as well. If I remember rightly, I said the newer Roses, for I felt that the list of new Roses, *i.e.*, those of last season was indeed a small one, and that more interest would be attached to it if it embraced a wider area.

I have before me a list of the Roses sent into commerce in the autumns of 1882 and 1883, and, inclusive of those sent out by raisers in this country, the list contains upwards of 100 varieties; and yet, out of all these, omitting the English raised flowers, there are very few that have as yet obtained favour amongst rosarians on this side of this of the Channel; many of them have not even been seen, and so may be "wasting their sweetness on the desert air," while it is a great novelty in French Rose lists to see "Nouveautés Anglaises" occupying a prominent position. One can remember the time when Devoniensis was looked upon as the only English raised Rose, and then John Hopper took the Rose world by storm; since then they have been numerous enough, and some of undoubted excellence have been added to our lists, although amongst some French Rose growers there is still the lingering superstition that we cannot raise such Roses, and that because some Roses have been purchased in France, and sent out as if they were English raised flowers, that therefore all are the same. I have endeavoured to disabuse their minds on this subject, and I hope in due time that they will be a little more generous.

It is certainly somewhat remarkable that so few good Roses have been added to our list since 1877, when A. K. Williams and Gabriel Luizet were brought out. In the catalogue of exhibition Roses published by the National Rose Society I found but two or three, and certainly but one that in their respective classes have equalled them. With regard to the former, considerable discussion has taken place as to its constitution, and it is said that the best method of treating it is to bud it where it is to remain, for that when removed it is apt to dwindle away. Although I have combatted this idea, I am afraid that more extended observation induces me to believe that there may be something in it. This moderate growth is, I fear, its sole disqualification. It is beautiful in form, colour, and substance, is easily cultivated, and is a very free autumnal bloomer, and fairly disputes the palm amongst red coloured Roses with Marie Baumann. Gabriel Luizet is an equally beautiful gem amongst light-coloured Roses, but is not so free a bloomer in autumn as A. K. Williams, and was brought out in the same year.

Of the Roses of 1882 (autumn) there is not one to be compared with Merveille de Lyon; it is of the Madame Lacharme type of flower more than of Baroness Rothschild, of which it is stated to be a seedling; the white is, however, very pure, without a stain of flesh colour in it. It has been exhibited very largely during the past season, and has been universally admired. Some may object that the white is too dead; it has, however, as far as I can judge, one fault—full as it is, it is very apt in the exhibition tent to open too much and show the centre; and amongst several stands of twelve which I saw at Manchester there was not one where some had not behaved in this way. Of the other Roses (H.P.) of that season I do not know one that has excited any curiosity. Mr. George Paul, in his catalogue, speaks hopefully of Comtesse de Mailly-Nesle, which is described as of a beautiful flesh-coloured rose colour, with the petals bordered with white; but I have not seen it. Earl of Pembroke (Bennett) is a promising Rose, a sort of brownish-crimson, of good form and substance, and sweet-scented. I have seen this exhibited well several times. Lady Mary Fitzwilliam, another of Mr. Bennett's seedlings, was exhibited better in 1883 than during the past season; it is of a light rosy-pink colour, and was very charmingly shown in 1883.

Coming now to the Roses of 1883, we are still more in the dark. Hardly any of the French Roses of last autumn in the hybrid perpetual class have attracted any attention. There may be some to astonish us yet, but hitherto we have not seen them, and there have been a few English raised Roses which have attracted attention, amongst them Mr. Frettingham's Lord Frederick Cavendish, a vigorous growing red Rose, of very bright colour and good form; while Grandeur of Cheshunt for its size and brilliancy is likely to be a favourite.

In the class of Tea Roses there have been some good Roses added to our lists during the past two years. Souvenir de Thérèse Levet will be much valued by those who are looking out for dark Teas, and who would have admitted hybrid Teas into their class in order to gain colour. Personally I do not care for a high-coloured Tea Rose, at least anything deeper in colour than Madame Lambard (which Thérèse Levet certainly is). The great charm of Tea Roses is their delicately beautiful colouring and the refinement they display, and I must say that whenever I have seen this new Rose in a box, I have thought how much better it would have looked if a lighter Rose had been substituted for it. This is, of course, a mere question of taste, and for those who like colour this new Rose will be a welcome addition. Francisca Krüger is an excellent Rose, colour a sort of coppery-rose, or any other indescribable colour, such as occurs in this class, and defies the usual nomenclature of colour. The Hon. Edith Giffard is a fine new Tea Rose, in the way of Devoniensis, differing in the character of foliage, very vigorous, and of a creamy-white colour, it has been well exhibited, and will no doubt prove to be a very useful addition. Sunset, an American Rose, has been once or twice shown, and was very attractive; it is said to be a sport from Perle des Jardins, but darker in colour and shaded with deep yellow. Etendard de Jeanne d'Arc is one of the Gloire de Dijon race, and was raised by my young friend, Jules Margottin, who is removing from Bourg La Reine to Pierre Laffite, near St. Denis, on the Northern Railway, where he hopes to carry out, more successfully than even heretofore, his culture of Roses, Grapes, &c. It is almost white, and of dwarfer habit than Gloire. There are some other Tea Roses which are well spoken of but on which, not having seen, I cannot pass an opinion, such as Edouard Gautier, Madame de Watterville, Rosalie, and Souvenir de Rambaud.

Of the forthcoming Roses little if anything is known in France, one indeed is coming out under a great flourish of trumpets—Gloire Lyonnaise; which might have been heralded as a pedigree Rose. It has been raised by Guillot fils, and is said to be the issue of Madame Falcot and Baronese A. de Rothschild in the third generation. I confess that this puzzles me as much as the term "pedigree Rose" does. What became of the first and second generations? Then what is the difference between this and those which are described here as hybrid Teas? M. Guillot gives this the high-sounding appellation of a yellow hybrid perpetual, but if it is found after all to be more of a hybrid Tea, I fear it will be rather disappointing. Guillot himself (and he is a good judge, to whom we owe some of our best Roses) appears to be very confident of its success, for he has adopted the unusual plan of keeping it back until he has got a stock of 3000 plants, and is letting it out at, to the French raisers, the low figure of ten francs instead of twenty-five; not so a Portugese raiser, who is sending out a Rose called Lusiades, for which he has the modesty to ask fifty francs. It ought to be something beyond anything we have yet seen, and I fancy we shall have to wait a while before we see it. *Wild Rose.*

The Perle des Jardins Rose.—Is this Rose known to English growers generally? If not, I feel sure it would, from all I hear, well repay them to make its acquaintance. It is said to be the finest and most sweet-smelling Rose in California. The foliage and the branches are likewise ornamental, being rich and brilliant in their colouring, so that a few of its lovely buds, encircled by their own sprays, form one of the most exquisite bouquets imaginable. The Californians are great Rose cultivators, and they hold "Rose fairs" in the southern parts of the State. There was one at Santa Barbara last year, when a lady exhibited ninety varieties of Tea Roses, and had a pyramid formed of the blossoms cut from fifty-seven of the choicest specimen plants, and crowned with sprays of Deutzia gracilis and Adiantum fronds. The soil of Santa Barbara, as well as the climate, is said to be especially suited for Rose culture, and the exhibitions are often held at the end of April. The time, though, depends on the rainy season, as the early rain brings on the Rose buds, but if the rains are late the fair does not take place before May. *Helen Watney.*
[Yes. Perle des Jardins is a well known and highly valued variety, both for the garden and exhibition; it is said to be eclipsed by Etoile de Lyon, a Rose of the same character.]

Home Correspondence.

National Auricula, Carnation and Picotee Societies (Southern Section).—Pray permit me to remark, in reference to your report of a committee meeting of these societies held at South Kensington on the 14th inst., and by which I am informed that Mr. James Douglas was elected sole secretary for the ensuing year, that I have not resigned the post of honorary and financial secretary to which I was elected by the general meeting held on Feb. 12 last; and with great respect for the gentlemen your report says were in attendance, I decline to admit their power to set me aside in the very summary fashion indicated. The election of office-bearers in the societies has been hitherto noted in the annual general meeting called by a circular issued to the subscribers specifically setting out the business to be transacted, and though we have not hitherto had a code of formulated rules to follow, we have had what constituted at least a safe precedent. The summons for the meeting issued by Mr. Douglas had no suggestions of a general meeting, and the notice was not sent to every member of the committee even—gentlemen elected simultaneously with the renewed appointment of Mr. Douglas and myself to our posts of joint hon. secs. Mr. Douglas expressly states:—"I have written to the members of the above committees who usually attend, asking them to attend a meeting on Tuesday, 14th, to accept my resignation. I have hope that you also will be able to come." For the moment I abstain from further remark, save this: If after eight years of arduous and hearty service to the societies I am to suffer the indignity of expulsion, assuredly the work shall be done in the open, and after the supporters of the societies—the power that makes committees and secretaries alike—have had opportunity to express their sense in the matter. *E. S. Dodwell, Oxford, Oct. 21.*

Notes from the Botanic Garden, Oxford.—The Sorbus domestica in the Oxford Botanic Garden has this year borne a crop of fine fruit. The tree is one of the finest of its kind in England. It cannot spread far eastward, being in close proximity to a large Copper Beech, but from north to south the diameter of its head is 45 feet. It is 46 feet in height; at the ground level 6 feet 8 inches in circumserence, and at 3 feet above 4 feet 10 inches. The Nelumbium aspericaule, which, in the photograph sent, shows one flower only, produced later on a good number; the same may be said of Nelumbium luteum, the flowers and leaves of which have been remarkably fine, the latter measuring from 18 to 23 inches in diameter, and its flowers 9 to 10 inches in diameter. The floriferous sucker of the American Aloe figured in the *Gardeners' Chronicle* a short time ago, although at this time not one year old, has produced on a very small scale flowers (two only) and suckers which, in ordinary cases, plants of its kind require a considerable number of years to perfect. *B.*

Uredo Puccinia and Æcidium.—To prevent misunderstanding, I hope that you will allow me to say that you did not correctly report my remarks in the address at Chingford (see p. 498). I simply objected — as at present unproven—to the assumed genetic relationship of Æcidium with Puccinia, or Uredo; the two latter are doubtlessly connected, as they are constantly seen growing from the same mycelium. Æcidium, on the other hand, has never been seen anatomically connected with either Uredo or Puccinia. Neither did I denounce laboratory experiments, as reported; my remarks on experiments were entirely confined to the so-called heteroecismal laboratory experiments with the spores of Puccinia graminis and Æcidium berberidis. I of course esteem laboratory experiments at a proper and high value. *W. G. Smith.*

Large Pears.—We have gathered from nine Pitmaston Duchess trees, cultivated in pots of 10 inches diameter, about 4 feet high, which we imported three years ago from Messrs. Rivers & Son, of Sawbridgeworth, fifty-two Pears weighing 62 lb. 10 oz., twenty-four of which weighed 34 lb. 2 oz.; four, 6 lb. 10 oz.; one, 2 lb. 1 oz. On two trees in pots of Beurré Bachelier, of about the same dimensions, we had fifteen Pears weighing 12 lb. 15 oz.; of these two weighed 2 lb. 6 oz.; one, 1 lb. 4 oz. From two Beurré Diel, also of the same description, thirteen Pears weighed 12 lb. 10 oz.; of these two weighed 2 lb. 10 oz.; one, 1 lb. 9 oz. The competition not being great in this country I beg to inquire whether we have attained merely a common success, or whether we may lay claim to something more. We have further a Grape, weighing 11 lb., of White Nice, grown under glass, but not forced. I may further add, that the fruit is all in perfect condition, the Pears are beautiful in colour. *J. Ludecke, Gr. to R. M. Sloman, Esq., Hamburgh.*

The Gardeners' Royal Benevolent Institution.—I am sure many who, like myself, have read Mr. Cutler's letter in your issue of the 18th inst., deeply regret that the gardeners of the United Kingdom should manifest such indifference with regard to the augmentation of the Pension Fund, and particularly so when it is borne in mind that so small a sum is required to reach the £20,000 desired. The fact that an anonymous donor has offered £500 conditionally upon the £1750 necessary to complete the fund being forthcoming by December 31, has stimulated the committee and well-wishers of the Institution so far as to secure the amount within about £420. Surely if these facts were fully understood by the great body of gardeners the £420 would be obtained with little difficulty. If the gardeners continue so apathetic let those connected with them in the nursery and seed trade, who take an interest in the worthy objects of the Institution, determined to secure the £500 offered by collecting the £420. Gardeners are not too well paid we know, but if they brought the claims of the Institution under the notice of their employers I firmly believe it would be better supported. I suggest you should open a subscription list for a special fund to secure the £420, and if you are willing I shall be happy to send you a contribution, and do my best to influence others to do the same, so that the augmented Pensions Fund may be available for the year 1885. *Nath. Sherwood, Trustee of the Gardeners' Benevolent Institution.* [We shall be pleased to receive any sums that may reach us for the purpose indicated. Ed.]

—— Having read with great interest the various reports of the Gardeners' Royal Benevolent Institution, the last of which appeared in the *Gardeners' Chronicle* on October 18, may I ask if it would be a wise policy to publish a request in the *Gardeners' Chronicle*, and the various papers which are connected with the horticultural profession, so that at least the majority of the 20,000 gardeners who are employed might either read or hear of it asking for a small contribution, say one shilling each, which would neither break nor make any one, and for which they would be none the worse? Surely there are a great many who, with the same feeling as myself, would be pleased to subscribe a mite towards the support of their fellow-creatures who have done their utmost to place a profession in our hands when they become (as we know we all may be) unable to

follow their daily toil. I feel sure there are many of my opinion who would be greatly gratified to see a good sum raised by means of these simple subscriptions, and who would, as myself, willingly give them. *J. P., a Non-Member.*

Hedychium Gardnerianum.—I can fully endorse all your correspondent (October 11, p. 470) says in praise of the above. I find it a good subject for filling large glasses for the drawing-room, both on account of its fine spike, delicate perfume, and of the lasting properties of its bold foliage, which keeps quite fresh for a long time after the bloom has faded. The last spike was cut here quite a fortnight ago, and is quite fresh still. We have a young plant here in a 12-inch pot which last year threw up but one flowering-shoot. This year it has made six strong shoots, each bearing a spike of bloom, two of which were 15 inches in length. It has had no special treatment beyond being wintered in the early vinery. It was kept almost dry, and last spring it was not repotted, but removed into the conservatory. When it commenced to grow it had occasional doses of weak liquid manure. *W. H. Stephens.*

—— I am not at all surprised at the non-success of Mr. Gough (*Gardeners' Chronicle*, Oct. 11, p. 470) in flowering this beautiful Zingiberaceous plant for such a length of time, as, being a native of the East Indies, it requires considerably more heat (when growing) than most occupants of our conservatories. I have half-a-dozen large plants, which grow freely and flower regularly every summer. To do them well they require stove temperature while growing, until the flower-spikes develope themselves, when they can be removed to a greenhouse or conservatory to expand, the flowers lasting much longer, and the delicious scent much more powerful under this treatment. After flowering they should be kept in a warm light house until spring, when repotting (if required) should be done, using a rich, light compost, allowing plenty of pot-room, giving them a light corner of the stove to make their growth in. They are easily propagated by dividing their roots, but care should be taken in watering for some time both after potting and division. *Theo, Highgate.* [We have received much correspondence from admirers of this fine plant; but it contains nothing at all novel in the treatment of the plant, that differs from that already published. Ed.]

Jasminum officinale Fruiting.—The enclosed examples of fruiting may possibly not be a novelty to many, but as neither my employer nor myself had noticed the Jasminum officinale in berry before, it is thought sufficiently interesting to forward you a specimen. We have fruited the Ampelopsis Veitchii freely before, but it has dropped off before colouring. The seed in the enclosed purple berries seems ripe enough to germinate. Doubtless we shall hear of many instances of unusual seed-bearing in trees and shrubs after the summer we have had, and also of some freaks of Nature, likely to prove more interesting than welcome. *G. P.*

The International Forestry Exhibition Awards.—There have been already many dissatisfied exhibitors as to the awards at this Exhibition, and I beg to add my name as another who is aggrieved with the awards of the judges. The programme invited practical treatises and essays, with the promise of premiums, money prizes, diplomas, medals, &c. Having paid considerable attention to forestry subjects from the year 1867, when I acted as British juror at the Paris Exhibition in the section of forest products, and drew up the report on these to be submitted to Parliament. Since then I have been in frequent communication with the heads of the Forest Departments in the United States, France, Austria, and our colonies; I therefore prepared and sent in elaborate treatises on the following subjects, on which information was sought by the committee:—On the present and prospective sources of the timber supplies of Great Britain, with statistics of the various descriptions of timber imported during the past twenty-five years; on the supply of Teak-wood for ship-building purposes; on the utilisation of forest produce in the manufacture of paper; on the growth and management of Eucalyptus plantations and their economic uses. These essays averaged about fifty pages each of official post, and necessarily involved a good deal of research, besides costing over £10 paid for making fair copies. After four months' deliberation I received on the 18th inst. an announcement from the secretary that the essays had been awarded bronze medals, but coupled "with the condition that the right of publishing these essays was to be surrendered to the committee." I promptly responded that, as an old author and journalist, I could use my literary articles to better advantage, and requested the return of my essays. I would suggest to your editorial experience that the award of a bronze medal is an excellent plan to obtain practical treatises for your journal, and as it has probably been found to succeed in this instance, it will hereafter be followed by many periodicals. *P. L. Simmonds, 85, Finborough Road, South Kensington, October 21.*

Gladiolus The Bride.—"J. S.," while crediting Mr. Riches with having done good service in calling attention to this valuable variety, would seem to doubt its hardiness. Having had experience with it for years past, both in the open ground and in pots, I can assure "J. S." that it is quite hardy in well drained soils; I do not say it is hardy in stiff, cold, or retentive soils simply because I have never tried it in these, indeed it is not the plant for such, and care should be exercised that it does not get planted in them. I have known it withstand 20° of frost with impunity, and this when planted 3 inches deep, with a mulching of spent hops which would add an additional depth of from 1 to 2 inches; so that no one need be in doubt as to its hardiness, and where it is left in the ground for two or three years it increases with rapidity. It is of great service, however, as a pot plant; being easily forced it can be had in flower without any undue forcing for Eastertide, at which season it will be much appreciated, and I am of opinion that the earliest flowered batch may by proper treatment be had in flower again by Christmas. I intend making the experiment, and shall be glad to give the readers of the *Gardeners' Chronicle* the results on a future day, meanwhile if any deem it worthy they may be experimenting in the same direction. Of this I am convinced, that this variety of Gladiolus Colvillei must ere long be among the foremost of pot plants for conservatory and general decorative purposes. Unlike the hybrids of Gandavensis, which as a rule only produce one spike of flowers to each corm, the variety under notice not unfrequently sends up from two to four, and in the case of extra strong corms even more than this, each carrying from eight to twelve flowers. Already have nurserymen and bouquet makers realised its value, and use it extensively in all choice floral arrangements, but it does not as yet appear to be duly appreciated in private gardens. To those who may be purchasers of it this autumn I may remark that a good sized corm of this Gladiolus is only equal to that of an ordinary Crocus, for it not unfrequently happens that the characteristic size of its corms causes disappointment to those unacquainted with it. Being easily grown it may be confidently recommended to amateurs, and the fact that it is very dwarf habited is only another item favouring its more general use. *E. Jenkins.*

—— I do not doubt the practicability of planting Gladiolus The Bride during the autumn, as that is easy enough, but what I do doubt is the wisdom of so doing, as the corms are not sufficiently hardy to stand out in the open ground unprotected, and therefore those who venture with them are more than likely to lose them unless we again get a mild winter. There are sheltered situations no doubt where this Gladiolus will live if the border it is in is mulched with leaf-mould or cocoa-nut fibre, as we have Tritonias, Ixias, and Antholyzas that have been out for years so protected, and they always do remarkably well, and flower far better than any in pots. The natural way with bulbs is to leave them in the earth, and there can, I think, be no doubt but that the right mode of treating them is to pot them, instead of allowing them to be exposed and dried, as they must of necessity lose strength, instead of which, when they have soil around them, they remain plump, and after a short rest emit roots again. This is borne out by what "R." says of those he has just examined, and it is the same with all bulbous plants, as any one may see who has to do with their management. *J. S.*

Bailey's Green-flesh Melon. — Last spring a few seeds of Bailey's Green-flesh Melon fell into my hands, and I was informed that this Melon had been awarded a Banksian Medal more than half a century since. After growing it one would be inclined to ask what progress we had made in improving the quality of our Melons. I do not profess to be a judge of Melons, simply because I have no love for them, but they were highly approved of by my employers. As a grower it was all that one could wish for—free, hardy, handsome, and a good useful size. The wonder is that Mr. Bailey has kept it true for more than half a lifetime. It ought to be better known, especially to those who are obliged to grow Melons in cold frames lined with a little dung, &c. *William Culverwell, Thorpe Perrow.*

Habrothamnus elegans.—I send you flowers of this plant from the open border. It has bloomed here for several years past with only a mulching in winter, and makes shoots from 5 to 6 feet in the season. It has been killed to the ground twice by sharp frost, but breaks up again in spring in the same manner as Fuchsias do. It has now been in bloom the greater part of the summer, thus proving that it is deserving of cultivation out-of-doors. A situation on a sheltered wall or in a house, and rather a dry soil, suit it well, and a slight protection similar to that given to Myrtle, or Aloysia citriodora, Fuchsias, &c., all of which I grow in the same border. *W. Divers, Weirton House, Maidstone.* [Nice racemes of bloom in an uninjured condition, making a gay object if covering a large area of wall. Ed.]

Jerusalem Artichokes.—This plant is flowering freely here at present. I noticed eight stems bearing fairly developed flowers, and others showing signs of bud. It does not usually bloom here, but I suppose the fine warm summer has encouraged it to do so. I remember seeing it in bloom in Norfolk a good many years ago. The *Times* this week records two cases of the plant flowering. *G. H. White, St. Mary Church, South Devon.* [Several correspondents call attention to the same fact. Ed.]

Gros Maroc Grape.—I can fully bear out what Mr. Carmichael (p. 502) says with reference to this fine Grape, as I saw Vines of it under his management when he was at Nowton Court, which were growing up the high back wall of one of the vineries there, where they were planted between Black Alicantes; and though, as everybody knows, this variety puts on colour very readily, the Gros Maroc beat it in a striking manner, as the finish of the berries was perfect, even on bunches that were quite shaded and almost touching the ground. A Grape that will do so well and colour under such adverse conditions as those though being under other Vines deserves to be much better known; and besides the qualities mentioned, it is also quite as good as most of the late sorts in flavour. Judging from the notices of the shows it seems coming into favour, as it appeared in several exhibits, and I had the pleasure of seeing it at Gunnersbury Park, where Grapes are as well grown as they are at any other place in the kingdom. *J. Sheppard.*

Thinning Fruit Trees.—In a general way the thinning of the wood of fruit trees is left till late in the year, when they are subjected to their annual pruning, but where time can be spared it is far better to remove all superfluous wood during the summer and autumn, as by so doing sun and air are let in and have full play on the foliage and young shoots or spurs, which then stand a chance of becoming well budded and ripened before winter sets in. The trees most benefited by this kind of attention at the present late season are Peaches and Nectarines, which should be gone over and have every shoot taken out that is not required for laying in to fill up up any vacant space, or to be retained for bearing, as not only does the thinning assist those left, but it is much pleasanter to do such work now than it is by-and-bye when the weather is cold, besides which any one going over trees or bushes while they have the leaves can see at once where they are too thick and can then cut out accordingly. If this were only done with Apples and Pears at, or before, this season we should not witness so many with their branches crossed and crowded, as though they may look tolerably thin and open when bare, they appear, and are, crowded when their foliage is on. Trees in this state seldom, or never, bear freely, and what fruit they do have is not of that fine quality it is when exposed to the sun. *S. W.*

Outdoor Black Hamburgh Grapes in Yorkshire.—Herewith I beg to forward a sample of Hamburgh Grapes, the produce of a Vine growing on the south side of a cottage in the village of Kirkby Wharfe, distant a few hundred yards from where I write. This is the first time for many years that the fruit has got nearly ripe. My main object in sending them is to show what sunshine can do for us (when we chance to get enough of it) even in what is sometimes called, by some of my southern gardening acquaintances, "cold Yorkshire." Had the Vine in question been trained to a brick wall instead of a grey limestone one, I have no doubt but that the fruit would have been as ripe fully a week sooner. Its roots are growing in the natural soil and are entirely covered by a brick pavement; the small courtyard in which it is planted having been paved all over with that material. Several leading shoots made this year are fully 7 yards long, and there are close upon a hundred bunches of fruit on it similar to the one sent you. *H. J. Clayton, Grimston Gardens, Tadcaster.* [Finer and riper than we ever saw before under like circumstances. Ed.]

Hyacinths and Bulbs for Early Work.—It was not an uncommon proceeding with some of the gardeners of forty years ago, when it was wished to obtain early-blooming plants of the above, to take away the frame from a disused Melon hotbed, and to cut a hole of about 4 feet square, or more if the bed was a big one, down to the bottom, within which the potted-up bulbs were placed, usually in two tiers, and then covered over with half-decayed leaf-mould that had been screened coarsely. Over all were put a few boards and some of the spent hotbed dung. In this hole Hyacinths and other bulbs

required for early work made roots rapidly, and in six weeks or thereabouts they were fit to be removed into a place where a little light could be given them for a few days previous to taking them into the forcing-pit. *X.*

Androsace rotundifolia.—This novelty from the Himalayas is likely to disappoint gardeners, however interesting it may be to botanists. It contrasts unfavourably with A. sarmentosa and A. lanuginosa, though more easily cultivated than either. Its habit is good, and in leaf it is not unlike a miniature Primula sinensis; but the flower is wretched—a tiny pinkish corolla in the middle of a large green calyx, recalling those ugly deformities of the Polyanthus tribe. In hopes that this might not be the normal form, I saved some seed, and raised many seedlings, which are all alike. It is not likely therefore to become popular in our alpine gardens. *C. Wolley Dod, Edge Hall, Oct.* 20.

Ipomœa Bona-nox.—Seeds of this plant were sent from Japan to Kew as a species of Convolvulus, and described as the Mooncreeper, probably from its habit of flowering during the night. It was originally introduced to this country in 1773 from the West Indies, but has never been widely cultivated nor very popular. The large white flowers are conspicuous enough, but their nocturnal duration is against their being grown for decorative purposes. They are borne in axillary, stalked few-flowered clusters, and measure individually 4 or 5 inches long. For lovers of the curious, however, there is every inducement to add it to their collection. A figure of it appeared long ago in the *Botanical Magazine*, t. 752, and the flowering plant may be seen in the Water Lily-house at Kew. *F.*

Peach Baron Dufour.—This but little known sort, which was found by Colonel Dufour in an orchard at Metz quite by chance, deserves, on account of its size, beauty, and excellence, to be much more grown. The Grosse Madeleine de Metz, as it is sometimes designated, is a very large round fruit of $3\frac{3}{8}$ inches broad, and $2\frac{1}{2}$ inches high. The skin is of a fine greenish-yellow, dark reddish-brown on the sunny side, and slightly woolly. The flesh is light yellow, and near the stone reddish, melting, juicy, full of saccharine matter, and of capital flavour. On a south aspect the fruit is ripe at the end of August. The tree is a vigorous grower, hardy, and an abundant bearer. *Garten und Blumen Zeitung.*

Aloysia citriodora.—Fine plants of this great favourite can sometimes be met with in old-fashioned gardens, growing in some warm nook, and astonishing visitors by its great size. When planted against a warm south wall and protected during the winter, it is astonishing what a fine plant can be grown. One was seen recently, planted ten years ago, in a suburban garden, on a subsoil of somewhat cold clay, that now covers nearly 200 superficial feet of wall. Such side-shoots as can be utilised for the purpose are trained horizontally, and so the width of the specimen is extended year after year; but the vigour of the plant goes to produce straight upward shoots which, reaching somewhat above the 10 feet of wall against which it is planted, flower profusely during the summer and early autumn. Every year this plant is cut down to within 4 feet of the ground, the remaining surface is then carefully strawed and covered with mats, in addition coal ashes are heaped up against its roots. The covering is taken off with the advent of spring, and as genial weather smiles upon it, activity recommences, and a generous summer growth ensues. *D. E.*

Horizontal Tubular Boilers.—Some two or three years back the boiler in question was prominently brought before your readers as a remarkably good one, viz., simple in construction, not likely to wear out in a few years, and economical both in first cost and fuel. As there have doubtless been several of your readers who have tried it, permit me to suggest to them that it would be interesting to know if they have found it to come up to their expectations, and especially so in comparison with some other boiler of simple construction and in general use. My main object in asking this is, I think, a perfectly honest one. I shall very shortly have to replace a worn-out boiler that heats 2500 feet of 4-inch pipe, I have a strong predilection for what I may term horizontal boilers, and am desirous to know how the tubular form works. At present I am in favour of a well made 8 feet long simple saddle. *Yorkshireman.*

Violets.—Flowers of these have already made their appearance, the most plentiful being those of The Czar, which during the early part of the month were showing freely on plants in sunny positions and which promise to be very plentiful when the right season comes. The earliest among the frame kinds is Marie Louise, which we have been gathering for some time, and a very fine kind it is, as it sends up big blooms on long stout stalks, and is a decided improvement on the old Neapolitan. This we grew side by side with the one just named, and though they were planted out by the first week in May, and treated precisely the same as the Marie Louise, we have not picked a flower from them yet, but I always find they come in well for succession and last on till quite late in the spring. Besides being so early, the Marie Louise is a strong grower, and very hardy, requiring only the shelter of a cold frame to induce it to produce its lovely, dark, sweet-scented blossoms in the greatest abundance. *J. S.*

The Arboretum.

THE following memoranda were taken on the occasion of a recent visit to Mr. Waterer's nursery at Knap Hill:—

THE FERN-LEAVED SWEET CHESTNUT is a curious very narrow-leaved variety, resembling the Fern-leaved Beech, but with much longer leaves. For the sake of variety and curiosity it should be sparingly introduced into plantations.

FRAXINUS ARBUTIFOLIA is a remarkably robust vigorous growing Ash, the young shoots and under-surface of the leaves covered with rusty down, the buds small, covered with coarse brownish hairs, very different from the buds of the common Ash, for which Tennyson got so much praise for finding out were of a black colour!

FRAXINUS GLOBOSA is a curious Ash, with a rounded head like that of the mop-headed Robinia Pseudacacia.

TILIA ARGENTEA.—This is a beautiful American (?) Lime, but Mr. Waterer tells us there are two forms of it not very readily distinguishable at sight, but one has the faculty of growing well, the other is just as obstinate.

POPULUS ALBA PICARDI.—This is a free-growing form of the White Poplar, and said not to "canker" as that species is apt to do.

POPULUS BOLLEANA we have previously referred to and illustrated, but mention again for the purpose of saying that it improves upon acquaintance, and is likely to form a very handsome free-growing pyramidal White Poplar.

POPULUS ALBA MACROPHYLLA is also a very free-growing, large-leaved form of the White Poplar.

ROBINIA PSEUDACACIA MONOPHYLLA.—A remarkable variety, which puzzles people at first sight. The solitary leaflet at the end of the stalk is much larger than ordinary, as if to compensate for the absence of its fellows.

ROBINIA PSEUDACACIA BESSONIANA is recommended as a round-headed tree, good for avenues and street planting. A row of it may be seen at Chiswick, close by the entrance to the gardens of the Royal Horticultural Society. We have rather an objection to trees with small compound leaves for these purposes, for when the leaves fall they do not fall in one piece, but break up into their component parts, which makes more litter to sweep up. However, this is not of much consequence.

ACER REITENBACHII? — This is apparently a variety of the Norway Maple (A. platanoides), similar to A. Schwedleri, but richer in colour and colouring later.

FAGUS ANTARCTICA is a low tree with close, spreading, slender branches, the leaves in two ranks, closely set, very shortly stalked, about half an inch long, oblong obtuse serrate, rather leathery in consistence, and dark green.

CEANOTHUS GLOIRE DE VERSAILLES. — This variety, grown against a wall, may be counted on to supply its elegant trusses of pale blue flowers for several months.

CRATÆGUS PYRACANTHA LALANDEI is a variety of the common Pyracantha, with narrow oblong leaves and dense clusters of small orange berries. It is said to bear fruit more freely than the common kind.

AKEBIA QUINATA and STAUNTONIA LATIFOLIA, two beautiful climbing plants, are hardy here. The latter does, indeed, get cut to the ground in severe winters, but speedily sends up its handsome shoots in spring.

SOPHORA JAPONICA PENDULA.—One of the most characteristic of weeping trees, its shoots falling over each other like miniature cascades, and with rich deep green foliage. On inquiry why this very beautiful tree was not more common the answer given was "spring frosts," which, with the thermometer somewhere in the 80's, was hard to realise at the time.

THE WEEPING HAZEL.—Among weeping trees this is one of the most effective; grafted so as to form a standard it produces an admirable effect. Some day perhaps we may be so fortunate as to get a purple form.

SALIX RIGIDA PENDULA.—A very bold free-growing Willow, with green shoots, large leafy stipules, and broadly lanceolate serrulate leaves. It is one of the handsomest of its class.

ULMUS MONTANA.—A golden variety of the pyramidal or monumental Elm, is a very striking plant. Mixed with the ordinary form the contrast would be magnificent.

LONICERA MAACKII) Maximowicz, in *Gartenflora*, t. 1162).—A hardy shrub, native of Southern Manchuria and Japan, with broad, lanceolate, shining leaves, and irregularly tubular white flowers, with spreading limb. Judging from the figure, this must be a very effective hardy flowering shrub.

CORYLOPSIS HIMALAYANA.—This is a shrub with the habit and foliage of the Hazel, while the pendulous racemes resemble the female spikes of the Hornbeam, Carpinus Betulus, though the resemblance is merely superficial, for the flowers have five oblong obovate greenish petals and other marks of the Hamamelis family. It is a native of the Eastern Himalayas, at heights of from 5000—8000 feet. The plate in the *Botanical Magazine*, t. 6779 (October), is taken from a plant which flowered at Kew. We suspect the plant would hardly resist a very severe winter without protection.

CHRYSANTHEMUMS IN TOWN.

WE find the usual display of these flowers in the Temple Gardens, which, through the kind permission of the Benchers, the public are able to see for the next few weeks; indeed for the period the plants will remain at their best. Both Mr. Newton, the gardener of the Inner Temple, and Mr. Wright of the Middle Temple Gardens, seem stimulated, by this influx of the public to see the fine productions of their skill, to vie in endeavouring to obtain by all possible means the newest kinds, the biggest blooms associated with healthy leafage, and as little legginess as want of space and tall buildings permit. Mr. Newton's plants are arranged in a flattish bank that allows not much leafage to be seen; but is a good method of showing off the blooms, as it has the effect of a mixed flower-bed, whereas, the gardener of the Middle Temple piles his plants so as to form a steeper bank, which allows the particular healthy foliage of his plants to be observed. The blooms in this latter collection are decidedly the larger at the present time, and seem likely to continue so; but it is as yet rather early to speak with confidence. In both collections there are many novelties, but nothing that is a great advance on older kinds. In the Middle Temple gardens there were fine blooms of George Gordon, Monsieur Tarn, James Mahood, Margot, a handsome flower—a white tinged with rose, and lilac outer rays; Monsieur Mousillac. And in the Inner Temple gardens fine blooms of Madame Clos, a violet-rose with a white centre; Sacca vera, a pink; Salteri, a showy bloom, deep red changing to scarlet, the central florets golden spotted with scarlet; Monsieur Planchenau, Boule d'Or, and Striatum perfectum, a white-striped violet. The above-named blooms belong to the section of hybrid Japanese varieties so much admired at the present time.

Finsbury Park.—One hardly expects to find such a display of floral beauty in such close proximity to the Metropolis as is to be seen this year at Finsbury. Undoubtedly the plants have received untiring care and attention, and the degree of perfection they have attained, under adverse circumstances, is of a very high order. The plants, which are very clean and healthy, are in 9-inch pots, and are arranged so that the colours blend most happily. The following were the most noticeable amongst the old varieties:—George Glenny, Comte de Germiny, La Nymphe, James Salter, Lord Wolseley, Gloire de Toulouse, La Charmeuse, Lady Selborne, Tendresse, Mr. Bunn, Chinaman (very good), Lord Derby, Elaine, Prince Alfred, Curiosity, Striatum, Mrs. Heale, Gloire Rayonnante, and Alfred Salter. Amongst the new ones were M. Moussillac, a deep crimson with pale centre; Margot, rosy-lilac, white centre; M. Astorg, fine white; Annie Holborn, rosy-lilac, pale centre, large bloom; L'Or du Rhin, gamboge-yellow, twisted florets; M. Henri Jacotot, outer florets red, centre yellow, large flower; M. Blanc, bright rosy-pink; Helvétie, rosy-carmine; Safrano, canary-yellow, fine; M. Boyer, rosy-lilac; Flamme de Punch, orange-red streaked with golden-yellow, twisted florets, large flower; and Lord Alcester, primrose. There are a great many varieties yet to bloom, which will keep this exhibition interesting to visitors for some time to come.

Reports of Societies.

Massachusetts Horticultural: *Boston, Sept. 6.*—The last of the free exhibitions of this season was held to-day in the Society's hall, and may be well called the best of the season. The fruit was shown in great abundance, and remarkably fair and handsome. C. M. Hovey showed several new Cannas, among which we noticed Canna Ehemanni, and C. Montoni. Gloxinias and double Zinnias were exhibited by a number of contributors, also herbaceous plants, Dahlias, Verbenas, and Scabiosa. E. Sheppard & Sons, Lowell, Mass., showed a large collection of Dianthus vars. of D. Hedewigii and D. laciniatus from mixed seed of their own saving. Mrs. P. D. Richards, West Medford, showed forty-three native plants, twenty of which had not been shown before.

In the fruit department we noticed the following varieties of Apples:—Porter's, Alexandra, Pumpkin Sweet, and Garden Royal. Pears:—Boussoch, Bartlett, Amalis, and Tyson. Plums:—Yellow Egg, Smith's Orleans, Washington, Victoria, Lucombe's Nonsuch, Yellow Gage, Princess Imperial Gage, Coe's Golden Drop, Duane's Purple, Damson, and Jefferson. Grapes:—Moor's Early, Warden, Delaware Hartford, and Champion. The show of vegetables was large and excellent.

Boston, Sept. 16.—The annual exhibition held in Horticultural Hall commenced to-day and continued four days. The entrance to the hall was covered by a green arch over the door, and the stairway lined with evergreens in pots, contributed by W. C. Strong. In the upper hall the collection of plants was very fine, and certainly surpassed anything of the kind ever shown here before. W. C. Strong, Brighton, Massachusetts, exhibited a large collection of ornamental foliage and evergreen trees. *Communicated.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
For the Week Ending Wednesday, October 22, 1884.

Month and Day.	Barometer. Mean reading reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
16	30.16	+0.46	61.0	51.5	9.5	56.2	+ 6.2	44.8	67	N.W.	0.00
17	30.17	+0.47	58.0	52.0	6.0	54.9	+ 5.1	50.2	83	W. to W.NW.	0.00
18	30.19	+0.49	59.0	51.0	8.0	54.6	+ 4.9	50.7	85	W.SW. to W.NW.	0.00
19	30.13	+0.43	60.0	47.5	12.5	53.9	+ 4.4	46.2	75	W.	0.03
20	30.00	+0.30	53.0	42.0	11.0	48.0	— 1.3	39.8	74	W.NW. to N.NW.	0.00
21	30.15	+0.41	52.5	44.0	8.5	47.8	— 1.2	41.7	80	E. to W.NW.	0.00
22	29.99	+0.28	57.5	43.5	14.0	49.5	+ 0.8	43.1	79	E. to E.NE.	0.00
Mean	30.14	+0.44	57.3	47.4	9.9	52.1	+ 2.7	45.2	78	W.NW.	0.00

Oct. 16.—Fine day and night.
— 17.—Dull day and night, but fine.
— 18.—Misty in early morning; fine, dull day and night.
— 19.—Very fine morning; dull afternoon and night.
— 20.—Dense fog in early morning; fine, cloudy day and night.
— 21.—Dull day, overcast; fine clear night.
— 22.—Very fine bright day, and fine clear night.

London: *Atmospheric Pressure.*—During the week ending October 18, the reading of the barometer at the level of the sea increased from 29.69 inches at the beginning of the week to 30.08 inches by 9 A.M. on the 13th, increased to 30.12 inches by midnight on the same day, decreased to 30.08 inches by 9 A.M. on the 14th, increased to 30.30 inches by 9 A.M., decreased to 30.24 inches by 3 P.M. on the 15th, increased to 30.37 inches by midnight on the 16th, decreased to 30.32 inches by 3 P.M. on the 17th, increased to 30.39 inches by 9 A.M. on the 18th, decreased to 30.34 inches by 3 P.M. on the same day, and was 30.39 inches by the end of the week.

The mean reading of the barometer for the week was 33.20 inches, being 0.29 inch higher than last week, and 0.32 inch above the average of the week.

Temperature.—The highest temperature in the shade in the week was 61°, on the 16th, the highest on the 12th was 49°.2. The mean of the seven high day temperatures was 55°.4. The lowest temperature was 37°.5, on the 13th; on the 17th the lowest temperature was 52°. The mean of the seven low night temperatures was 44°.9.

The greatest range of temperature in one day was 17°.5, on the 14th; the smallest was 6°, on the 17th. The mean of the seven daily ranges was 10°.6.

The mean temperatures were—on the 12th, 44°.3; on the 13th, 43°; on the 14th, 48°.1; on the 15th, 50°.7; on the 16th, 56°.2; on the 17th, 54°.9; and on the 18th, 54°.6; of these the first three were below their averages by 6°.7, 7°.7 and 2°.3, respectively, and the rest were above by 0°.5, 6°.2, 5°.1 and 4°.9 respectively.

The mean temperature for the week was 50°.3, being 1°.9 higher than last week, and the same as the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 85°.5, on the 13th. The mean of the seven daily readings was 75°.6.

The lowest reading of a minimum thermometer with its bulb placed on grass was 27°.5, on the 14th. The mean of the seven readings was 35°.2.

Rain.—Rain fell on the 12th and 13th to the amount of 0.09 inch.

England: *Temperature.*—During the week ending October 18, the highest temperatures were 63°.2 at Cambridge, 62°.4 at Nottingham, 62°.2 at Bristol. The highest at Bolton was 56°.6, at Preston 57°.5, at Plymouth 59°. The general mean was 60°.6.

The lowest temperatures were 29°.7 at Wolverhampton, 32°.5 at Bolton, 33°.7 at Bristol; the lowest at Truro and Liverpool was 39°, at Blackheath 37°.5. The general mean was 35°.3.

The greatest ranges were 32°.2 at Wolverhampton, 28°.5 at Bristol, 28° at Brighton; the smallest ranges were 21°.7 at Liverpool, 22° at Truro, 22°.5 at Preston. The general mean was 25°.3.

The mean of the seven high day temperatures was highest at Cambridge, 58°, at Bristol 57°.7, at Truro and Sheffield 57°.6; and was lowest at Bradford, 53°.1, at Bolton 53°.5, and at Preston 53°.6. The general mean was 55°.4.

The mean of the seven low night temperatures was highest at Liverpool, 48°.5, at Truro 47°.1, at Preston 46.8; and was lowest at Wolverhampton, 42°.6, at Sunderland 42°.7, and at Bradford 43°.1. The general mean was 44° 8.

The mean daily range was greatest at Cambridge 13°.1, at Bristol 12°.9, at Brighton 12°.2; and was least at Liverpool, 6°.2, at Preston 6°.8, and at Nottingham 9°.8. The general mean was 10°.6.

The mean temperature was highest at Truro, 51°.3, at Sheffield 50°.7, at Liverpool 50°.6; and was lowest at Bradford, 47°.1, at Wolverhampton 47°.2, at Bolton 47°.5. The general mean was 49°.2.

Rain.—The largest falls were 1.00 inch at Bolton, 0.56 inch at Truro, 0.54 inch at Preston; the smallest falls were 0.01 inch at Wolverhampton, 0.05 inch at Bristol, 0.06 inch at Brighton. The general mean fall was 0.28 inch.

Scotland: *Temperature.*—During the week ending October 18 the highest temperature was 62°, at Perth; at Greenock the highest was 56°. The general mean was 59°.1.

The lowest temperature in the week was 33°.5, at Glasgow; at Aberdeen the lowest temperature was 38°.9. The general mean was 37°.1.

The mean temperature was highest at Paisley, 51°.3, and lowest at Perth, 48°.1. The general mean was 49°.3.

Rain.—The largest fall was 1.07 inch, at Aberdeen, and the smallest fall was 0.08 inch, at Leith. The general mean was 0.32 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

Address of Mr. Bland: *Anxious Enquirer.* We cannot answer your question.

Black Currants: *A Subscriber.* As a manure shoddy would answer your purpose, and is of lasting properties. Farmyard manure, blood manure, or guano, and superphosphate, would all do. The strong and lasting manures, such as the second and third above named, would favour the production of much wood, and would therefore be more fitted to apply to young trees growing in poor soil than to old established bushes, which, as a rule, if stimulated over-much, make too much wood, and become excessively crowded internally, to the detriment of the crop. Long well-ripened shoots bear the most and the largest berries.

Bleaching Pampas-grass Plumes: *Thomas Hankey.* The plumes are dried in the sun, under a glass roof, and are afterwards hung in a large box, or closet, in small bunches, and lighted brimstone put into it, and kept close for an hour or two. Care must be used to prevent the ignition of the dried grass.

Boilers: *Hortus.* See our advertising columns.

Book on Forestry: *P. R. D.* Brown's Forester.

Book on Fruit Tree Pruning: *C. H. M.* Baltet *On Pruning* is the best extant.

Cinerarias Dying Off: *E. F. H.* See "Florists' Flowers" for this week, the symptoms you complain of being there indicated, and their cause.

Coronilla glauca: *W. Rossiter.* The plant sent had a nice pyramidal and bushy form, which, if constant, will make it an improvement on the old variety, providing it is as floriferous as it is hardy.

Crops Destroyed by Fly: *H. Louth.* We cannot say what particular insect is causing the destruction. The larva of the Cabbage-fly (Anthomya Brassicæ) is often troublesome, but that does not agree with the mode of attack as described by you. Please send a few perfect insects for identification, and samples of eaten foliage.

Errata.—In "Grapes in Cool Vineries," at p. 460, col. 2, line 7, read Oxton Hall, Tadcaster, not Orton Hall, &c.; also, at end of same notes, read H. J. Clayton, Grimston, not Grimslow.

Fungi: *A. B. S., Edinburgh.* 1, Agaricus albocyaneus; 2, Hygrophorus coccineus; 3, Agaricus umbelliferus; 4, A. dealbatus; 5, A. Fœnisecii. In sending small examples, which speedily dry up and perish, it is better to send more than one specimen.

Hyacinth: *X.* Next week. The insects on the Hyacinth are mites, but we suspect they are the consequences, not the cause, of the disease.

Insects: *W. J. G.* It is a weevil, not uncommon, and can be trapped with pieces of Carrots.

Names of Fruit: *W. D. & Sons, S.* Pear Louise Bonne of Jersey.—*J. B. Tibbets. Apple:* Blenheim Orange. *Pears:* 1, Beurré Hardy; 2, Beurré d'Aremberg; 3, Beurré Rance.—*A. Chapman.* 1, Blenheim Orange; 2, Scarlet Russet; 3, Small's Golden Pippin; 4, Downton Pippin.—*J. C.* 1, Bess Pool; 2, Red Autumn Calville; 3, Alfriston; 4, Lincoln Pippin; 5 and 6, Blenheim Orange; 8, Yorkshire Greening; 9, Tibbett's Pearmain; 11, Duck's-bill (of Sussex); 13, Northern Greening; 15, Colonel Vaughan. Others not recognised.—*T. B. S.* Lincolnshire Holland Pippin.—*W. J. Clayton.* 1, Court-pendu Plat; 2, Sturmer Pippin; 3, Cox's Pomona; 4, Boston Russet; 5, not recognised; 6, Cockle Pippin; 7, Imperial; 8, Adams' Pearmain.—*E. Pond.* No. 1 is properly called Cox's Pomona. The others are certainly wrong. We do not recognise them.—*Strebor.* Scarlet Golden Pippin.—*Pomologist.* Apples next week.

Names of Plants: *H.* 1. Glyceria distans; 2, Lolium perenne.—*C. W. D.* Solidago leptocephala, or tenuifolia.—*Frank Tufnail.* Vicia, not Cracca, but probably varia, a French species sometimes introduced.—*F. C. Toms.* Alopecurus bulbosus.—*Owen Thomas.* Cestrum calycinum and Ilex insignis.—*W. S. M.* Clitoria ternatea.—*H. J. C.* 1, Specimen insufficient; 2, Cryptomeria japonica; 3, Lastrea dilatata; 4, Saponaria officinalis; 5, Alchemilla alpina; 6, Euonymus japonica, var.—*C. H. P.* 1, Eryngium pandanifolium; 2, Origanum dictamnus; 3, Scrophularia nodosa.—*Argus.* 1, Adiantum concinnum; 2, A. tenerum; 3, Asplenium præmorsum; 4, Pteris longifolia; 5, Lastrea glabella; specimens too small and imperfect.—*J. H.* 6, Schismatoglossis species; 7, Meyenia erecta; 8, Sanseveria zeylanica. We cannot undertake to name your Crotons; send them to the nurseryman from whom you bought them.—*D. White.* The blooms are those of Cattleya maxima, but are poor in size.—*F. L.* Oncidium Forbesii.—*J. B.* A variety of Aralia Sieboldi.—*J. R.* 1, Urceolina pendula; 2, Not recognisable.—*W. S.* 1, Kerria japonica; 2, Abelia floribunda; 3, Sedum spectabile; 4, Pyrethrum uliginosum; 5, Aster Novi-Belgii.

Otto Overbeck.—Thanks for your offer, but we are not in want of such services as you offer us.

Pines Going Black in the Centre: *E. T.* This is usually the result of too much moisture in the soil during the ripening period. It often follows from water-logging when the plants are in very large pots, and are not over-well rooted, and is less frequently seen in smaller pots and porous compost. It seldom occurs in well-drained beds, nor in peaty mixtures, in which latter the Pine roots in a remarkable degree.

SINGLE DAHLIAS: *J. Garaway & Sons.* The blooms showed decorative qualities of a high degree, but not more so than scores of others now in commerce. Those which showed the D. glabrata strain the strongest would no doubt prove of value, as being smaller blooms, the tendency being in new flowers towards an undue increase of size of bloom, rendering them heavy, and by that reason drooping.—*H. P.* Of no special value. Some of them seem hurt by cold.

TOWN TREES: *T. T.* By no means plant either Elms or Limes in such a situation. Planes are the best, some of the Maples are excellent, such as A. eriocarpum and A. rubrum, or even the common Sycamore. Some of the Pyrus are good, if they are to be had in quantity sufficient. We cannot recommend either Thorn or Horse Chestnut in such a locality. Ailantus makes a magnificent tree, even in the most smoky locality. For shrubs there is nothing to surpass Hollies and Aucubas. Deciduous shrubs should be introduced sparingly; their appearance in smoky districts is lugubrious.

TUBEROSES: *Subscriber.* Pot them now, or at intervals till the spring, using moderately rich sandy loam. Do not use pots larger than 48's for single bulbs, and larger in proportion when you plant several together. Put them deep enough to cover the shoulder of the bulb. Give no water if you can avoid it till the bulbs push, keeping the pots in a bottom-heat of 75° to 80°, with a top-heat of from 50° by night to 65° or 70° by day. Keep near the glass at all times, to prevent drawing, and shift into cooler and better ventilated quarters as they come into flower. They do well in simple hot-beds, without glass, in the open air in summer.

CATALOGUES RECEIVED.

ANDRE LEROY, Angers—Price List of Fruit Trees, Nuts, Vines, Strawberries, &c.

JAMES W. TODMAN, Eltham—Hardy Trees and Shrubs, Chrysanthemums, &c.

MESSRS. MORLE & CO., 1, 2, and 162, Fenchurch Street, E.C.; 80, St. Paul's Churchyard, E.C.; and at Child's Hill, Finchley, N.W.—Bulbs, Miscellaneous Plants.

THOS. WARE, Hale Farm Nurseries, Tottenham—Roses, Climbing Plants, Deciduous Ornamental and Flowering Shrubs.

THOMAS IMRIE & SONS, Ayr—Fruit Trees, Ornamental Trees and Shrubs.

E. P. DIXON, Hull—Forest, Ornamental Trees, and Shrubs.

MESSRS. KELWAY & SON, Langport, Somerset—Gladioli.

NATIONAL ROSE SOCIETY—Descriptive Catalogue of Garden Roses.

MESSRS. WILLIAMS & NORGATE—Book Circular.

COMMUNICATIONS RECEIVED: R. P. F.—Douglas.—J. G. B.—J. Page.—T. C.—J. D.—R. D.—Keir.—H. G.—H. N. E.—H. W. W.—G. R. J.—W. T. C.—T. B.—F. G., next week.—J. H.—F. E., next week.—H. L. C.—O. T.—E. H.—E. A., Paris.—Herb. Chapman.

Markets.

COVENT GARDEN, October 23.

BUSINESS dull, and prices generally lower. Kent Cobs firm, with a slight rise. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6–	4 0	Pine-apples, Eng., lb.	4 0–	5 0
Cobs per 100 lb.	60 0–	62 6	Peaches per doz.	8 0–	12 0
Grapes, per lb.	0 6–	4 0	Pears, French, doz.	1 6–	3 6
Lemons, per case	21 0–	..	Pines, St. Michael's, each	3 0–	6 0
Melons, each	1 6–	3 0			

VEGETABLES—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0–	4 0	Lettuces, Cabbage, per dozen	1 6–	..
Beans, French, lb.	0 4–	..	— Cos, each	0 2–	..
Beet, per doz.	1 0–	..	Marrows, each	0 2–	..
Cabbages, per doz.	1 6–	2 0	Mint, green, bunch	0 4–	..
Carrots, per bun.	0 6–	..	Mushrooms, p. baskt.	1 0–	2 0
Cauliflowers, English, doz.	1 0–	2 6	Onions, per bushel	4 0–	..
Celery, per bundle	1 6–	2 6	— Spring, per bun.	0 6–	..
Cucumbers, each	0 6–	1 0	Parsley, per bunch	0 4–	..
Endive, English, per dozen	1 0–	..	Radishes, per doz.	1 6–	..
Garlic, per lb.	0 6–	..	Seakale, per punnet	2 6–	..
Herbs, per bunch	0 2–	0 4	Small saladiug, per punnet	0 4–	..
Horse Radish, per bundle	3 0–	4 0	Spinach, per bushel	2 6–	..
			Tomatos, per lb.	0 6–	1 0
			Turnips, bun.	0 5–	..

POTATOS.—Magnum Bonums, 50*s.* to 70*s.*; Regents, 70*s.* to 80*s.* per ton. Trade very quiet.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	24 0	Ferns, in variety, per dozen	4 0–	18 0
Arbor-vitæ (golden), per dozen	6 0–	18 0	Ficus elastica, each	1 6–	7 0
— (common), dozen	6 0–	12 0	Foliage Plants, various, each	2 0–	10 0
Asters, per dozen	4 0–	8 0	Fuchsias, per doz.	3 0–	6 0
Begonias, per doz.	4 0–	12 0	Marguerite Daisy, per dozen	8 0–	15 0
Bouvardia, dozen	9 0–	18 0	Mignonette, per doz	3 0–	6 0
Chrysanth., dozen	4 0–	9 0	Myrtles, per doz.	6 0–	12 0
Cockscombs, doz.	2 6–	4 0	Palms in variety, each	2 6–	21 0
Coleus, various, doz.	3 0–	9 0	Pelargoniums, scarlet, per dozen	4 0–	6 0
Cyperus, per dozen	4 0–	12 0	Primula sinensis, per dozen	4 0–	6 0
Dracæna term. doz.	30 0–	60 0	Solanums, dozen	9 0–	12 0
— viridis, per doz.	12 0–	24 0			
Erica, various, doz.	9 0–	18 0			
Euonymus, various, per dozen	6 0–	18 0			
Evergreens, in var., per dozen	6 0–	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0–	4 0	Lapageria, red, 12 blooms	1 0–	2 0
Arum Lilies, 12 blms.	3 0–	6 0	Marguentes, 12 bun.	3 0–	6 0
Asters, 12 bunches	4 0–	9 0	Mignonette, 12 bun.	1 0–	4 0
Azalea, 12 sprays	1 6–	2 0	Pelargoniums, per 12 sprays	0 9–	1 0
Bouvardias, per bun.	0 9–	1 0	— scarlet, 12 sprays	0 4–	0 6
Camellias, per doz.	3 0–	6 0	Primula, double, bun.	1 0–	1 6
Carnations, 12 blms	1 0–	2 0	Roses (indoor), doz.	2 0–	6 0
Chrysanth., 12 bun.	3 0	9 0	— (outdoor), 12 bun.	12 0–	..
— large, 12 blooms	2 0–	4 0	Stephanotis, 12 spr.	4 0–	8 0
Cornflower, 12 bun.	2 0–	4 0	Sweet Peas, 12 bun.	1 6–	4 0
Cyclamen, 12 blooms	0 3–	0 6	Tropæolum, 12 bun.	1 0	2 0
Dahlias, 12 bunches	3 0–	6 0	Tuberoses, per doz.	1 0–	1 6
Eucharis, per doz.	3 0–	6 0	Violets, 12 bun.	1 0–	1 6
Forget-me-not, 12 bs.	2 0–	6 0	— French, bunch	1 0–	1 6
Gardenias, 12 blms.	3 0–	6 0	— Parme, Fr., bun.	3 0–	4 0
Gladiolus, various, 12 spikes	1 0–	..	Wallflower, 12 bun.	4 0–	6 0
Heliotropes, 12 sp.	0 6–	1 0	White Jasmine, per bunch	0 6–	1 0
Lapageria, white, 12 blooms	2 0–	3 0			

SEEDS.

LONDON: *October 22.*—There was very little business passing on the seed market to-day, the attendance being limited. As regards Clover seeds generally, no disposition to purchase any description of same yet shows itself. For Italian Rye-grass lower quotations are received; rather higher prices are, however, asked for perennials. Canary seed is held for an advance, but the sale continues slow. New Hemp seed is now arriving. Rather lower rates are accepted for feeding Linseed. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday English Wheat met only a very limited inquiry, but sales were not pressed at any decline. In foreign Wheat there was hardly sufficient done to establish any quotable change in prices, but the tendency was against the holder. Sales of flour were difficult to effect at previous rates. Fine malting barley was fairly firm, but grinding descriptions must be written as rather easier on the week. Beans moved off in retail quantities at previous rates, and the same may be said of Peas. Prices for Oats, with a slow sale, compared barely up to those of Monday se'nnight, but good old corn was scarce, and for the week 3*d.* to 6*d.* dearer. Maize was firm, round corn ruling quite 3*d.*, in some instances 6*d.*, above the rates of the previous Monday. On Wednesday there was but little if any change in the trade. Neither English nor foreign Wheat or flour met inquiry. Barley, Beans, and Peas were quiet, without change in prices. Maize was firm, but slow. For Oats full terms were required, but demand was languid.—Average prices of corn for the week ending Oct. 18:—Wheat, 32*s.* 4*d.*; Barley, 31*s.* 11*d.*; Oats, 19*s.* For the corresponding period last year:—Wheat, 40*s.* 6*d.*; Barley, 34*s.* 6*d.*; Oats, 19*s.* 11*d.*

CATTLE.

At Copenhagen Fields on Monday, with more than adequate supply, middling and plain cattle were a difficult sale, at lower prices. Prime and choice English were scarce, and were not so appreciably cheaper; nevertheless even they barely supported late extreme rates. In the sheep trade choice neat weights of English supported late value, whilst the large and coarse qualities were difficult to sell and lower. For prime quality calves rates were nominal. Quotations:—Beasts, 3*s.* 10*d.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 8*d.*; calves, 3*s.* 4*d.* to 5*s.* 6*d.*; sheep, 4*s.* 6*d.* to 5*s.* 2*d.*, and 6*s.* to 6*s.* 6*d.*—On Thursday there was no feature in the trade. The supply of beasts, though not large, was more than sufficient. Prime breeds were steady, but other kinds weak. Sheep sold slowly, without change. Calves and pigs were quiet and unaltered.

HAY.

Tuesday's Whitechapel Market report states that there was large supplies, especially of Clover, which was very dull of sale. Straw also sold slowly. Quotations:—Clover, first quality, 95*s.* to 110*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 110*s.*; hay, first quality, 80*s.* to 98*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 36*s.* per load.—On Thursday there was a rather large supply. Trade was dull at drooping prices.—The Cumberland market report states there was a fair supply, with rather slow demand. Quotations:—Clover, best, 98*s.* to 108*s.*; inferior, 60*s.* to 70*s.*; meadow hay, best, 80*s.* to 88*s.*; inferior, 50*s.* to 70*s.*; and straw, 28*s.* to 34*s.* per load.

POTATOS.

The Borough and Spitalfields markets reports state that supplies are fully adequate to demand, which is by no means brisk. In values there was little change, and our previous quotations are still current.—The imports into London last week consisted of 250 bags from Bremen, 1217 Hamburgh, and 108 from Rotterdam.

COALS.

The following are the prices at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Harton, 17*s.*; Tyne (unscreened), 11*s.* 3*d.*; Hetton, 19*s.*; Hetton Lyons, 17*s.*; Lambton, 18*s.* 6*d.*; Wear, 17*s.*; Tunstall, 17*s.*; Hulam, 17*s.* 3*d.*; East Hartlepool, 18*s.* 3*d.*; South Hartlepool, 17*s.* 3*d.*; Tees, 19*s.*

Government Stock.—Consols closed on Monday at 100⅜ to 100⅝ for delivery, and 100⅜ to 101 for the account. Tuesday's final figures were 100⅝ to 101 for delivery, and 101 1/16 to 101 3/16 for the account. On Wednesday prices closed for delivery as on the day previous, and 100 13/16 to 101 1/16 for the account. Thursday's final quotations were 100⅝ to 100⅞ for delivery, and 100⅞ to 101 for the account.

FRUIT TREES FOR SALE, in quantities.

Favourite Cluster DAMSON, standard and half; Victoria or Dolphin PLUM, standard and half; Bush and New Orleans PLUM, standard and half; Warner's King and Stone's PLUM, standard and half; 20,000 Lad and Bob GOOSEBERRIES; 20,000 Black Naples and Red CURRANTS COB TREES, 4000 WELLINGTONIAS, 20,000 Cluster DAMSON SPAWN, 3 to 4 feet. Terms cash with order.

A. SEARS, Mr. Skinner's, East Farleigh, Kent.

RHODODENDRONS.

ISAAC DAVIES & SON

Have an immense stock of the above to offer, from 1½ to 4 feet high, thickly covered with flower-buds; from the common kind to the choicest varieties in cultivation, and including many new ones of our own raising, of which we hold the entire stock.

RHODODENDRONS hybrid seedlings, various colours, fine bushes, 3 to 4 feet, 3*s.* to 4*os.* per doz n; 2½ to 3 feet, 18*s.* per dozen, £7 per 100.

" selected hybrid seedlings, with colour labelled on each plant, fine bushes, 2½ to 4 feet, 24*s.* to 36*s.* per dozen.

" choice named kinds (including many beautiful varieties of our own raising) fine bushy plants, 1½ to 3½ feet, 30*s.*, 40*s.* to 60*s.* per dozen.

**** Over 90 in every 100 of the above well set with buds.

RHODODENDRONS, mixed hybrid seedlings, in great variety of colours, and from early and late stratus, nice bushy plants, 15 inches high, 50*s.* per 100

" seedlings from our choicest and newest kinds, each variety kept separate, and can be supplied in a fair proportion of each; bushy plants, 9 to 12 inches high, 30*s.* per 100.

HOLLIES, &c.

The following carry fine balls of roots, and are in excellent condition for removal.—

HOLLY, Hodgin's, fine pyramidal plants, 2 to 4 feet high, 2*s.* to 3*s.* 6*d.* each.

" variegated, in sorts, 2 to 4 feet high, well formed plants, 2*s.* to 3*s.* 6*d.* each

" common green, 1½ to 2½ and 3 feet high, 6*s.* to 9*s.* and 12*s.* per dozen.

PRIVET, Oval-leaved, strong and bushy, 2½ to 6 feet high, 5*s.*, 8*s.* 16*s.*, to 25*s.* per 100

DAPHNE MEZEREUM, bushy and covered with buds, 15 to 18 inches high; reds, 4*s.* per dozen 25*s.* per 100; whites, 4*s.* per dozen. 30*s.* per 100.

PLANTS SUITABLE FOR POTTING.

RHODODENDRONS, hybrid seedlings, of various colours, 1½ to 2 feet, green, bushy plants, all covered with buds, 15*s.* per dozen, £5 per 100.

" PRÆCOX, good bushy plants, covered with buds, 12*s.* to 18*s.* per dozen.

AZALEA MOLLIS, seedlings, from three or four of the best varieties, distinct light and dark colours, each kept separate, nice bushes, five to twelve buds on each, 9*s.* per dozen, 50*s.* per 100

" PONTICA, bushy plants, well budded, 6*s.*, 9*s.* to 12*s.* per dozen.

" DAVIESII, beautiful trusses of white sweet-scented flowers, best of all for forcing, fine plants, well-budded, 24*s.* to 30*s.* per dozen

" AVALANCHE, pure white sweet-scented flowers, very compact and bushy growing plant; nice plants, well-budded, 2*s.* 6*d.* each, 24*s.* per dozen.

ANDROMEDA FLORIBUNDA, nice bushes, a mass of flower-buds, 12*s.* per dozen.

PERNETTYA SPECIOSA (our own variety), quite hardy, berries pink, well berried plants 12*s.* per dozen.

SKIMMIA JAPONICA, well established (twelve months) in pots very green, and thickly covered with berries; large and well formed plants, 18*s.* to 24*s.* per dozen.

We now hold a very large stock of our beautiful varieties of sweet-scented RHODODENDRONS and AZALEAS CATALOGUE, fully describing them and containing prices of our GENERAL NURSERY STOCK, will be forwarded to any address on application.

All goods free on Rail, but a small charge will be made for package. Cash or reference from unknown correspondents.

ORMSKIRK, LANCASHIRE.

COMTE BRAZZA'S NEW DOUBLE WHITE VIOLET,

"WHITE NEAPOLITAN."

Very large, pure white, sweetly scented flowers. Without question the finest Violet in cultivation. For full description, see New CATALOGUE of Roses, Trees, Shrubs, and Florists' Flowers, free on application to

THOMAS S. WARE,

HALE FARM NURSERY, TOTTENHAM, LONDON.

Laing's Rose Trees.

JOHN LAING & CO.

Roses for Removal in November.

	Per doz.
Standards, choicest and best sorts	18*s.* and 21*s.*
Half-standards " " "	15*s.* " 18*s.*
Dwarfs " " "	9*s.* " 12*s.*

Our selection of above Perpetuals.

Vigorous growth, well-rooted, unequalled quality.

Rose Growers, Forest Hill, S.E.

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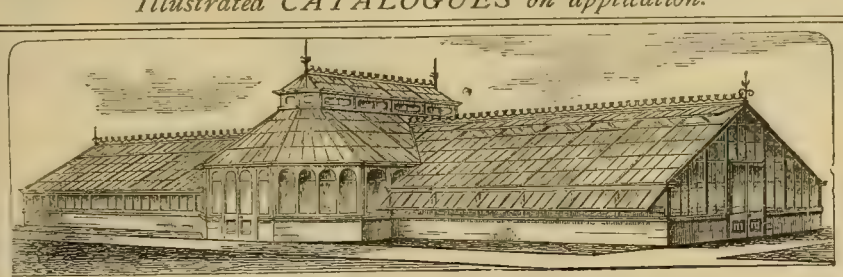
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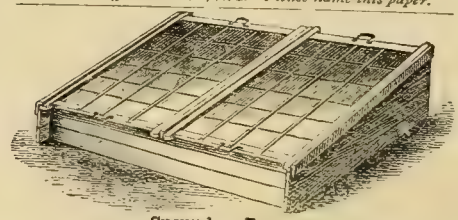
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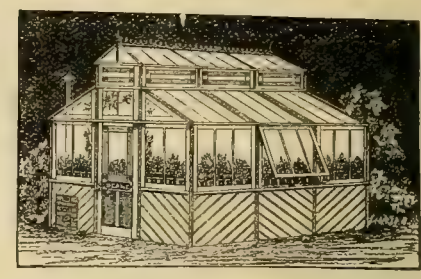
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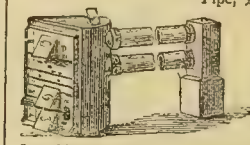
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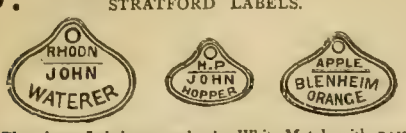
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This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

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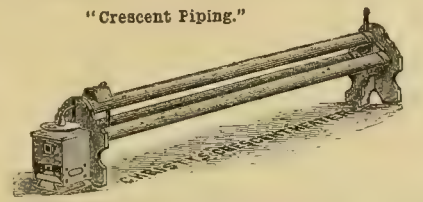
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Screens and Piping for unconsumed products of combustion provided; Packing included. The Trade Supplied.

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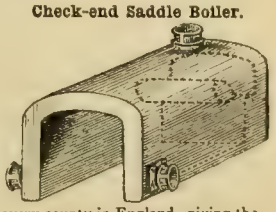
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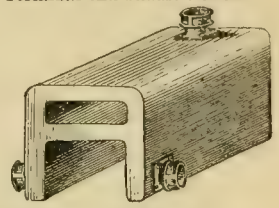
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Catalogues Post-free. All Boilers are guaranteed to heat efficiently the quantity of piping stated in the Catalogue.

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PATENT

WROUGHT-IRON TUBULAR

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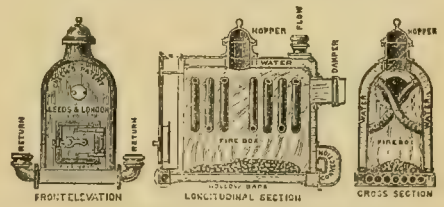
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They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3 188 .



The *Journal of Horticulture* of June 9 says:—

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The *Garden* of June 11 says:—

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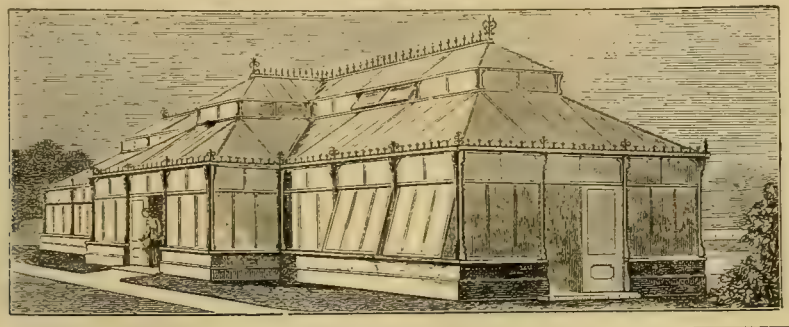
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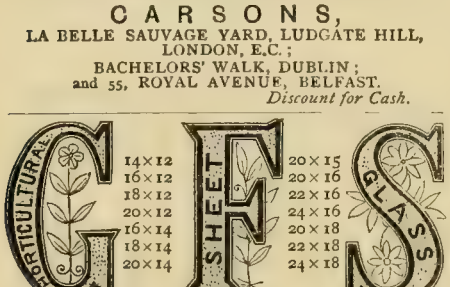
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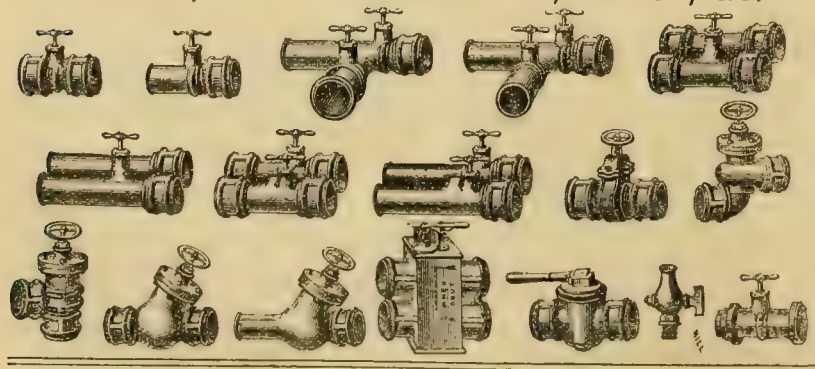
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 566.—Vol. XXII. { New Series. } SATURDAY, NOVEMBER 1, 1884. { Registered at the General Post-office as a Newspaper. } Price 6d. { Post-free, 6½d. }

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Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Lily of the Valley.

ELSTER AND KOLLMANN, Lübeck, near Hamburgh, offer the above, 3-years old, extra strong Crowns, at 34s. per 100, three months terms. Terms for cash on application.

SPIRÆA JAPONICA, 2-yr. transplanted. Strong clumps, for forcing, 10s. per 100.

W. C. SLOCOCK, Goldworth "Old" Nursery, Woking.

TO THE TRADE.—W. BARRACK, NURSERYMAN, Kendal, offers Maréchal Niel ROSES, 2 feet, on own roots, strong stuff, at 9s. per dozen, 70s. per 100.

ON SALE, TWO good PEACH TREES; gave fruit this summer 10 oz. weight. Address, GARDENER, Bankfield, Whalley Range, Manchester.

DWARF-TRAINED FRUIT TREES are extra fine with us this year. All leading varieties of PEACHES, NECTARINES, APRICOTS, PEARS, APPLES, PLUMS, &c. LIST post-free.

GEO. COOLING AND SON, The Nurseries, Bath.

Grape Vines.—Grape Vines.

B. S. WILLIAMS begs to announce that his stock of VINES this season is remarkably fine, and is now ready for sending out. A Descriptive LIST will be found in the BULB CATALOGUE, post-free on application. Early Orders are solicited.

Victoria and Paradise Nurseries, Upper Holloway, N.

TWO THOUSAND VINES for immediate fruiting and for permanent planting, thoroughly ripened Canes. CATALOGUE on application.

J. DICKSON AND SONS, "Newton" Nurseries, Chester.

GRAPE VINES, strong Fruiting and Planting Canes; also STRAWBERRIES in pots. LIST on application.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

To the Trade.

CUCUMBER SEEDS.—Tender and True and Telegraph, of our own saving. Carefully selected stocks which we can offer with confidence. Price on application.

GEO. COOLING AND SON, Seedsmen, Bath.

SALES BY AUCTION.

Sales Every Monday, Thursday, and Saturday.

DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C. (next door but one to Bennett's Clock), every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS from Holland, in lots to suit the Trade and Private Buyers.

On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Tottenham

Adjoining the Station.

SALE of remarkably well grown NURSERY STOCK, Dwarf ROSES, HERBACEOUS PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, the Hale Farm Nurseries, Tottenham, on TUESDAY, November 4, at 12 o'Clock precisely, a large quantity of unusually well grown NURSERY STOCK, including 3000 Laurels, 1½ to 4 feet; 1000 bushy Aucuba japonica, 1 to 1½ foot; 3000 Standard Ornamental Trees, 5000 well-furnished Euonymus, good for potting; 1000 Tree Carnations, in all the leading varieties; 2000 Tree Carnation "Andalusia," the finest yellow tree variety; 1000 Pinks "Mrs. Sinkins;" 2600 Violets, 8000 Dwarf Roses, in first-class varieties; 3000 hardy Climbers, 40,000 Seakale and Asparagus, extra strong; 10,000 Christmas Roses (Helleborus), 1000 Anemone japonica, 50,000 double and single Narcissus, and large quantities of other HERBACEOUS PLANTS and BULBS.

May be viewed. Catalogues may be had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Wednesday Next.

25,000 LILIUM AURATUM.

5000 LILIUM TENUIFOLIUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 5, at half-past 12 o'Clock precisely, an unusually extensive consignment of 25,000 LILIUM AURATUM, just received from Japan in splendid condition, and 5000 LILIUM TENUIFOLIUM, received direct from America for unreserved sale.

On view morning of Sale, and Catalogues had.

Wednesday Next.

A fine assortment of Hardy English-grown LILIES and BULBS, 300 CAMELLIAS and AZALEAS from Belgium, 300 Standard ROSES of the best sorts, a selection of FERNS, PALMS, and other decorative PLANTS; HELLEBORUS NIGER, and other Plants and Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 5, at half-past 12 o'Clock precisely.

On view morning of Sale and Catalogues had.

Foots Cray, Kent.

By order of the Executrix, who is desirous of reducing the Stock and disposing of the Business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Sidcup Hill Nursery, Foots Cray, about 1 mile from Sidcup Station, on WEDNESDAY and THURSDAY, November 5 and 6, at 12 o'Clock precisely each day, a further portion of the NURSERY STOCK, consisting of specimen Conifers and Evergreens, 1000 Laurels, 1 to 2½ feet; 800 Portugal Laurels, 2 to 4 feet; Ornamental and Forest Trees, Standard and Pyramid Fruit Trees, 1000 Aucubas and Common Hollies, 2000 Standard and Dwarf Roses, Climbing Plants, and other Stock.

May now be viewed. Catalogues may be had on the Premises and of the Auctioneers at their Central Auction Rooms and Estate Offices, 67 and 68, Cheapside, London, E.C.

N.B.—The old established NURSERY BUSINESS is to be sold on greatly reduced terms. Full particulars of the Auctioneers.

Friday Next.

VERY VALUABLE IMPORTATIONS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 7, a splendid lot of SOPHRONITIS GRANDIFLORA, CATTLEYA CRISPA, C. LODDIGESI, true; ONCIDIUM MARSHALLIANUM, LÆLIA DAYANA, MILTONIA CANDIDA, BURLINGTONIA FRAGRANS; CATTLEYAS of sorts; ODONTOGLOSSUMS; several very fine NEW ORCHIDS, &c.

On view morning of Sale, and Catalogues had.

Friday Next

VALUABLE COLLECTION OF ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 78, Cheapside, E.C., on FRIDAY NEXT, at half-past 12 o'Clock precisely, a COLLECTION of VALUABLE ESTABLISHED ORCHIDS formed by a gentleman giving up their culture through change of residence. The collection contains Seedling Cypripediums,

Cattleya labiata pallida
Cypripedium stellhgerum, extra fine variety
Dendrobium Findleyanum
,, Farmeri
,, aurea-flavum
,, Dayanum
,, nobile intermedia
,, Griffithianum (Rollisson's original plant, with 50 bulbs)
,, albo-sanguincum
,, Ainsworthi
,, bicolor
,, glumaceum
,, amœnum
,, Gibsoni
Saccolabium retusum
,, præmorsum
Lælia purpurata alba
Epidendrum Frederici Guilielmi
Vanda Cathcarti
,, suavis Veitchii
Acrides nobile
,, Leeanum
,, affine superbum
,, ,, roseum
,, suavissimum flavidum
,, odoratum purpurascens
,, nobile—Rucker's variety (the original plant bought at Mendel's sale, 4 feet high, 32 leaves
Sobralia macrantha (Swolley's var.)
Masdevallia chimæra Wallisi
Calanthe nivalis
,, Turneri

On view morning of Sale, and Catalogues had.

Milford Nurseries, Godalming, near the Milford and New Godalming Railway Stations.

ANNUAL SALE of First-class NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, the Milford Nurseries, Godalming, on TUESDAY, November 11, and two following days, at 12 o'Clock precisely each day, several Acres of beautifully grown NURSERY STOCK, in fine condition for removal, and lotted to suit the Trade and Private Buyers, comprising 3000 specimen Evergreens and Conifers, 10,000 Laurel rotundifolium, 1 to 2½ feet; 2000 green and variegated Aucubas, 3000 ditto Box, 3000 Berberis Darwinii, 5000 Retinospora aurea and R. flavescens, 1 to 2 feet, suitable for pots; 1000 Cupressus Lawsoniana lutea, 1 to 2 feet; 1000 Euonymus radicans, 2000 fine named and hybrid Rhododendrons, 3000 Dwarf Roses, Fruit Trees, 5000 Red Currants, 3000 Ornamental Park Trees, 6 to 10 feet; 100,000 transplanted Forest Trees, 10,000 Evergreen Privet, 2 to 3 feet; 13,000 Spruce Firs, 1 to 3 feet—3000 fit for Christmas Trees; and other Stock.

May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—Messrs. PROTHEROE & MORRIS beg to call the special attention of Gentlemen, Nurserymen, and others requiring well-grown stock for immediate effect, to the above highly important Sale.

Leytonstone, Essex.

IMPORTANT SALE of a large quantity of thriving NURSERY STOCK, viz., choice Evergreen, Coniferæ, and Deciduous Shrubs, Hardy American Plants, Ornamental and Forest Trees, Selected Fruit Trees, 2000 Standard, Dwarf, and other Roses, choice Greenhouse Plants, Double Primulas, Vines, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, on the Premises, The American and Fillebrook Nurseries, adjoining the Railway Station, on THURSDAY and FRIDAY, November 13 and 14, at 12 o'Clock precisely each day.

Full particulars in Catalogues, which may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Forthcoming Sales of Nursery Stock.

MESSRS. PROTHEROE AND MORRIS beg to call the attention of intending purchasers to the following Sales:—

NOV. 18.—THE NURSERY, ASHFORD, KENT. CLEARANCE SALE of the whole of the Stock growing upon that portion of the Nursery taken by the Burial Board for the extension of the Cemetery, and required by January 1 next.

NOV. 18 and 19. — At the NURSERY, SUTTON, SURREY, by order of Mr. H. Potter, two days' Sale of unusually WELL GROWN NURSERY STOCK.

DATE NOT YET FIXED.—The ROYAL NURSERIES, ASCOT, by order of Messrs John Standish & Co., important two days' SALE of NURSERY STOCK, for the growth of which this Nursery is so justly celebrated

67 and 68, Cheapside, E.C.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.

On view mornings of Sale, and Catalogues had.

Monday Next.—(Sale No. 6760.)

PLANTS from GHENT.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, November 3, 80 fine plants of AZALEA INDICA, in variety; 50 DRACÆNA TERMINALIS, and 60 FICUS ELASTICA, from Ghent.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6762.)

PLANTS from BELGIAN, DUTCH, and ENGLISH NURSERIES.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 5, a consignment of choice named CAMELLIAS, AZALEA INDICA, DRACÆNA INDIVISA, D. TERMINALIS, D. CONGESTA, FICUS ELASTICA, PALMS, and other Plants from Ghent, Standard ROSES to name, Pyramid and Dwarf-trained FRUIT TREES from a well known English Nursery. Also a consignment of SHRUBS, Ornamental CONIFERS, and other Plants in great variety from Holland, and a large assortment of first-class DUTCH BULBS, LILY of the VALLEY, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6763.)

5000 LILIUM AURATUM from JAPAN.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 6, a consignment of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan in fine condition.

On view morning of Sale, and Catalogues had.

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18 Cases of Orchids just received direct from Brazil.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 6, 18 cases just received direct from Brazil, comprising 380 CATTLEYAS, in variety, 330 LÆLIA PURPURATA, including some enormous masses, 18 ZYGOPETALUM GAUTIERI, 25 MILTONIA species, 12 plants of a sweet-scented MILTONIA, 25 ONCIDIUM BIFOLIUM, 16 ONCIDIUM species, &c.

On view morning of Sale, and Catalogues had.

4500 Tuberoses, Lilies in Variety, and other Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 11, at half-past 12 o'Clock precisely, a consignment of 4500 TUBEROSES from South Africa; Home-grown LILIES in variety; about 25 lb. of THRINAX RECLINATA SEED; 500 PRIMULA CASHMIRIANA and ROSEA; also a quantity of LILIUM SPECIOSUM L. UMBELLATUM, L. TIGRINUM, L. THUNBERGIANUM, LILY of the VALLEY; AMARYLLIS LONGIFOLIA; IRIS KÆMPFERI, &c., from Holland.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6763).

IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 6, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA TRIANÆ SPECIES, Popayan var.; C. SKINNERI, C. GIGAS, C. CITRINA, C. MENDELI, ODONTOGLOSSUM ALEXANDRÆ, of the finest type; MASDEVALLIA HARRYANA, COMPARETTIA MACROPLECTRON, PILUMNA FRAGRANS var. NOBILIS, PINGUICULA CAUDATA, &c., from Messrs. Shuttleworth, Carder & Co. Also a small collection of Specimen ESTABLISHED ORCHIDS, including Cattleya labiata pallida, Cypripedium Chantini, Dendrobium Schrœderi, Saccolabium Blumei Russelliana, Cattleya Warneri, Masdevallias, Oncidiums, Lælia elegans alba, Cœlogyne Massangeana, Odontoglossums, Lycastes, &c.; and 48 plants of Vanda Hookeri-10 Aërides Houlletianum, 26 Calanthe Regnieri, and 12 Phalænopsis Esmeralda.

On view morning of Sale, and Catalogues had.

Hundleby, near Spilsby.

The Nursery is situated within half a mile of the Spilsby Station on the East Lincolnshire Line, Great Northern Railway

MR. H. SIMPSON, instructed by Mr. J. W. Cole (in consequence of the expiration of the Lease of the Halton Nursery), will offer by PUBLIC AUCTION, on the Holly Nursery Grounds, Hundleby, on TUESDAY, November 4, at 11 o'Clock, the whole of the valuable NURSERY STOCK, comprising:—

40,000 ASH, 2 to 3 feet. 20,000 Ash, 2 to 4 feet.
50,000 LARCH, 2 to 3 feet. 100,000 Larch, 3 to 5 feet. 50,000 Larch, 4 to 6 feet. Three times transplanted.
25,000 OAKS, 2 to 4 feet. 10,000 Oaks, 3 to 5 feet.
5,000 PRIVET, 2 to 3 feet.
40,000 QUICK, 2-yr. transplanted.
100,000 SPRUCE, 1 to 2 feet 50,000 Spruce, 1½ to 2 feet
5000 Spruce, 2 to 3 feet.
10,000 SCOTCH FIRS, 12 to 15 inches.
10,000 SILVER FIRS, 1 to 2 feet.
5,000 AUSTRIACA PINES and LARICIO PINES, 1 to 2 feet.
10,000 ELMS, LIMES, SYCAMORES, BIRCH, HORSE CHESTNUTS, MOUNTAIN ASH, SPANISH CHESTNUTS, THORNS, for Hedge-row or Park Trees, 8 to 12 feet, all well-rooted and transplanted during the past two years.
1,000 COMMON YEWS, 2 to 3 feet. 2000 PORTUGAL LAURELS, 2 to 3 feet. 2000 Common LAURELS, 3 to 4 feet. 1000 ROTUNDIFOLIA, 2 to 3 feet.
1,000 Gold, Silver, and Variegated HOLLIES, 2 to 4 feet.
2,000 yards of dwarf BOX EDGING.

A large quantity of SHRUBS in lots, consisting of Aucubas and Hollies of sorts (Gold, Silver, Yellow-berried), Yews, Box, Juniper, erecta viridis, Portugal Laurel, Cupressus Lawsoniana, Rhododendrons, &c.

The Ash, Larch, Spruce, Oaks, Quick, Scotch and Silver Firs will be sold by the 1000, and the remainder in quantities to suit purchasers.

The Ash, Oak and Quick are growing at the Halton Nursery, and can be inspected the day previous and on the morning of Sale.

The Clock House, Clapham Common, S.W.

CLEARANCE SALE.

MESSRS. J. McLACHLAN AND SONS have received instructions from J. Kemp Welch, Esq., to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, November 12, at 1 o'Clock precisely, the GREENHOUSE PLANTS, IRON HOT-WATER PIPING, GARDEN IMPLEMENTS, LIGHTS, and FRAMES, about 4 loads of MANURE, LEAD, IRON, and SLATE CISTERNS, IRON HURDLES, and general OUTDOOR EFFECTS.

Catalogues to be had of the Auctioneer, 2, The Pavement, Clapham Common, S.W.

Woodham Hall.

1½ mile from Woking Junction, on the Addlestone Road.

MESSRS. GIDDY AND TURNER (having disposed of the estate) will include in the SALE on WEDNESDAY and THURSDAY, November 12 and 13, a choice COLLECTION of VALUABLE PLANTS, including fine Camellias, full of flower-buds; large Azalea indica, full of flowers for cutting; grand Chrysanthemums, in large plants; splendid plants of Daphnes, coloured Dracænas, Poinsettias, Euphorbias, specimen Maidenhair Ferns, in large pots; and several thousand other plants, such as Amaryllis, Gloxinias, Pelargoniums, Cinerarias, bedding Geraniums, foliage bedding plants, &c. Also a quantity of useful Garden Effects.

Catalogues had of the Auctioneers, 121, Pall Mall, S.W.; or at their Branch Offices, Guildford and Sunningdale.

Great Clearance Sale of Greenhouse, Stove, and OTHER ORNAMENTAL PLANTS.

THE LAWSON SEED AND NURSERY CO. (Limited) have resolved to DISPOSE, of by PUBLIC AUCTION, without reserve, on THURSDAY and FRIDAY, November 13 and 14, at 11 o'Clock each day, the whole of the valuable contents of the extensive Plant-houses at New Golden Acre, Granton Road, comprising many thousands of the leading Ornamental Plants, such as PALMS, DRACÆNAS, FICUS, FERNS, AZALEAS, CAMELLIAS, Tea ROSES, VINES, &c., well worthy of the attention of the Trade and others.

Catalogues are in preparation, and may be had from THE LAWSON COMPANY, George IV. Bridge; or from the Auctioneer, DAVID MITCHELL, 6, Comely Bank, Edinburgh.

Isleworth, Middlesex.

SALE of EXCEEDINGLY VALUABLE FREEHOLD and COPYHOLD PROPERTIES.

MR. E. P. NEWMAN will SELL by AUCTION, at the Auction Mart, Tokenhouse Yard, London, E.C., on TUESDAY, Nov. 18, at 12 o'Clock, about 15½ acres of exceedingly fertile FRUIT PLANTATIONS known as the Mogden House Gardens, together with two well-built detached residences thereon, Cottage, and convenient Outbuildings, situate in the Twickenham Road; also the Fruit Plantation known as Lewis' Garden, containing about 3 acres. The Land is well planted with Fruit Trees, and has extensive frontages admirably adapted for Building Purposes, being within a few minutes' walk of three Railway Stations, and which will be sold in four lots.

Particulars, with Plans, can be obtained of Messrs. TYLEE, WICKHAM AND MOBERLY, Solicitors, 14, Essex Street, Strand; of A. T. DRAPER, Esq., Surveyor, Leicester; E. D. DRAPER, Esq., Solicitor, Bromley, Kent; and of the Auctioneer and Estate Agent, 41, High Street, Uxbridge, and Hillingdon, Middlesex.

Important Sale of Stove and Greenhouse Plants.

MESSRS. HUTCHISON AND DIXON will SELL by AUCTION, on MONDAY, November 10, at the Mart, 7, West Nile Street, Glasgow, commencing at 12 o'Clock noon, STOVE and GREENHOUSE PLANTS, ORCHIDS, FERNS, STATUARY, &c. (that belonged to the late A. B. Stewart, Esq., Rawcliff Lodge, Langside, and removed for convenience of Sale), including Dendrobium chrysotoxum, Pierardi latifolium, Calceolus, Parishii, nobile, densiflorum, and primulinum giganteum; Oncidium sphacelatum majus, aurosum, luridum guttatum, flexuosum, Wentworthianum, incurvum, macranthum, and Papilio; Calanthe masuca, veratrifolia, Veitchii, and vestita oculata; Coelogyne cristata and oculata, Lycaste Skinneri, cruenta and Deppei; Sophronitis grandiflora, best dark variety; Vanda tricolor, fine variety; Ansellia africana, large bulbs; Vanda suavis Veitchii, Lælia purpurata, large plant, fine variety; Epidendrum prismatocarpum, Aërides nobile, Stanhopea grandiflora, Maxillaria venusta, Cymbidium Mastersii superbum, showing flower; Sobralia macrantha nana, Thunia alba and Marshallii, Cypripedium biflorum, insigne, caudatum, Maulei, true, showing flower; Phaius Wallichii, large plant; Odontoglossum Alexandræ, Andersonianum, Pescatorei, triumphans, cirrosum, Lindleyanum, platyodon, cordatum, and other best selected varieties, many of them specimens in the finest order; Masdevallia Harryana superba, Veitchii, Lindeni, Davisii, amabilis, chimæra, and tovarensis, all very fine plants. Hymenophyllum demissum, dilatatum, exsertum, humile, fuciforme, obtusum, crispatum, pectinatum, caudiculatum (the largest specimen in the country, 1 foot 6 inches high, 2 feet through, perfect, extra fine plant); Oliveseum, tamaniscifolium, attenuatum, flexuosum, and scabrum; Trichomanes radicans, Bauerianum, reniforme (perhaps the finest plant in Europe, perfect specimen, 2 feet through), trichoideum, maximum; Lushnathianum superbum (perfect), auriculatum; Todea intermedia, superba, and pellucida; Dicksonia antarctica and squarrosa Gleichenia dicarpa, rupestris, and speluncæ; Davallia Kæmpferi, Dasylirion longifolium glaucum; (grand specimen), Blechnum brasiliense, Beaucarnea longifolia (extra fine), Seaforthia elegans, Latania borbonica, Phormium tenax variegatum, fine exhibition specimen; Livistonia rotundifolia, Statice macroptera, Stephanotis floribunda, Clerodendron Thomsoni, and a large quantity of other Stove and Greenhouse Plants, many of them being specimens; also STATUARY in life size, BUSTS, PEDESTALS, &c.

NOTE.—The Auctioneers beg to call the special attention of intending purchasers to the above sale. The Orchids and Odontoglossums are all the very best selected varieties, many of them being specimens in the finest order. The Ferns are all rare sorts of their kind (two of them being perhaps the finest and largest in Europe), selected by Mr. Stewart with the greatest care; and altogether the Collection is one of the best offered in Glasgow for a considerable time.

Full particulars in Catalogues, now ready, to be had free upon application to the Auctioneers.

Hale Farm Nurseries, Tottenham, London.

AUCTION SALE

OF VALUABLE WELL-GROWN NURSERY STOCK.

Including several thousands of strong Dwarf Hybrid-perpetual, Moss, and Provence ROSES, in all the best varieties.
A quantity of Standard Hybrid Perpetual ROSES in best sorts.
A quantity of Dwarf Gloire de Dijon ROSES.
Oval-leaved PRIVET, very bushy stuff, invaluable for villa planting.
Many thousand EUONYMUS JAPONICA, 1 to 2 feet, very bushy, fine for pots and boxes.
Thousands of AUCUBA JAPONICA, specially fine bushy stuff, 1 to 2 feet.
TREE CARNATIONS, in best varieties.
SPIRÆA JAPONICA, LILY OF THE VALLEY, DIELYTRA SPECTABILIS, and other forcing stuff.
Thousands of Standard PLANES, LIMES, LABURNUMS, POPLARS, &c., in fine strong trees.
Large quantity of Common LAURELS, very fine and bushy, 2½ to 4 feet.
Thousands of Hardy CLIMBERS, all the best sorts, including JASMINES, LONICERAS, AMPELOPSIS, IVIES, ESCALLONIAS, &c.
Thousands of LILIUM CANDIDUM, very strong bulbs.
A large quantity of HELLEBORUS NIGER, and H. NIGER MAXIMA.
Several thousands of extraordinarily fine strong forcing SEAKALE and ASPARAGUS.

The Sale will be held on TUESDAY, Nov. 4.

Catalogues may be had on application to THOMAS S. WARE, at above address.

WANTED TO RENT, on Lease, about 1 or 2 Acres of LAND (with House preferred), within about 8 miles of Covent Garden Market, for Florist Trade, and the Erection of a few Greenhouses.
W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, London, W.C.

TO BE DISPOSED OF, a first-class SEED BUSINESS, in one of the largest towns in the Midland Counties.
Apply, Z. Y. X., Hurst & Son, 152, Houndsditch, London, E.

FOR SALE, a NURSERY, Old-established, with many acres of Prime Stock suitable for the increasing wants of a large seaside resort. The numerous Green and Forcing Houses are in full working order. Very easy terms may be made by a responsible purchaser, as the owner is advancing in years and desirous of retiring. No agents.
Apply by letter to Mr. LAMB, 14, Thavies Inn, Holborn, London, W.C.

FOR SALE a NURSERY and SEED BUSINESS at the thriving Market Town of Denbigh (North Wales). Nurseries about 14 acres, with a good saleable stock of Forest, Fruit, and other Trees and Shrubs, Greenhouse, &c. Very favourably situated near to railway station. Land in good condition and on easy terms. Premises (leasehold, and rent low) for Seed Business situated in the centre of the town in the main street, to be disposed of on favourable terms to purchaser.
All particulars on application to Mr. HUGH ROBERTS, Crypt Chambers, Chester.

FOR SALE, MARKET GARDEN LAND, 17 acres in ring fence—8 Acres of the earliest Garden Sand Land in England, suitable for growing very early Peas, Potatos, &c., with 9 acres of very good Pasture. Cottage, Barn, and Stable. 3½ miles from Devizes, 6½ from Chippenham, and 16 from Bath Stations. Price £1400. To view, apply to owner, H. A. WADWORTH, Brewery, Devizes, Wilts.

HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.
A GRAND CHRYSANTHEMUM SHOW will be held in the Public Rooms, Jarratt Street, Hull, on THURSDAY and FRIDAY, November 20 and 21.
The Prizes, which amount to nearly ONE HUNDRED POUNDS for CHRYSANTHEMUMS alone, include the following:— 48 Blooms, £10, £7, £4, £2.
24 Blooms, £5, £2 10s., £1, 10s.
Schedules may be had on application to
R. FALCONER JAMESON, } Hon.
WM. HAWKSWORTH, } Secs.
Queen's Dock, Hull.

THE FOURTH GRAND EXHIBITION of CHRYSANTHEMUMS, FRUITS, and VEGETABLES, Fine Art Exhibition Building, York, NOVEMBER 26, 27, and 28.
Group of CHRYSANTHEMUMS, arranged for effect, 9 feet diameter.—1st prize, a Silver Cup, given by the Right Hon. the Lord Mayor of York.
Twelve CHRYSANTHEMUMS, large flowered, in pots.—1st prize, a Silver Cup, given by the Sheriff of York.
Twenty-four CHRYSANTHEMUMS, large flowered, cut.—1st prize, a Silver Cup, given by the ex-Sheriff of York.
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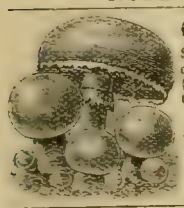
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 1, 1884.

TICHBORNE, HANTS.

ONE of the feeders of Isaak Walton's beloved Itchen, on whose banks he now sleeps, rises at Cheriton, above Alresford, and two miles down the stream it flows past the poor, little, old village, a small rookery of houses, indifferently built and in bad repair, on rising ground by the roadside, with a queer small church at the top of the hill. This is Tichborne. The church, with its early Norman chancel, square embattled tower and the Tichborne chantry filled with the monuments of the family, was built in the reign of Henry II. by Roger of Tichborne we are told, who held land here under the Bishop of Winchester. So the story runs on the spot; but there are many bricks used in the building, and the present church was really built in 1703, though part of the original building may have been retained, and the Tichborne monuments were undisturbed. So that in this private chantry, which runs almost the length of the little building, and looks like an aisle of the church, the dust of the Tichbornes has gathered during 700 years. Mr. Woodward, the historian of Hampshire, discredits the extreme antiquity of the family, which, he says, settled here in the twelfth century. On the other hand the unfortunate Chidiock Tichborne, whose pathetic story, suffering as he did for his faith, is told by Isaac Disraeli in his *Curiosities of Literature*, declared himself to be "descended from a house from 200 years before the Conquest." It is said in the song,

> "Along the glades of Annandale the gentle Johnstones ride;
> They have been there a thousand years and a thousand more shall bide."

So may it be with the Tichbornes, whose eleventh baronet was lost at sea, while the estate of the twelfth, the present Sir Henry A. J. Doughty-Tichborne, was mulcted, in the famous trial of 1872-4, of £80,000 in law expenses.

Very few Saxon families of importance survived the Conquest, though many freemen, whose obscurity protected them, remained on the land doing homage to the new proprietors. The word Tichborne, as it was formerly written, does not occur in *Domesday Book*. Its first appearance in history is in a charter of the year 901, when it was used to designate the Titch, a stream or burn. Roger of Tichborne, the church-builder, seems to have been one of the most considerable of the early members of the family, and it was his wife Isabel, the heroine of the "Crawls," whose death-bed request led to the famous "Tichborne dole." According to the story, which is still fervently believed in the village, Isabel on her deathbed requested her husband to make an annual distribution of alms to the poor, in memory of herself. Roger offered her as much land as she could crawl round; and considering her condition, the "Crawls" of 23 acres is a large field, and it lies some distance from the house! What really happened was a last request by

Sir Roger's wife that a dole of bread should be distributed annually for ever to all who should apply for it on the Feast of the Annunciation of the Virgin Mary. The pious gift instituted by Isabel, or Mabella Tichborne, was bestowed literally as she had desired during many centuries, and the twenty-fifth of March became the festive day of the family, when friends and relatives of all branches of the house of Tichborne assembled from far and near to assist at the ceremony of the distribution. In 1670, when a baronetcy had been conferred on the family and their fortunes flowed high, an artist was employed to paint a picture of the distribution of the dole. The ceremony is represented as having taken place on the lawn on the west front of the old manor house, and, as the portraits of the members of the family and many of their retainers are likenesses, the painting is naturally held in great esteem at Tichborne. About a hundred figures are introduced in this valuable family picture. Sir Henry Tichborne is represented as standing in the centre, while around him are grouped his family and various relatives. The villagers, who stand ready to receive the bounty, are dressed in the costume of the period, that of Charles II., as, of course, are all the others whom the painter has introduced. All the servants of the household are present, the novices and younger people looking on with great curiosity. Some of the domestics carry baskets filled with loaves, Sir Henry's little daughter is eagerly assisting on the occasion, and holds up her apron filled with loaves. Those important feminine officials, who wield enormous power in some households, the cook and nurse and housekeeper, are there, and not the least conspicuous among the attendants is "Black Peter" a Hindoo. This man had been formerly a slave. A member of the family who had crossed the ocean, like the unfortunate Roger, returned home—which Roger failed to do—bringing Black Peter with him, and the poor fellow, being a slave, was set free, and being "a heathen," was converted. "Growler," the porter's dog, is there too, and over the entrance gateway the artist has depicted the arms of the family, and their motto, "Pugno pro patria."

At the close of the last century, 100 years after the painting of this interesting picture, the dole was still distributed, with the same ceremony, and the utmost profusion. But, most unfortunately for lovers of the picturesque and admirers of old customs, so many idlers, vagabonds, and pilferers collected in these later times to celebrate the distribution that the magistrates and gentry of the district interposed, and in consequence of their representations this ancient usage was discontinued. The "dole" is now properly restricted to gifts of flour to the poor of Tichborne and Cheriton, and of beef and clothing at Christmas.

The baronetcy was won by Sir Benjamin Tichborne, who, in the reign of Elizabeth, filled the office of Sheriff of Hampshire, as several of the family had done previously. He was in favour with the Queen, who in 1601 visited and knighted him on her way to Basing House. Two years later, in his year of office, the Queen died, and Sir Benjamin proclaimed James I. without waiting for orders; hence the baronetcy and the favour of the king, who paid him several visits. In the course of their long history, the fortunes of this ancient family have curiously ebbed and flowed. After the Battle of Cheriton, which was fought on their own land—at their front door, so to speak—between the respective forces of the king and Parliament, Sir Benjamin, the second baronet, who was on the royalist side, only escaped by hiding in an Oak, called the Tichborne Oak, and the whole of the estate being forfeited, nothing remained but his title. Father and son fought in the same battle and lost all. A small farm left to the younger Tichborne by a cousin formed his entire estate till the close of the Civil War, when the original property was restored to him, as his loyalty deserved.

It should here be noticed that the present occupants of Tichborne House are the mother of the young baronet and her second husband, Major Henry L. Wickham. The present baronet was a posthumous child, born in 1866. One may hope, as he will perhaps be altering and building one of these days, that he will observe betimes the folly and discomfort of over-great houses, such as modern custom has too often erected. The present Tichborne House forms but a small part of the older one, but it is pleasantly situated among the trees by the water side, with the village on higher ground, close to it. The stream from Cheriton passes round two sides of the lawn and through the gardens—the trout look up at you as you pass along the margin, and lazily bend their pliant tails and hide for a little while under the weeds. To one who was born betwixt sand and chalk, in Surrey, where the water is bright and the red-spotted trout are numerous, this is charming. It is said that towards Cheriton, a mile or two up the stream, the rivulet grows less and the trout larger. Trout will thrive in a very little water. One may say of Tichborne what the landscape gardener, Capability Brown, used to say, "This place has great capability." If the house were moved up the hill the water would probably be left behind, and with it the soil and the moisture that produce good gardens. With running water and perfect drainage the lower site seems the best, and if the point should be debated I think a chalk vale will be decided upon as a better site for a house than a chalk hill. *H. E.*

New Garden Plants.

CYPRIPEDIUM ASHBURTONIÆ EXPANSUM, *nov. var.*

I HAVE received two varieties of this plant from M. D. Massange de Louvrex, of Baillonville. I hear the one is common in Belgian gardens. It is the genuine old Ashburtoniæ, as it was raised by Mr. Cross, and distributed by Messrs. James Veitch & Sons, and as represented in the *Gardeners' Chronicle*, December 20, 1871, p. 1647, fig. It is easily recognised by its narrow upper sepal, with olive-green-brownish nerves, and similarly coloured connecting nervilli, a very few dark spots on the nerve at the base, and narrow petals. It is said to have long, narrow leaves, with very distinct marble shading, as is seen in Cypripedium barbatum. So much for the type. Now there is a fresh variety I would venture to name C. expansum. Some would prefer to give it a name of its own, but I have my good reasons to think it has quite the same descendance. It might be compared with Cypripedium œnanthum, were it not so distinct in its staminode. It is a fine thing. Its chief merit is its wide upper sepal, with a large ivory-white crescent-like zone from the top along the margin to the middle, where it has numerous dark brownish-black nerves covered with distant dark blotches, and the whole on a green ground colour. The nervilli are not conspicuous at all by colour. Petals much broader. It is said to have broad leaves, with a very light marbling. It was found by the Cattleya king, M. D. Massange de Louvrex, of Baillonville, at Messrs. James Veitch & Sons', as C. Ashburtoniæ. It would be highly desirable to learn from Messrs. James Veitch & Sons whether this is the offspring of a fresh cross, in which Cypripedium insigne, a very good variety, may have been the pollen parent, or whether it is improved by long growing, which I regard as utterly improbable. *H. G. Rchb. f.*

LÆLIA PERRINII, *Lindl.*

Mr. Sander's variety (individual?). A very curious and lovely thing, having the midlobe of the lip of the lightest purple, with a dark purple disc, and fine dark purple veins running outside. It was sent me lately by Mr. F. Sander. *H. G. Rchb. f.*

PINUS HALEPENSIS.

THIS Pine, though familiar enough to the sojourner along the Mediterranean coast and in the Levant, extending even into Afghanistan, is not often met with in this country, and is still less often seen in a cone-bearing state. For this reason we have availed ourselves of the opportunity of figuring a specimen lately sent by Mr. Webster from Lord Penrhyn's plantations at Penrhyn Castle, near Bangor (fig. 97) It is not a tree that we should recommend to be planted largely, as its loose habit and thin, scanty grey foliage forbid its being placed in the front rank as an ornamental tree. Neither can we commend it for its timber, for it is of too delicate a constitution to be planted here, except in special localities. But as an interesting tree—one, too, that has some claims to be the Pine or Fir of Scripture—it is amply worth growing. The botanical history of the tree is well known, and the figure, so far as it goes, is so characteristic that few details need be here given. The illustration shows the ashy grey branches with long spaces bare of leaves, the leaves themselves in pairs, ascending, and in brush-like tufts, and the deflexed, thick-stalked conical strobiles. The buds (not shown in the drawing) are small, cylindric, and conical at the apex, chestnut-brown in colour, and with deltoid acuminate scales torn at the edges. A section of the leaf seen under a low power of the microscope shows a thick layer of strengthening fibres (hypoderm) below the skin, and fine resin canals just within the hypoderm. The central bundle is two-fold, and surrounded by a well marked sheath.

PERPETUAL OR TREE FLOWERING CARNATIONS.

IF any one would rightly estimate the value of the perpetual or winter flowering Carnations he cannot do better than pay a visit to the Royal Nursery, Slough, and inspect Mr. Turner's wonderful collection. In a span-roofed house, commodious, light and airy, fully exposed all round, may be seen some 1500 plants, mainly in 5-inch and 6-inch pots, of wonderful vigour, free branching growth, and flowering with a profusion appreciable only by those who have a knowledge of the improvements made in this very useful class during the last fifteen years. When one remembers the perpetual Carnations of a quarter of a century ago—Tree Carnations, as they were very properly called—with a maximum of trunk, like the lopped trees one sometimes sees in country lanes, and a minimum of foliage at the top, from which a few flowers emanated—and compares them with the varieties of to-day, the advance is seen to be most marked. Now we possess an abundance of varieties, plants of vigorous constitution, with a free growth of blooming wood from the base of the plants, joined to a freedom and a successional character of flowering unknown in these earlier years. They may be said to flower almost all the year round, at any rate for nine months in the year. In Mr. Turner's house there is a front stage some 30 inches in height, with three other stages gradually rising in height to the back of the house. The stages are of stone or slate, covered with a thin layer of fine shingle on which the plants stand; the pots are clean, the surface soil is kept stirred, and water is given carefully as required. While the weather is soft and fine the doors and windows are thrown open widely, and an abundance of air given. This not only encourages a sturdy, hardy habit of growth, but tends to keep down greefly. It is surprising to be told that all these fine plants were raised from pipings made in the spring. That they have all been well cared for at all stages of their growth is certain; it is constant rather than laborious attentions that result in such fine plants and heads of bloom.

In the case of the ordinary summer flowering Carnations the head of flower may be said to be produced all at once; in the case of the perpetual flowering varieties the leading shoots bloom first, and the successional shoots lower down later on. The result is that the duration of bloom is extended over a considerable period. The plants have been flowering for weeks past, and it is noticeable that at present scarlet hues predominate. The red-coloured flowers are not only fine in colour, but large, full, and finely-formed petals. The following are at the head of this section:—Rufus, rich scarlet, very bright, large, full, and finely formed; Huntsman, bright scarlet, very showy;

Hector, bright red, large and very fine; Scarlet Nonpareil, bright scarlet, well-shaped flowers; Congress, bright blood-scarlet, handsome and free; Lord Derby, rich pale red, good smooth petals, large and full; and Herbert, bright red, very good. The best of the dark flowers—shaded crimson and maroon—are Negro, dark maroon, one of the very best, extra fine; Brunette, shaded crimson or maroon, fine shape; Indian Chief, rich maroon, very fine; and Burgundy, dark maroon, large and full, fine shape and very free. The purple flowers form but a very small section, striking and desirable as is this hue of colours. There are two that are well worthy of mention, viz., Purpurea, bright purple; and Master Mason, shaded purple, the petals slightly fimbriated. The rose-coloured flowers are charming, such as Juliette, deep rose, fine smooth petals, large full flowers, and good habit; Mrs. Llewelyn, bright rose, large, full, finely formed, and good bushy dwarf habit; and Seraph, beautiful deep rose, very pleasing and extra fine. The striped flowers have much novelty of character to commend them. There is Whipper-in, scarlet, very dark stripes, large full flowers, handsomely marked, and very free, one of the most distinct; Enchantress, deep pink flaked with dark purple; Conqueror, salmon-rose, slightly striped with purple, fine and distinct; and Ernestine, pale buff ground, flamed with bright rose. Amongst what may be termed pale flowers, pink, salmon, and soft rose, the following are very pretty:—Lady Macbeth, delicate pale flesh, very pleasing; Laura, flesh colour, charmingly fimbriated; Grace Wilder, delicate pink, finely fimbriated, and very pretty; and Miss Joliffe, pale pink, dwarf habit, and very free. The best white flowers are La Florifera, snow-white, good habit, fine form, and very free; L'Hermine, pure white, also very good and free; La Belle, white, large, full, wonderfully free; and The Queen, pure white, large and very fine. There is a section of orange ground flowers, in which in spite of the improvements which have been made, distinctness and novelty in the colours are not less marked. Of these may be instanced Florence, orange and red; Fire King, deep yellow ground, heavily edged with scarlet; Incomparable, edged with bright deep red; and Orion, also edged with scarlet. In these there are differences in the ground colour, as also in the brightness and density of the edge or lacing. Lastly we get a few yellow selfs, a charming class: three are deserving of particular mention:—Andalusia, primrose-yellow, with very prettily fringed petals; Hamlet, pale buff-yellow, which sometimes comes flaked with delicate rose; and Mrs. George Hawtrey, a large and very fine bright yellow self, and a decided acquisition. That fine crimson bizarre perpetual Carnation, Mrs. MacLaren, must have a position to itself. What a grower it is! Young bushy plants are in strong form at Slough, and Mr. Turner not unreasonably expects a large demand for it.

As a matter of course heat is not necessary at this season of the year, while the air is, on the whole, soft and balmy, and there are frequent gleams of warm, invigorating sunshine. When the weather becomes dull, cold, and damp, then a little fire-heat is necessary to assist the buds in opening, or they will decay. At those times the plants should be kept moderately moist at the roots, and it being the season when the plants are active in developing their flowers, they must on no account be allowed to suffer through too much moisture at the roots. Cleanliness is of the first importance; neglected plants soon become covered with vermin—but plants that receive proper attention escape this objectionable visitation. *R. D.*



Fig. 97.—Pinus halepensis. (see p. 552.)

IVIES.

Different as is the form of the foliage of the varieties, and wide apart as are the extremes, it is pretty certain that (excluding, perhaps, the Colchic, or Roegnerian form) all are varieties from one species, but linked and intertwined so that any separation that may be attempted, however specious, is merely arbitrary, and sooner or later will be found untrustworthy—that is, if we are seeking the absolute and invariable. We may as well give up the attempt among plants, but for all that we need not discard those characteristics which are constant for long periods under like circumstances. Now that the Ivies are in bloom a good opportunity is afforded of examining their inflorescence. From, we admit, scanty experience, we are inclined to place much more importance on the characters afforded by the inflorescence than on those yielded by the leaves.

We have before us flowering sprays of "Irish" Ivy with racemose umbels — *i.e.*, the umbels are loosely placed on spreading stalks diverging from the main stem, the buds are rounded, or top-shaped, and loosely packed. Then comes another free-growing form, which we are not able to identify by Mr. Hibberd's list—a "tree Ivy," with large green leaves tapering gradually into a red leaf-stalk. This has an inflorescence like that just mentioned in all essentials, but it is smaller, and here and there among the stalked umbels are stalks bearing a solitary flower instead of an umbel. The buds of this variety are smaller and more egg-shaped—ovoid-conic we should say if we were going to describe it botanically. A

third form is afforded by one of the variegated varieties. The leaves are small, irregular, little lobed generally, narrowing off at the base, green flushed with white, and with the tips and edges of the colour of flowers of sulphur. This variegation of the margin is a sign of arrest of growth in that situation; the consequence is that as the disc of the leaf goes on growing the stationary margin acts as a curb, and so brings about a hollow spoon-shaped leaf. We imagine this to be Mr. Hibberd's "Sulfurea." Whether or no the inflorescence is quite distinct from that of the two others. Here there is simply one terminal globose umbel, the pedicels are so short and so numerous that one can scarce stick a pin in between them; so crowded are they that the lower stalks are pushed down by the upper ones, and the result is that the lower part of the globe of flowers is marked by a deep "basin," such as we see in many Apples.

How fond the flies and the wasps are of the nectar of these flowers! It is secreted from the thick green cushion which encircles the top of the ovary, and any one looking at the flowers at all attentively will have no difficulty in ascertaining the reason of the infinite variety observable in Ivies. It will be seen, in fact, that while in any given flower the anthers are ripe and shedding their pollen, the stigma of that same flower is as yet undeveloped, and not in a nubile condition, and so bees and flies may knock out the pollen in vain so far as that flower is concerned; but when they hie off, pollen-besmeared, to another flower in which the conditions are different, and the stigma is in a receptive state, then the seed can be set, and the seedling plants from that seed will in all probability bear evidence of its mixed origin.

NOTES ON THE CULTIVATED ASTERS.—II.

(*Continued from p. 524.*)

Subgenus I. EUASTER.—Bracts of the involucre dry at the base, furnished with large spreading leafy points. Achenes flattened on two faces. Pappus moderately firm in texture. Stems tall, copiously leafy. Heads numerous, panicled. The largest subgenus, confined entirely to North America.

The cultivated species of this subgenus may be arranged in groups as follows:—

Group 1. SERICEI.—Leaves coated on both sides with short persistent tomentum:—

1. A. sericeus
2. A. concolor

Group 2. GLANDULOSI.—Upper part of the stem and involucre clothed with short viscid pubescence:—

3. A. Novæ-Angliæ
4. A. grandiflorus
5. A. oblongifolius

Group 3. VULGARES.—Pubescence neither tomentose nor viscid. Lower leaves tapering gradually into their petiole.

Expanded heads large, 1 inch or more in diameter:—

6. A. patens
7. A. turbinellus
8. A. lævis
9. A. versicolor
10. A. Novi-Belgii
11. A. puniceus
12. A. tardiflorus

Expanded heads middle-sized, about ¾ inch in diameter:—

13. A. paniculatus
14. A. salicifolius
15. A. longifolius (æstivus)
16. A. prenanthoides
17. A. patulus

Expanded heads of flowers small, not more than about ½ inch in diameter.

Branches of the panicle ascending:—

18. A. polyphyllus
19. A. Tradescanti
20. A. ericoides
21. A. dumosus
22. A. multiflorus
23. A. amethystinus

Branches of the panicle spreading:—

24. A. vimineus
25. A. diffusus

Group 4. HETEROPHYLLI.—Pubescence neither tomentose nor viscid. Lower leaves cordate at the base.

Leaves nearly or quite entire:—

26. A. undulatus
27. A. Shortii
28. A. azureus

Leaves distinctly serrated:—

29. A. cordifolius
30. A. Drummordii
31. A. sagittifolius.

In the descriptions which follow I have merely attempted to characterise the typical form of each species as understood by Dr. Gray, neglecting puzzling intermediate types, many of them perhaps of hybrid origin and modified garden forms. In synonymy and for the account of the geographical distribution of the species I have simply copied Dr. Gray.

Group 1. SERICEI, characterised above.

1. *A. sericeus*, Vent. Hort. Cels., t. 33. A. argenteus, Michx.—Stems slender, stiff, erect, 1—2 feet long, with long ascending branches ending each in a few corymbose heads. Leaves oblong or lanceolate, sessile, acute, entire, rounded at the base, firm in texture, coated on both sides with thin persistent white silky tomentum, the lower ones 2—3 inches long. Heads large, 1¼—1½ inch diameter, forming an ample deltoid panicle. Involucre campanulate, ¾ inch long, well imbricated, the bracts silky at the base, all with large lanceolate green leafy tips. Ligules 20—25, bright violet, ½ inch long. Achene glabrous; pappus pale red, moderately firm, ⅜ inch long.

Prairies and dry banks, Minnesota and Illinois to Tennessee and Texas. A very distinct species. A. montanus, of Nuttall, is a variety with less silvery narrower leaves.

2. *A. concolor*, Linn.—Stems slender, stiff, erect, 1—2 feet long. Leaves oblong or lanceolate, small, sessile, entire, not so firm in texture as in the last, clothed with thin whitish pubescence on both sides. Heads middle-sized, under 1 inch in diameter, arranged either in a long raceme or a panicle, with short erecto-patent branches. Involucre campanulate, ¼ inch long, well imbricated, all the bracts with distinct lanceolate green leafy tips. Ligules 10—15, lilac, ¼ inch long. Achene densely silky; pappus whitish, moderately firm, ⅛ inch long.

Rhode Island to Florida and Louisiana; mostly in Pine barrens near the coast. A very distinct species.

Group 2. GLANDULOSI.—Upper part of the stem and involucre clothed with viscid pubescence.

3. *A. Novæ-Angliæ*, Linn., Bot. Reg., t, 183. A. amplexicaulis, Lam. A. spurius, Willd.—Stems stiff, stout, erect, sometimes 6—8 feet long, roughly hairy low down and densely clothed towards the top and on the involucres with viscid pubescence. Leaves numerous, ascending lanceolate, entire, clasping the stem by their enlarged auricled base, moderately firm in texture, more or less hispid on both surfaces. Heads crowded at the end of the ascending branches, forming a large deltoid panicle, each 1¼—1½ inch diameter when expanded. Involucre broadly campanulate, ⅜ inch long; bracts lanceolate, all nearly equal in length, the outer with large leafy tips. Ligules, fifty or more, ½ in. long, bright lilac or bright red. Achene silky; pappus pale red, ⅛ inch long, moderately firm in texture.

Canada and Saskatchewan to Colorado and South America. A distinct and very handsome species, common in English gardens, flowering in October. The variety with red ligules is A. roseus, Desf.

4. *A. grandiflorus*, Linn.; Miller, Ic., t. 282; Bot. Reg., t. 273. A. asperrimus, Nuttall.—Stem stiffly erect, 2 feet long, with numerous long ascending branches ending each in a few heads, hispid low down. Leaves small, reflexed, sessile, oblanceolate, obtuse, entire, hispid, those of the upper part of the stem not more than ½—1 inch long. Heads very large, about 2 inches in diameter when expanded. Involucre broadly campanulate, ⅜—½ inch long, but little imbricated, the outer bracts with very large green lanceolate squarrose leafy tips. Ligules 30—40, bright lilac, ⅝—¾ inch long. Achene hairy; pappus dirty white, ⅜ inch long.

Virginia to Georgia, in dry soil. It is the largest in its separate heads of all the true Asters. It has long been cultivated in European gardens, but we do not possess it at Kew at the present time.

5. *A. oblongifolius*, Nuttall. A. multiceps, Lindl.—Stems stiffly erect, 2—3 feet long, branched from low down, slender, hispid throughout, the pubescence of the top viscid. Leaves numerous, oblanceolate, entire, 1—2 inches long, the lower obtuse, the upper acute, hispid on the surface and margin. Heads 1—1¼ inch diameter, forming an ample deltoid panicle, with corymbose branches. Involucre broadly campanulate, ⅜ inch long, all the bracts with very squarrose large leafy hispid tips. Ligules 25—30, bright violet, under ½ inch long. Achene pubescent; pappus dirty white, moderately firm in texture, ⅛ inch long.

Pennsylvania and Virginia to Wisconsin, Texas, and Kansas. Not common in cultivation. Easily to be recognised from the small varieties of Novæ-Angliæ by its different involucre and non-clasping leaves.

J. G. Baker.

(*To be continued.*)

GARDENING IN RUSSIA.

IN such a vast country as this, where gardening has greatly developed during the last twenty years or more, it might naturally be supposed that gardening books and periodicals had attained a corresponding popularity. It is true that a limited number of professional writers have been at work with more or less success, and a certain number of books have been published, chiefly in St. Petersburg and Moscow; but as yet no weekly or monthly paper has appeared that comes up to a respectable standard, or finds favour among an extensive number of readers. In Moscow, where gardening is greatly encouraged, a monthly paper has been started twice, and after a time gone down. Another has lately appeared under the title of *Russian Gardening* (*Roosky Sadavodstvo*). As yet I am unable to say much about it, as I have only seen the prospectus; but, judging from that, I am inclined to think that the paper has some chance of succeeding, and the cost is only about four roubles a year—less than ten shillings.

As for the *Sadavoy Vestnik*, published in St. Petersburg, there is but little to be said; for, though aided by the Government, it does not seem to make much way. I remember one fact to the point. After Dr. Regel's first International Exhibition I looked in vain for a notice of it in the *Sadavoy Vestnik*. All the other gardening papers of Europe had reports of that grand display at the time, but only at the end of the year the *Vestnik* dismissed it with a few lines. Here I should like to make use of a Latin proverb, but I am not fond of appearing to be so learned.

I am not quite sure that this highly-favoured gardening paper is still going on, not having met with a gardener in this part of the country that had ever heard of it. [Yes]. This fact gives rise to another view that must in all fairness be considered. I think it may be stated as a fact that cannot be disputed, that the great majority of gardeners in Russia are not Russians, but foreigners, and if they read a gardening book or paper it is not likely to be in the Russian language, which they but rarely take the trouble to study, even for the purpose of ordinary speaking. Many Germans, Poles, Hungarians, Bohemians, and others, after ten, fifteen, or twenty years in this country, know just as much of the language as enables them to express themselves in common speech, and that is all they aim at; but what they read is in their own language, not in Russian; and, indeed, the only paper I have seen here among gardeners is the Erfurt *Garten-Zeitung*, a paper which seems to be under the direction of an active and intelligent editor. If, therefore, a gardening paper succeeds in the Russian language its readers must chiefly be among amateurs; it is not likely to find much support among professional men. No doubt every year adds to the number of Russian gardeners, but a good many years must elapse before they can be as numerous as in other countries, or have anything like that position which gardeners have elsewhere. Wherever a great society exists, or a vast number of people follow the same profession, a weekly or monthly organ that gives expression to their views, wants, and wishes, is of the very first importance. But nothing of the kind has yet been established in this country.

The Russian gentry, too, have their prejudices like other people, and one of their prejudices seems to be that nobody can be so good a gardener as a German; at least they do not believe that their own countrymen have much taste in that way. It is true that I have known some of the peasants in the Steppes that could bud and graft just as well as any real gardener; and as for the cultivation of vegetables and ordinary fruit, it is the peasants chiefly that supply the markets here. No professional gardener produces finer crops; and yet, though the skill of the Russians is fully demonstrated, no Russian noble would hesitate to prefer a German; where prejudice has taken up its position incontrovertible facts and stubborn arguments go for but little. Some English writer has stated, in reference to the difference of birth, that one man is born with a silver spoon in his mouth, and another with a wooden ladle. So the Russian nobles perhaps think that every German gardener is born a gardener, and that he comes into the world, if not quite ready for a situation, at least with a spade or rake in his hand, and so they are almost always ready

to prefer him to a Russian. And this is not to be wondered at, for the Roosky Tchelovek, as a real Russian is called, does not make a very good gardener where trust and strict looking after are required.

One striking feature of life in this country is that there are an immense number of holidays, or Prazdniks, as they are called, and they are generally observed with great punctuality, by the common people in particular. After being at church in the morning, they have only to spend the rest of the day in idleness, or something worse. As they cannot, for the most part, sit at home and read, and must put their hands to no kind of work, they naturally enough find their way to the drinking-house. On these occasions all such things as fires, lights, frames, and watering-cans are not likely to receive much attention. I have seen instances of large and costly plants having been completely spoiled while the Russian gardener—or whatever he might be called—was enjoying himself with his friends in the *kabak* or *trakteer*. Likely enough he was one of those who come into the world, not with a spade or rake in his hands, but rather with a bottle, and who must find some means of testing its capacity.

In my next I shall have something to say of gardening books, especially those of Dr. Regel, but as my notice will be somewhat lengthy, I hope your readers will try and muster enough of patience to hear me out, and they will see that light can come from the North. *P. F. K.*

COMPOSITION OF THE ASH OF WHEAT-GRAIN AND WHEAT-STRAW.

A MOST exhaustive treatise upon the composition of the ash of Wheat-grain and Wheat-straw grown at Rothamsted in different seasons, and by different manures, has been published in the *Journal of the Chemical Society* (vol. xlv., August, 1884) by Sir J. B. Lawes, Bart., and Professor J. H. Gilbert, from which we abstract the following interesting facts.

The investigation comprises the analyses of 92 Wheat-grain and 92 Wheat-straw ashes, and, including 69 duplicates, the number of complete analyses involved is 253. Every ash is stated to be the produce of known history of growth as to soil, season, and manuring; all the specimens having been grown in the experimental field at Rothamsted, which has now (1884) yielded Wheat for forty-one years in succession.

The analyses show a much greater range of variation in the percentages of potash and phosphoric acid in the ashes, both of grain and straw, due more to variation of season than to variation of manure. This range, which may be considered as directly due to season, was always much the greater in the straw ashes, which our authors say is explained by the fact that favourable or unfavourable seed-forming and ripening may supervene on conditions of high or of low luxuriance, that is of great or of limited activity of accumulation of constituents by the plant; hence the withdrawal of constituents for seed-formation will leave very various amounts of migratory matters in the straw.

The following table shows the highest, lowest, and mean percentages of potash and phosphoric acid "in the pure ash" in sixteen consecutive seasons:—

Plot.	Manures.	Per cent. in grain ash.			Per cent. in straw ash.		
		Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.
	Potash.						
2	Farmyard manure ..	35.5	27.2	31.6	25.6	12.9	18.3
3	Unmanured	35.5	29.7	33.0	20.7	10.5	14.6
10a	Ammonium salts alone	35.9	28.1	33.4	23.4	10.5	16.5
	Phosphoric Acid.						
2	Farmyard manure ..	54.7	47.1	51.7	6.21	2.98	3.79
3	Unmanured	52.6	45.6	49.7	5.96	2.98	3.79
10a	Ammonium salts alone	52.9	43.4	47.3	4.34	1.73	3.09

These results show that with both potash and phosphoric acid there is very great difference in the percentages in the ash of both grain and straw, according to season, and very much less difference in the mean percentage by the direct action of manure. With few exceptions a similar result is observed with other constituents.

Taking high weight per bushel of the grain as a fairly good indication of fine quality, and *vice versâ*, there was with each condition of manuring a marked tendency to low proportions of nitrogen, of total mineral constituents (ash), and of individual ash constituents in the dry substance of the grain of the seasons of higher quality. In other words, the superior quality of the grain is usually found to be associated with the greater accumulation of the non-nitrogenous matters (carbohydrates) in proportion to the nitrogen and to the mineral constituents which have been stored up.

The percentage of silica in the dry substance of the straw is shown to be lower in the seasons of most perfect maturation. In fact, stiffness of straw is said to depend on favourable development of the woody substances by the increase of which the proportion of the accumulated silica to the organic substance is reduced. Upon the whole, the results point to great uniformity in the mineral composition of the grain under the different conditions of manuring, provided only that it is perfectly and normally ripened. High or low percentage of nitrogen is also found to be more dependent on the degree of maturation than on a full or limited supply of this substance by the soil.

With every description of manuring there is shown to be a higher percentage of potash, and lower of phosphoric acid, and somewhat lower of magnesia also in the "good" Wheat seasons, compared with the "bad," indicating a larger proportion of flour to bran on milling. The straw ashes likewise show a higher percentage of Potash in the better seasons.

The average annual amounts of total mineral constituents yielded during sixteen consecutive seasons in the crops per acre (grain and straw) under three very characteristically different conditions as to manuring is shown by the following table:—

	In Grain.	In Straw.	Total.
	Lb.	Lb.	Lb.
By farmyard manure ..	36.3	201.1	237.4
Without manure	16.6	89.5	106.1
With ammonium salts alone	23.0	119.2	142.2

Thus considerably more mineral matter is taken up under the influences of the ammonium-salts than without manure, but more than twice as much is taken up under the influence of farmyard manure as without manure. With farmyard manure by far the greatest increase was in potash, of which there was found to be more than two and a half times as much as without manure; and there is about twice as much magnesia, and more than twice as much lime, phosphoric acid, sulphuric acid, soda, and silica, and nearly four times as much chlorine.

With an equal supply of nitrogen to the crop, very variable amounts of this element are obtained in the total produce per acre of the different plots, according to the associated mineral supply.

Of individual ash-constituents there was more in the total produce per acre with some of the artificial manures than with farmyard dung.

Comparing the plots with equal amounts of ammonium salts, but different qualities of potash, the amounts of potash yielded in the total produce are shown to be in the order of the manurial supply. *J. J. H.*

NEW ZEALAND SWEET POTATOS DISEASED.

A CORRESPONDENT, "W. W.," has sent tubers of Ipomœa chrysorhiza. He writes that the tubers "seem to be affected with Potato disease." There is doubtlessly some relationship between Solanaceæ and Convolvulaceæ, but no trace of the Potato fungus (Peronospora infestans) can be seen. On cutting open the tubers numerous brown places are exhibited, exactly as in the case of the Potato when diseased. On putting fragments of the disease-patches under the microscope a profuse growth of mycelium is seen, which pierces the tissues much in the style of that of Peronospora, and on this mycelium a few oospores, or resting-spores, were detected, also bearing a considerable resemblance to the resting-spores of Peronospora. I am, however, convinced that the fungus is Pythium De Baryanum.

The same fungus came from an Irish correspondent of this paper at the beginning of the year, and the pes produced exactly the same appearances in the tubers of Dahlias. Although a plant in a wretched condition of disease was received from Ireland it entirely recovered itself when planted in the garden. I made a large plant, 5 feet high, full of healthy foliage, and with large well-formed flowers. *W. G. S.*

ST. AUDRIES.

THE coast line of Bridgewater Bay is neither "bold nor imposing," and at low-water its beach of blueish mud is, to use a tourist's expression, disgusting. Turning your back on the sea the prospect is over lightsome green meadows and woody to a peakless range of hills. The exact position of St. Audries house is between West and East Quantoxhead. Thus it is not far from St. Decumans, the parish named from the Welsh saint, who was nourished by an attendant cow that ever followed him. An outlying spur of the Quantock comes forward to within three quarters of a mile of the bay, and from its steep and fir-crowned shoulder there is a very gentle slope in the form of a woodland glade to the sea. About midway down is the site of the mansion, a large and modern building. Some sane wit or other derived Quantox from *Quantum at hoc*. From the front of the house the view up the rich pastoral country that intervenes between the Brendon and Quantox Hills has that limitless appearance which broad valleys often present. The junction with the horizon is so prolonged that the eye hardly notices it as a part of the landscape. An etymologist will recognise in St. Audries St. Etheldreda, but the village maids are not tawdry, nor are they of the pattern of Touchstone's love, but they add honesty to beauty and so sauce sugar with honey. The whole district is so peaceful and fertile that 'tis no wonder it was favoured by Saint and Abbot of eld. Near quaint, old, Saxon Watchett is the Cistercian abbey of Cleeve, which was known once upon a time, at least the estate was, as the Vallis florida. Thus at both ends of the region between Exmoor and and the Quantocks are fair sylvan demesnes.

St. Audries is the property of Sir A. A. Hood. In the Norman conqueror's Survey it was, like Dunstan Castle, the property of the de Mohuns, and in demesne were "three carucates and seven servants and ten villanes and four cottagers with six ploughs;" the whole being worth £30. One unfortunate village near in the same Survey only possessed half a plough. Before coming to its present owner by marraige, it was or had been the property of the Luttrels. A short distance beyond East Quantoxhead is Fairfield Lodge, another residence of the owner of St. Audries. As a large kitchen garden exists there, the space which is allotted for the purpose on the second estate is small and almost entirely used as a fruit garden. The trees are young and the selection of sorts is a large one. Most of the Apples are on the Paradise stock, and are now sturdy, bushy trees at their best. The crop of outdoor fruit was good, and there is no scarcity of any kind. The situation if it had not been well protected on all sides would be bleak, for just outside the embowering belt of trees the wind whistles shrilly and comes up chilly from out of the sea, which is only 900 yards off. Perhaps its cold situation may have had a great deal to do with the good crop of hardy fruit thereir. For the fruit trees would have flowered somewhat later and escaped more of those destructive frosts which wrought the mischief in the blooming season. As nearly all the sorts are bearing freely, a list would serve very little good, but the behaviour of two well-known Pears deserves notice, viz., Huyshe's Victoria and Beurré d'Amanlis. The popular Devonshire variety, although the tree is a large one, has never borne more than two or three Pears, and the fruits of Beurré d'Amanlis invariably crack, and are worthless for dessert. The cultivation is in no way to be blamed, and it deserves to be recorded as an example of the capriciousness of two justly esteemed standard varieties. The trees of Early Margaret Apple, after giving a copious yield, are flowering again, and the examples I saw of Warner's King are on a par with the finest that have been shown. There is also here a fine Apricot wall, the soil in the border of which consists of a strong loam brought from the park. The trees are getting

on in years, and show no evidences of canker, but are in a clean healthy state. If more care were taken at first with the borders, and the roots prevented from getting down into the subsoil, we should have fewer cries about the decadence of Apricot trees. The most noticeable of the glasshouses is an unheated orchard-house, 150 feet long. The back wall is planted with Peaches and Nectarines, in the front is a low quadrant-shaped trellis, at the highest point about 5 feet from the ground, planted with Cherries and Peaches. This arrangement is infinitely to be preferred to growing the trees as standards, as a much larger quantity of fruit can be obtained. The system of glazing used is known as Rendle's, which answers the purpose.

The flower garden is on the seaward side of the house, and is very tastefully planted. By the side of it is a well ordered ornamental conservatory; in it are some fine Camellias and Seaforthias, and perhaps the largest Rhododendron Veitchii in the country. On the west side of the house is the main entrance, before which is a large plot of gravel. Here and on the adjoining side there are no flower-beds, but well-kept lawns and terraces. The park, which is visible all round, is very picturesque, and extends in one unbroken sheet of green to a thick wood, in which the main drive to Williton loses itself; and it is in this wood that the finest Conifers are to be seen. At the outskirts the bed of an old morass-like pond has been filled up and planted with Deodars and Irish Yews. These have obtained a great height, and are still growing as freely as can be. The road, when it enters the wood, assumes all the characteristics of a woodland drive, and is greatly improved by the planting that has been done along its borders. The Conifers made most use of are Araucaria imbricata, Cupressus macrocarpa, and Picea Morinda. The foliage of all three looks the picture of health, and any prettier combination when together, or any trees more fitted to give change and effect, it would be hard to find. When in perfect health the Himalayan Spruce, with its pendulous fronds, is exquisitely pretty. There are also fine specimens of Juniperus recurva and Abies Pinsapo. The soil in this part of the estate is a deep strong clay on the lias, but in other parts of the park there is red marl and peat.

Another approach passes the church, which is between the house and the Quantocks, and curves round to the western front. From this walk an idea can be obtained of the difficulty that must have been encountered in cutting the terraces and levelling the lawns which girt the house on the south. These terraces are surmounted by shrubberies, which merge away into a strip of wood that goes past the east side of the house, and also affords the protection before spoken of to the kitchen garden. The climate cannot be called favourable, yet a Camellia is shown which has stood out twenty-eight years, and never fails in due season to flower. This plant is not specially protected, and stands on a sloping bank of turf which edges a path on the southern side of the house. Adjoining the house on the same side is a small conservatory of flowering plants. A number of pot Hydrangeas are carrying large trusses of blue flowers. The principle adopted to make the flowers blue is as follows:—1 oz. of crude ammonia is added to a gallon of water, then a pint of the mixture is added to half a gallon of water. If the plants are watered with this decoction it is strong enough to give a decided blue tinge to the flowers. Alum may also with advantage be added.

St. Audries is an instance of an old estate which had been allowed to fall into confusion, but which has now risen again from its ashes. For twenty-eight years, the period over which the alterations have extended, it has been superintended by Mr. MacCullough. This worthy and able gardener is as much at home outside the garden walls as inside them. For a long time he occupied the office of forester and woodreeve. This old style of good all-round gardener is rapidly dying out, and it is very much to be questioned whether the forced young men from the nurseries who are now so much in vogue will be able to level and make a road and show a labourer how to dig. But it all comes right in the end somehow. *C. A. M. C.*

MANCHESTER HORTICULTURAL IMPROVEMENT SOCIETY.—The opening meeting will be held in the committee-room of the Old Town Hall, King Street, on Thursday evening, November 6, when Professor Ward, of the Victoria University, will read a paper—subject, "Roots." W. Swan, Hon. Sec., Oakley, Fallowfield.

PRUNING THE GOOSEBERRY.

IN answer to "A. B.," concerning the pruning of Gooseberries, we would advise him to commence operations as soon as possible, unless the birds are troublesome, as the fine open weather we are having at present may soon be succeeded by a cold stormy season, when pruning operations are very uncomfortable. The bushes should, when pruned, present a semicircular appearance, and the branches should be kept well up from the ground, and rather thinner in the centre than the outside, as this allows of more light penetrating into the heart of the bush. All gross growths springing from the neck of the bush should be twisted off, and any weak puny growths also removed. It is the hard well-ripened shoots that produce fruit, and this must be borne in mind; it is also better to have the bush too thin than too thick.



FIG. 98.—A SHOOT OF THE GOOSEBERRY, WHEN PRUNED.

The cut (fig. 98) illustrates how this year's growth should be cut back.

FORESTRY.

NOVEMBER.—PLANTING.—During the past month the weather here has been on the whole most propitious for planting operations, as well as highly favourable for the operations of the forester generally, and the ripening of his young nursery stock. Deciduous trees have seldom been seen in a better ripened state at this season of the year, so that they are in excellent condition for removal, work which should now be pressed on as quickly as possible before the short days of mid-winter or the long, cold ones of spring come upon us. Every forester ought to lay it down as a rule to have the greater part of his planting done by the end of the present month, as trees shifted now with an ordinary amount of care, and planted in suitable soil, are almost sure to succeed, whereas if left over till the cold piercing winds of March the chance are certainly anything but in their favour.

The planting of wet ground, or such as has been but recently drained, and which is of a stiff, tenacious nature, had, however, better be left over till spring, as a constant saturation of the roots of young transplants cannot but prove inimical to their growth and the general welfare of the plants. In planting trees of every description, but more especially coniferous ones, every precaution should be taken to prevent the roots becoming dry, for to this cause may be attributed half the failures that usually occur in newly-formed plantations. A covering of old mats, damp hay, or any material that will help to keep out the air from the roots, is easily applied, and should always be used in transferring the plants from the nursery to the planting-ground. Never remove trees during frosty weather, for if not killed outright, their future progress is greatly arrested thereby. The nature of the ground to be planted will be a good guide to the forester as to the selection of plants. Where the ground is rough and covered with rank surface herbage, strong, clean, well-rooted plants should be chosen.

In planting spread out the roots to their full extent, cramping or bending being highly injurious, and never place the plant deeper in the soil than it was when in the nursery border. In replanting the sites of former plantations all roots and stumps should be grubbed out and burned, and it should also be borne in mind that while Larch improves the soil, Ash, Elm, and Sycamore, are of all trees the most exhausting. The Oak is, perhaps, the least injurious of any hardwood.

NURSERY WORK.—The early part of November is a busy season in the nursery, for besides the usual routine of cleaning, there will be the propagating by layers, insertion of cuttings, preparation of seed-beds, and harvesting of such seeds as become ripe about this time. We have seldom seen tree-seeds more abundant than this season, which may also be said of nuts, acorns, berries, &c. Where not immediately sown tree seeds should be properly dried previous to storing, if not they are apt to heat and thus the germinative properties will be destroyed. Never store seeds in bags or close boxes, but spread them out evenly in a dry, airy loft, until required for use. Ash keys, Holly, Yew, Rowan, and other berries, may be put in the rot heap, and covered over with less than a foot of sand or dry earth and receive an occasional turning. In lifting young nursery stock for the planter avoid tearing or barking the roots, and let these be kept out of the ground but as short a time as is really necessary. This is a good time to secure a collection of leaves for nursery purposes, which, as they are collected over the policy grounds, may be placed in some out-of-the-way corner until time permits of their being carted to the necessary rot-heap. Dig and thoroughly clean the nursery borders as they become vacant, a good dressing of manure or prepared compost being applied to such as are found in want.

THINNING AND PRUNING.—One of the principal occupations of the month will be the felling of timber and the cutting of underwood. Single trees on the farms or lawns may also be removed with safety and with little damage to the surroundings. In these cases stubbing can be resorted to, which, however, cannot be prosecuted without a certain amount of injury in close plantations. When thinning plantations—more especially those in exposed situations—too severe thinning or pruning of those trees along the outskirts should be avoided. Timber for estate and other purposes should now be sawn into boarding or otherwise as required, after which it may be set up to dry, so as to become properly seasoned before being required for use. The too common practice of laying newly sawn wood plank upon plank should be guarded against, as it is productive of very unsatisfactory results. When cut and manufactured during the latter end of autumn and winter, timber is more free from the attacks of insects and dry-rot than when felled at any other time. When firewood or faggots are in demand, or required for home consumption, all suitable branches should, during the course of thinning, be collected and reserved for that purpose. The firewood may be put up in lots of about a load in each, and in any place convenient for cartage such as alongside the woodland drives, or contiguous to a road passing through or near to the plantation. Branches for faggot making should be collected in heaps, here and there throughout the

woods, where they can be manfactured as required; but in plantations where game abounds it is always advisable to have the branches conveyed to the edge of the wood, so that the interior may be disturbed as little as possible. As the faggots are made they should be carted home, and either stacked or stored away in a building set apart for the purpose, from which they can be conveyed to the mansion as necessity requires. Broken, twisted, or decayed branches should be neatly pruned off, more especially from such trees as occupy prominent positions on the lawn, pleasure-ground, or alongside the park drives and walks. Where amputation takes place a coating of tar will not only prevent damage from moisture, but give to the tree a more pleasing appearance than were the wounds left in their natural colour.

Fencing.—Before hard frosty weather sets in, tree-guards and rabbit-proof fences should get a thorough overhauling, and have all damages repaired. Newly formed plantations, where the fences are not rabbit-proof, will require an occasional look to, as the destruction worked by hares and rabbits during a few nights is often quite surprising, and would, in most cases at least, more than compensate for the expenses connected with extra vigilance. Sheep should also be rigorously excluded from young woodlands, not only on account of the damage they commit, but also because, having once found an entrance, it is almost impossible to prevent their further incursions. Although at first rather expensive, a well-built stone and lime wall is the best of all protections around newly formed plantations. The ordinary iron, wire, or wooden fence may be made a most effectual barrier against the incursions of ground game by the use of strong galvanised wire netting. For tree-guards ordinary fencing poles 7 or 8 feet in height placed upright against the stems of such trees as require protection, and nailed firmly to wooden hoops at top and bottom are all that is required. We have tried wire netting laced around the tree stems to the height of 6 or 7 feet; but although it effectually prevents the horses barking the trees, it is somewhat dangerous, and hardly to be recommended. Materials for the erection of new fences should be carted during dry weather, when the ground is hard; but this is chiefly necessary on mountain or moorland districts.

Hedging.—Continue the trimming and clearing of hedges, and complete the same as soon as possible. Overgrown fences of all kinds may now be cut back with advantage, or, should it be deemed advisable, plashing or laying may be resorted to. Prepare ground for the reception of young Quicks by a thorough trenching and manuring, and when finished plant at once, as such will have a much better chance of succeeding than those left over till spring. Dig and clean the sides of all existing hedges, and remove Ivy at the same time, all of which work will be amply repaid by the increased value of the fences. Elder is the worst and most ruinous companion to the Thorn I know of, and should be at once removed if the usefulness of the fence is to be maintained. Fill up gaps with strong well rooted Quicks, and encourage their growth by the application of fresh soil or thoroughly decomposed farmyard manure. Beech, where the soil is dry and light, may be used with advantage, not alone, but as a mixture with the Quick or other hedge plants.

Roads, &c.—Roads, drives, and walks should now be put in thorough repair, giving them a good coating of well broken, sound metalling, gravel, or screenings as may be required, and finishing off with a heavy rolling, more especially if this can be done after a night's rain. Prepare materials for further repairs, and have them carted to the depôt or any other convenient place. Where gravel walks have fallen into holes or inequalities of surface they should be top-dressed with a coat of clean good gravel, and afterwards well rolled down. In the formation of new roads and walks special care should be taken that they are rendered perfectly dry at bottom, as on this depends much of their after condition. A foot or two of brickbats, small stones, or any such material placed in the bottom is absolutely necessary even in very dry situations, but where the ground is damp and wet it will also be necessary to have, in addition to the above, a drain running along the centre of the road. Iron gratings should also be placed at convenient distances along the sides, to admit of the escape of surface-water, these being connected with the drain underground.

Drainage.—Where falling leaves are likely to obstruct the flow of the water the mouths of closed drains and ditches should receive attention. Continue the deepening and scouring out of woodland ditches, and, where it may be found necessary, cut new drains to assist in drying the soil. In the formation of these give sufficient room in the bottom, so that a spade can readily be used in future cleanings. The drainage of woodlands is unfortunately too often lost sight of, and even when this is attended to at the formation of the plantations, the ditches are in many cases allowed to get filled up with weeds and rubbish afterwards, and are then worse than useless for the purpose intended. Where water is allowed to stagnate really healthy vegetation cannot exist.

General Work.—Now that the shooting season is approaching the drives and rides in plantations should be gone carefully over, and wherever rabbits are found burrowing beneath them the holes should be filled up to their furthest extremity, as these are highly dangerous to hunters and shooting ponies. Alterations and extensions in the pleasure ground may now be carried on, such as turf laying, shrubbery improvements, tree planting, &c., but it is well to choose dry weather for most of these operations. In collecting and carting leaves take advantage of calm weather. Keep a sharp look-out for beetles preying on the young shoots and leaves of specimen or other coniferous trees, and take all available means to stop their depredations, as the injury they inflict, more especially if on the leading shoots, is not easily overcome. Fork flower beds and shrubbery borders, lay turf, pare edgings, and pay attention to general neatness wherever this is required. *A. D. Webster, Penrhyn Castle, North Wales.*

FRUITING OF THE COMMON JASMINE.

The occurrence in this country of ripe fruit on the common Jasmine is sufficiently uncommon to warrant our giving an illustration. The drawing was taken from a profusion of specimens sent us last week. When fully ripe the berries are of black colour. Generally only one, but frequently two were developed in each flower.



Fig. 99.—Fruits of the common Jasmine.

Notices of Books.

The Chrysanthemum, &c. By F. W. Burbidge. *Garden* Office. 8vo, pp. 102.

This handsome winter flower increases in popularity year by year. That this is so the numerous exhibitions held in and near London is sufficient proof. The number of exhibitions increases yearly; new exhibitors are continually coming into the arena, and the quality of the productions, especially in the Japanese section, are such, that the most sanguine cultivator could scarcely have dreamed of a dozen years ago. Every lover of this handsome flower is doubtless pleased to see exhibitions flourish, for the sufficient reason that they afford the best opportunity to see the new flowers well grown, and as they are placed in juxtaposition to those sent out in previous years the would-be purchaser can tell at a glance whether it is desirable or not to add them to his collection. By far the largest number of persons who grow and love the Chrysanthemum never attempt to exhibit either their plants or their flowers; but even they are greatly benefited by visiting the exhibitions, as the sight of flowers better grown than their own cannot fail to stimulate to greater exertions in the future. The real beauty of the flower is best seen in the garden where it is grown, and those who love the flowers for their decorative properties alone would be loth to sacrifice them for one supreme effort, on a certain day specified in the schedules. In the early years of the Chrysanthemum, several treatises and pamphlets were published for the guidance of cultivators and exhibitors, those by Messrs. Broome, Dale, and Salter being the most recent; but as all of them are now somewhat out of date, it is a pleasure to hail a new treatise on this flower by Mr. Burbidge, of Trinity College Gardens, Dublin. The history, classification, nomenclature, culture, exhibiting, seedling raising, &c., are treated in a plain and pleasant manner. The author advises growers to save their own seeds "in a properly constructed house fully exposed to spring and early summer sunshine, and heated with a flue, the latter being preferable in this case to hot-water pipes. Home growers have been too lethargic in the matter of seed saving, and yet no other cultivators could beat them in this field, if a beginning be once made on proper and well defined lines." We are not told how the house should be constructed, or what ought to be its form, although information of that kind would have been very valuable. We tried to save seeds years ago in a well-heated house. It was half-span and facing south, but the result was a total failure; we never got a seed to form, let alone ripen. Of course the varieties tried were the best incurved kinds. If anybody has saved seeds and raised plants from them north of London it would be interesting to know the circumstances under which the results were obtained. Mr. John Salter, who raised and introduced so many fine varieties, did not save seeds at the Versailles Nursery, Hammersmith, but sent the plants to Algiers, and had the seeds saved from them there. It was in that way that the first English-raised Japanese kinds were introduced; indeed, Mr. Fortune stated at the time that Mr. Salter was not only successful in raising new kinds, but some were raised exactly similar to certain varieties that Mr. Fortune tried to introduce, but failed to get over alive. Mr. Burbidge also suggests the improvement of our own native Corn Marigold. It may be interesting to know that the improvement of the yellow Corn Marigold was taken up quite 150 years ago. In the second edition of Philip Miller's *Gardeners' Dictionary*, published in 1741, there are both double white and double yellow Corn Marigolds mentioned, also the quil-leaved Chrysanthemum, or Corn Marigold.

Classification and nomenclature are dealt with in a chapter by themselves. The cultural remarks are spread over a wide area, and the author has very wisely selected the best cultural information from those who have had long experience. The book closes with a general list of varieties, descriptive remarks being appended. In addition select lists are also added for those starting to cultivate them. Taking it altogether it is only fair to say that this book supplies a felt want, and it is one that the cultivator may safely choose as a guide through all the stages of the plant's development.

The Rosery.

New Roses.—The following descriptive notes of newly raised Roses are given in the raiser's own words:—

Mary Bennett.—A hybrid perpetual, without the slightest stain of Tea; of a dwarf, bushy, vigorous habit; the foliage very large, rich and handsome; the flowers large and of beautiful form, opening well; the petals very thick, round and smooth on the edges; and the colour a most brilliant rosy-cerise. It is thoroughly perpetual: a seedling from Baroness Rothschild. This flower has been awarded First-class Certificates at the Crystal Palace Great Rose Show, at the Royal Botanic, and at Manchester.

Mrs. George Dickson.—Hybrid perpetual; a very strong grower; an early, continuous, and late bloomer; has always been mildew-proof at Shepperton and Stapleford; flowers large, not too full, opening very freely; bright satiny-pink—a new colour. Awarded First-class Certificate at Royal Horticultural Society of London, 1883.

Grace Darling.—Tea; a very vigorous grower, flowering very freely from every shoot; blooms very large, very full, opening well indoors and out; colour quite new, base of petals creamy-white, deeply tinted and shaded with pinkish-peach; thoroughly distinct; very early when forced. First-class Certificate at Royal Horticultural Society of London, March 11, 1884.

The following Roses were offered for the first time in 1882 by the same raiser :—

Princess of Wales.—Tea ; rich rosy-yellow, centre deep golden-yellow ; a splendid Rose. First-class Certificate at Royal Horticultural Society of London, 1883.

Countess of Pembroke.—H.T. ; of vigorous growth ; flowers of the finest form, quite full and highly scented ; colour soft satin-rose, of a novel tint.

Distinction.—H.T. ; very vigorous ; flowers not very full, but of fine form ; colour shaded peach, of a peculiar tint, difficult to describe ; opens very freely.

Lady Mary Fitzwilliam.—H.T. ; of a robust, branching habit ; flowers exceedingly large and finely formed ; very free flowering, sweet-scented, bright flesh colour ; the finest light-coloured Rose yet produced. First-class Certificates at Royal Horticultural Society of Manchester, 1883 ; Royal Horticultural Society of London, 1882 ; Crystal Palace Great Rose Show, 1882.

Earl of Pembroke.—H.P. ; a vigorous grower, of the form and habit of Marquise de Castellane, but not quite so thorny ; colour very soft velvety-crimson, enlivened in the margin of the petals with bright red ; quite distinct. First-class Certificate at Royal Horticultural Society of London, 1882.

Heinrich Schultheis.—H.P. ; very vigorous ; flowers exceedingly large, of first-rate form and very full ; colour very delicate pinkish-rose, a great improvement in this shade, very sweet-scented ; thoroughly perpetual ; a grand show Rose. First-class Certificate at Royal Horticultural Society of London, 1883.

ROSES FOR SUBURBAN GARDENS.—The list of Roses that one sees published by the large firms in the country has need to be condensed somewhat largely for suburban gardens. There are a few well-known kinds, as Gloire de Dijon, Cheshunt Hybrid, Madame Berard, Devoniensis, and Madame Falcot (beautiful in the bud), from among the Tea-scented class, that will in almost every case give satisfaction. Maréchal Niel might be included ; but, although its flowers are gorgeous, yet in a suburban garden it can hardly be recommended by reason of its fickle character and aptitude to canker. Of the hybrid perpetual class La France is one of the very best, if not the best of all ; its lovely pink flowers are produced in constant succession the summer through ; Alfred Colomb is a good bright red ; A. K. Williams and Dr. Andry, both shades of red, have fine flowers ; Duke of Edinburgh, very hardy habit, and of most vivid colour, is one of the best of all the high-coloured varieties ; John Hopper, with rosy-crimson flowers ; Edouard Morren, a beautiful bright pink ; Baroness Rothschild, pale delicate rose ; Elie Morel, rosy-lilac ; François Michelon, deep rose ; Marie Baumann, light crimson-red ; and Boule de Neige, one of the best whites, are a good reliable dozen to start upon. Charles Lawson, a hybrid China, is good for walls ; so also are all of the Teas at the head of this list ; and the following also are excellent climbing varieties, viz., the Ayrshire, with the Banksian, the Boursault, and the evergreen Roses, to which may be added Aimée Vibert, from among the Noisettes ; Céline Forestier, belonging to the same class, is also a beautiful pale yellow rose, but should have a sheltered position. One or two of the best Moss Roses might be added, but as they flower but sparsely in the autumn they can hardly be recommended. *From Cassell's "Popular Gardening" for October.*

ROSE, THE EARL OF PEMBROKE.—For late autumn flowering this Rose is this year greatly superior to most of the hybrid perpetuals I have yet seen. Although we can cut only a few flowers of medium quality from other kinds, we have from a few plants of this variety abundance of superb blooms, quite fit to grace any exhibition stand at midsummer. It appears to hold its foliage in the autumn with great tenacity, the blooms are exceedingly full, and they assume a deeper, richer crimson than during the summer season. Associated with Souvenir de la Malmaison it is very effective at the present time, and to judge from the health and vigour of its foliage and the number of buds still showing, its beauty will be prolonged even beyond the blooming period of that good old favourite. *T. Challis.*

TEA ROSE, PRINCESS JULIE D'AREMBERG.—This new Rose, raised by Messrs. Soupert & Notting, is figured in the last number of the *Illustration Horticole*. It is a Tea Rose, large and full, and of a rich canary-yellow. It is a seedling from Madame Berard.

Orchid Notes and Gleanings.

ORCHIDS AT THE UPLANDS, SELBY HILL, BIRMINGHAM.—The compact little collection formed by Charles Winn, Esq., gives a very good example of the perfection to which these plants can be brought by those who really like them and study their habits, and the never-failing supply of bloom always to be found in the houses proves that his thoughtful consideration of the comforts of his plants meets with a good reward. All the year round good things are to be found in bloom at the Uplands in every one of the houses ; but those who have been fortunate enough to see the Masdevallia-house in the height of the flowering season need no other marks to remember the place by, for in that house is brought together every fine variety obtainable, and under the good culture the plants receive they seem to have been rendered still better, so much so indeed as in some cases to render them difficult to identify with plants of the same species seen under ordinary cultivation—large plants of all the blood-red forms of M. Harryana, such as M. H. sanguinea and M. H. Hrubyana, with flowers like small Anthurium Scherzerianum, immense specimens of M. Veitchiana, which seem all to have grown into "giganteas," and great tufts of that lovely clear yellow M. Davisii, with flowers of such size and substance that Messrs. Veitch would not have dared to have hinted at when placing the plant on offer for the first time. I remember Mr. Dominy showing me one of the collector's dried flowers of it, at the same time apologetically saying, "No doubt it will improve under cultivation." The result must far exceed his anticipation, for the flowers of Mr. Winn's plants and those of other good growers would cover three of his wild specimens at least. The Masdevallias at Selby Hill are as good in foliage as in flower, the leaves of all the species being fleshy, dark green, and unmarked by those black spots which so often disfigure them when not well grown. Mr. Winn attributes in a great measure the good condition of all his Orchids to the regular temperature always kept up in his well ventilated houses, which are so managed that in summer they are cooler and pleasanter than it is outdoors, and in winter as healthy and genial a temperature is maintained in them by careful ventilation as in summer, notwithstanding that the heat has to be supplied by artificial means. The Odontoglossums, which are grown as cold as possible, are as healthy as the Masdevallias, some good O. Alexandræ and O. Pescatorei being in bloom, and some fine plants of O. Uro-Skinneri and O. hastilabium are furnished with short stout spikes of flower, very different from the straggling ones usually seen on them. The Cattleya and East Indian houses are well filled with choice healthy specimens, in bloom being many Cypripediums, Dendrobium Dearei and other Dendrobes, Lælia elegans Schilleriana, L. e. Turneri, L. pumila, Cattleya Eldorado splendens, C. Gaskelliana, autumn-flowering Odontoglossum vexillarium, O. Roezlii, Vandas, Zygopetalums, &c., all appearing safe and thriving under the care of Mr. Alexander Dunn. *James O'Brien.*

PHALÆNOPSIS LOWII.—Although this species of Moth Orchid is neither so large nor so splendid in floral characters, nor yet so attractive in the character of its foliage as some of its widely popular brethren, yet it possesses a beauty of its own, as well as the charm that seems to belong to Orchids that are rare and are not easily grown. Introduced in 1862 by the firm whose name it bears, and owing its discovery to the Rev. C. P. Parish, who collected it in Moulmein, P. Lowii has always been a rare plant in English gardens. Possibly its deciduous character may often have led to its being thrown away as dead, for when without its leaves this species is not a very hopeful looking object, and to one who judged it by its congeners it would appear quite past recovery. The leaves fall soon after the flowers fade, and then the plant requires to be kept rather dry and cool for several weeks. This rest has a salutary effect on the plant, so that when again brought into a moist tropical temperature it soon begins to grow vigorously. A raft, such as is now becoming popular among Orchid growers, with a layer of sphagnum about the roots, appears to suit this Phalænopsis. At Kew it is treated thus, and there is now in one of the houses there a raft of healthy looking plants, which are bearing several spikes of bloom. One of these spikes is 15 inches in length, and bears six beautiful white and blush flowers, 1½ inch in width. The beak-shaped column, and curiously shaped purple lip of this species are somewhat remarkable characters in the genus Phalænopsis. *W.*

AËRIDES VIRENS.—Flowers 1½ inch long, sepals and petals ovate, white, tipped with violet, lip like a drinking-horn, with curved tip. It is a native of Java, requires the temperature of the East India house, and likes full exposure to light. The roots should be encased in sphagnum, and the pots or baskets thoroughly well drained. *Orchid Album*, t. 160.

VANDA SANDERIANA.—A fine illustration of this is given in the *Illustration Horticole*, t. 582, October, 1884.

ORNITHOCEPHALUS GRANDIFLORUS.—A Brazilian Orchid, with oblong leaves, and racemes of small greenish flowers, remarkable for the prolongation of the column, with a long, slender appendage, to which the caudicle of the pollen masses is attached. *Belgique Horticole*, 1884, t. 6.

CYPRIPEDIUM CALURUM.—A charming hybrid raised between C. longifolium and the pollen of C. Sedeni, and a free grower. The dorsal sepal is oblong ovate, pale green with red nerves, the two lower conjoined sepals are smaller. The lateral petals are broad at the base, lanceolate, undulate at the margin, and of a rich rosy-red colour. The large bag-shaped lip is rosy-red with a broad white reflexed spotted margin. The plant is figured in the last number of the *Florist and Pomologist.*

EPIDENDRUM BICORNUTUM.—A beautiful species, with elongated pseudobulbs, from the summit of which emerge two or three relatively short oblong acute evergreen leaves, and an erect stalked raceme of white flowers, each about 2 inches across. Sepals ovate acute. Petals roundish, shortly stalked, lip not exceeding the sepals, oblong, three-lobed to the middle, lateral lobes short curved, central lobe lanceolate, all spotted with fine purple spots, and the centre of the disc marked at the base by a thick two-lobed longitudinal callus of a yellow colour. It is a native of Trinidad, and is figured in Williams' *Orchid Album*, t. 157. It requires to be grown near the glass in a very hot damp atmosphere.

The Flower Garden.

IF full advantage has been taken of the favourable weather for transplanting during the last fortnight, the garden will now present a furnished and cheerful if not a gay appearance, for when well filled and skilfully arranged the beds at this season have a special and peculiar charm ; surrounded as they are by the varied tints of autumn they are by contrast the more suggestive of the approaching spring, although yet far distant. Care should be taken at this time to induce as much growth as possible in the newly introduced plants, so as to enable them to withstand the severity of winter. Although not usually required, watering has this season been necessary to keep the shrubs and plants from flagging, and owing to the exceptionally fine autumn many of them, especially the Violas, Polyanthuses, Daisies, and Aubrietias, are already showing abundance of bloom, and will, if the weather continue mild, help to make the garden bright and gay through the early winter months.

HERBACEOUS BORDERS.—This is perhaps the best season to rearrange the old, also to make new borders, because at this time the old stems and flowers afford to the inexperienced an excellent guide as regards habit and height in forming fresh plantations. In renovating old borders it is better to remove all the plants rather than to do so partially, the borders can then be thoroughly dressed with the most desirable soil and well decayed manure, which should be trenched in deeply. The borders should then be made moderately firm by treading, so as to prevent much after uneven settling of the soil. The plants should then be divided as required, and transplanted according to their heights and colours or as taste and judgment

may dictate, in order to produce any desired effect. When planting it will be desirable not to attempt too great variety in a limited space, otherwise an indefinite and ineffective result is produced which is always unsatisfactory. A few choice and judiciously selected plants will be found much less troublesome in arranging, and will eventually produce a far more pleasing effect; and, although the introduction of several plants of one variety may in some instances eventually have a somewhat patchy appearance, yet this may generally be obviated by good judgment and forethought in planting, and even if slightly open to this objection even this is preferable to indiscriminate mixed arrangements. When so contrived as to allow of each species or nearly so being planted in separate beds, or in associating only such kinds as will improve each other by being in juxtaposition, the effect will, no doubt, be greatly superior to any other method, simply because the suitable plants can be selected to occupy special positions; the different beds should then be sufficiently isolated either by a sufficient breadth of turf or shrubs. In this way a richer, bolder, more varied effect is produced, and at no time need the garden, if thus planted, be open to the objection so frequently made against herbaceous borders. Different species can then be conveniently interplanted with bulbs or other deciduous plants, so arranged as to perpetuate the display when the chief occupants become unsightly. Dahlias, Gladiolus, Tigridias, Begonias, and all similar plants, will now require taking up, drying, and storing for the winter. The former should be securely labelled and then turned with their roots uppermost for a few days to allow the moisture to drain from their hollow stems, they may then be stored in sand in a cool shed, where the frost cannot enter. Gladiolus, Begonias, and Tigridias are not, in some positions, yet ripe enough for removal; but where the foliage is already decayed they may be taken up at once, cleaned from dirt, and stored in paper bags in a cool shed.

Shrubberies.—Deciduous trees and shrubs may still be transplanted when the weather is favourable, but the sooner this work is finished the more probability will there be of success. Pruning and thinning may now be done, but whenever frosts occur these operations should be suspended, unless the position be a sheltered one. As the pruning is completed the surface of the ground should be lightly broken up with the fork, so as to admit air and water freely to the roots, and at the same time give a neat, well-dressed appearance to the shrubbery. *T. S. Challis.*

The Orchard House.

At this season of the year the labour of attending to the trees is not very great, whether they are kept inside or turned out-of-doors. We simplify things very much by turning the trees outside, and covering the roots well up with cocoa-nut fibre refuse; they require no more attention until they are taken indoors again. It seems scarcely necessary to advise the thorough cleansing of the house at this season; one would think it ought to be done as a matter of course, but some gardeners are careless in this respect, and will allow opportunities to slip, neglecting to do such necessary work as this when time can be spared. This is the best month in which to pot young trees. It saves a good deal of labour to purchase trees established in pots, but they cost more money. A tree that has been grown in a pot for one year will be furnished with plenty of blossom-buds which are sure to produce fruit if rightly managed. Two classes of trees can be dug up from the open ground and potted now. I prefer those that have made a single growth from the bud, as such trees will make a fruiting specimen after one year's growth in a pot. Cut down trees may also be used for potting purposes; these would be two years from the bud. They are of larger size, and although they would not be likely to fruit next year, they would make larger plants for the following season.

I have not seen cause to alter the list of varieties recommended for potting purposes in previous years. Grosse Mignonne we still place first on the list. I had to select two varieties to plant in our early house, and this variety, with Noblesse, was selected. Add to these Alexander, Hale's Early, Crimson Galande, Goshawk. We cannot discard Exquisite, as it is so large and handsome, with an excellent flavour. Its fault is that it does not set well, but this can be got over by setting the blossoms with pollen from Grosse Mignonne. Bellegarde ought not to be omitted.

In Nectarines were I to choose two varieties they would be Lord Napier and Pine-apple, although I would be sorry to omit Stanwick Elruge. Add to these Violette Hâtive, Elruge, Humboldt, and Victoria. In potting the trees the mangled roots should be trimmed off neatly, and the long bare ones should also be cut back. This will allow the very largest trees to be potted into 11-inch pots, and the smaller ones into 9-inch. Use good fibrous turfy loam, some crushed bones, and a little well-decayed stable-manure. Drain the pots well, and pack the potting material in firmly; after that plunge the pots in cocoa-nut fibre refuse. If they cannot be plunged in this or similar dry material they should be wintered under glass. *J. Douglas.*

The Kitchen Garden.

Heeling-over Broccoli Plants.—In view of early frosts, the advisability of "heeling-over" our Broccoli plants as a means of checking exuberant growth when it exists, and also of saving the crop from the fate of the plants in 1880-81, once more forces itself upon us. It is rather a perplexing point to advise upon, seeing that, unless the winter be a severe one, the "heeling-over" process is not only so much labour wasted, but the produce is also considerably diminished thereby. However, where the plants have made a luxuriant growth, and upon the principle that "half a loaf is better than no bread," it may be desirable to "heel-over," if not all, at least a portion of the plants, with their heads inclining towards the north. This may be easily done by removing two spadefuls of soil from the end of the row on the north side of the plants, and putting it into a kind of ridge sloping towards the plant—say at an angle of 30° or thereabouts—so that the base of the head may rest against the top edge of the ridge; the spade should then be thrust to its full depth about a foot in front of the plants, and the latter, with the assistance of the spade, inclined forward, and the stem, which, when fully exposed to severe frost, suffers from its effects, should then be covered with a couple of spadefuls of soil taken from the front of the next plant, thus making a sort of bolster for the latter. Where the plants have made a short consolidated growth with sturdy leaves close to the ground, they are less likely to be injured by frost. In fact, dwarf, sturdily grown Broccoli plants which have been transplanted into firm soil are almost proof against frost, suffering but little injury. Where the lifting and storing of roots, as advised in my last Calendar, has not yet been attended to, no time should be lost in forwarding the work forthwith. Remove the Carrot-tops, Cauliflower and Lettuce stumps, &c., to the rubbish-heap, and ply the Dutch hoe between the rows of autumn-sown Onions, Spinach, Lamb's Lettuces, &c., to stimulate their growth and to destroy weeds, for which last-named operation the continuance of fine weather has afforded ample time.

Frame Grounds.—Be on the alert for slugs, which are very troublesome in frames. They may be easily caught at night when they are feeding on the leaves of young Lettuce and Cauliflower plants that are destroyed in a few nights if the creatures are not caught. A mixture of new soot and lime dusted over the plants occasionally when damp, and also (more heavily) along the sides and ends of the inside of the frame, will have the effect of keeping these destructive pests in check. Decaying leaves of Lettuce or Cauliflower should be cleared from the plants as soon as seen, and ventilate freely during fine weather; but when frost threatens close the sashes at night, and should it be sharp cover with mats and Fern.

Forcing Department.—Where there are no proper means for forcing French Beans it will be difficult to keep up the supply. However, much may be done by fixing shelves in Pine-stoves, Cucumber-houses, and early vineries. Another sowing should now be made in 8-inch pots, a little more than half filled with light rich soil. Eight or nine seeds in each pot will be ample, and the pots may be placed anywhere in heat (failing a better, a Mushroom-house would do) until the plants come through the soil, when they should be placed near the light, and, when they have grown a few inches above the rim of the pot, be earthed up. The points of the shoots must be pinched off, to make them branch. Syringe frequently, when other plants will not be injured by so doing, to check the increase of red-spider, bearing in mind, however, that the syringing of the plants should be more or less frequent, according to the high or low temperature of the house, of which 55° to 60° will be high enough at night. Where Asparagus is wanted early in the season, a batch of roots taken up carefully with a digging fork should be put in to force without further delay. Where properly heated pits are not provided for the forcing of this much esteemed vegetable, the next best way of forcing it is by means of the old-fashioned pigeon-holed pits, which have an outer space for linings 3 feet wide and 4 or 5 feet deep, enclosed by a 9 inch wall, and covered with shutters made of Oak, having a little incline outwards, to throw off the rain. These pits, as a rule, are divided by partitions, one of which should be filled with Oak or Chestnut leaves to within 12 or 15 inches of the top, and well trodden down. Over these place 2 or 3 inches thick of short dung, and then a couple of inches of soil, upon which the roots should be placed closely together, and covered with 2 inches of soil, and then a few inches of sifted leaf-mould should be put over all; when the stems have grown 2 inches through the mould, they are fit to gather. The leaves maintain a gentle and steady warmth, which causes every crown to push forth its buds. A bottom and top heat of from 60° to 70° should be aimed at. Where there are no such pits the ordinary hotbed must be had recourse to; this should be made up of one part leaves and one of long stable litter, including the droppings, which should be made into a conical heap, and be turned over a couple of times during an interval of eight or ten days before being used, so as to get rid of the rank heat and smell. A sufficient quantity of this material should be kept on hand for the purpose of making up the linings of the hotbeds, and for new beds. When the heat has declined to a lower temperature than that necessary for the forcing of the roots, linings become necessary. As soon as Rhubarb and Seakale plants have shed their leaves no time should be lost in getting some of each into the Mushroom-house, or other suitable place. When preparing the roots of the latter for forcing, save the thongs or extremities, cutting them into lengths of about 4 inches, and placing them in a box with earth or sand, to be kept till planting time. The last few years I have planted our Seakale in what may be described as a "large shallow box" in a part of one or two beds reserved under the lower shelf in the Mushroom-house. So satisfactory have been the results of this method that I can strongly recommend it to the readers of the *Gardeners' Chronicle*, with the certainty of getting good results. Failing Mushroom-house accommodation, Rhubarb and Seakale may be grown in light mould in deep boxes, the mould being packed firmly round the roots. These boxes may be placed under a stage or in any convenient corner in a forcing-house. Light and air should be excluded from the Seakale until it is fit to cut (say when it has attained the height of 6 inches), otherwise it will be wanting in crispness and good flavour. Both may be grown satisfactorily on an ordinary hotbed, in which case the Seakale should be treated as advised for Asparagus. *H. W. Ward, Longford Castle, Salisbury.*

The Orangery.

Orange Trees in Pots.—I have no knowledge of the culture of these trees planted out in borders, although there is no reason to suppose that this system would not be equally successful with that of their culture in pots. Probably very few would care to devote a whole house for the culture of Oranges, but a great many can obtain a few Orange trees and grow them in any warm house. Their culture is as simple as the results are satisfactory. Suppose the trees have been obtained from the nursery. Three varieties are sufficient—the Tangierine, St. Michael's, and Maltese Blood. Our principal nurserymen are very careful to pot and grow their trees well, but I never trust to their potting. It is best to repot the trees. Use for the purpose a compost the same as that used for the other trees, and pot in the same way. Place the trees in a cool-house until Christmas, and at that time place them in a gentle heat, increasing it as soon as the trees start into growth. Any trees with unripe fruit should be in a temperature of 65°. We are now gathering St. Michael's of excellent quality from a tree that has been in an early vinery all the summer. *J. Douglas.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 3	Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, and Plants from Ghent, at Stevens' Rooms
TUESDAY,	Nov. 4	Sale of Nursery Stock, at Hale Farm, Tottenham, by Protheroe & Morris Sale of 25,000 Lilium auratum, &c., at Protheroe & Morris' Rooms Clearance Sale of Stock, at Sims' Nursery, Foots Cray, by Protheroe & Morris (two days) Sale of Bulbs and Plants from Dutch and Belgian Nurseries, at Stevens' Rooms. Ealing Chrysanthemum Show
WEDNESDAY,	Nov 5	Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Established and Imported Orchids, at Stevens' Rooms Chrysanthemum Show at Southampton (two days)
THURSDAY,	Nov. 6	
FRIDAY,	Nov 7	Sale of Imported and Established Orchids, at Protheroe & Morris' Rooms. Havant Chrysanthemum Show.
SATURDAY,	Nov 8	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Bulbs, at Stevens' Rooms. General Meeting at the Royal Botanic Gardens.

BEFORE these pages reach our readers the INTERNATIONAL HEALTH EXHIBITION will have become a thing of the past. Its success has been great, and it has been well merited. Its scope was most comprehensive, and although sticklers for strict classification may find room for quibble as to whether this or that exhibit had much to do with the main objects of the Exhibition, we may, with great complacency, leave them to the enjoyment of their critical faculty. By the public at large the general result will be hailed with satisfaction, and it would not be difficult to defend the course followed by the promoters, if, indeed, any defence were needed. For our parts we do not admit any such necessity. All classes of the community and all interests have been well catered for, and the most tremendous problems have been grappled with as far as circumstances allowed, as well as what some people might consider the most frivolous.

The great Bacterial question—a matter the importance of which is inversely as its attraction for the mere sight-seer—has been as well illustrated as it well could be under the conditions, and such minor matters as needle-threaders and illuminated fountains have received ample illustration. The scheme of the promoters seems to have been an attempt to cover the wide field of human attributes and of human requirements. We cannot doubt that the nett result of all this apparently heterogeneous medley of the useful and the recreative will prove eminently subservient to the great object of the Exhibition—the welfare of the people. Nor need we feel anything but satisfaction at the part which Horticulture has been called on to play. The little oases of verdure, of flowers, and of choice and interesting shrubs were beautiful in themselves, and most delightful as contrasts to the crowded galleries. Who could doubt the appropriateness of such islets of delight in a Health Exhibition? It is true that no great show of "elephants" has been held, that specimen stove and greenhouse plants have mostly been wanting, and that Orchid lovers have felt some disappointment that their special hobby has received but scant attention. On the other hand, Daffodil lovers, and the increasing host of growers of hardy plants have been well provided for in the continuous and really wonderful display made by Mr. WARE and others. Auriculas and Gladioli, Dahlias and Begonias, have been well represented, and if these and such-like appeal only to the love of beauty and refinement, they have done their part well and have proved, if proof were needed, that such beauty and such refinement are by no means unimportant factors in promoting the rational recreation and therefore the health of the community.

If we turn to the more strictly practical part which Horticulture has played in the exhibition throughout the season of fruits and vegetables adapted alike for the daily use of the community and for the luxury of the few, we can but congratulate the Royal Horticultural Society—which, in this matter, has acted as the agent of the "Healtheries" committee—on the success of its endeavours. Quantity and quality alike have been such as to show that Great Britain, in spite of its fickle climate, can well hold its own against all comers. The quality of the products exhibited in particular has been as a rule superb. In saying this we do not overlook the fact, that save in the matter of exhibiting products in large quantities and finished excellence, little or nothing has been done in the way of instruction. But practical teaching of the kind we have in view would doubtless be carried out better in quieter times, when there are fewer distractions and more time. Still, the food of the people as provided by the cultivator is of such transcendent importance, and the prosperity of the cultivator in these days of foreign competition so very serious a matter, that we can but hope that one effect of this unparalleled exhibition, or series of exhibitions, may be to secure in the future adequate training in the principles and practice of cultivation. In and near the metropolis or the large towns, where gardeners have the opportunity of seeing the best results, instruction in the principles of their art is one of the most pressing needs. The "reason why" needs driving home, not so much because it is the reason why, but because it opens up the possibilities of the future, and enables the cultivator to improve his practice, permits him to cope with new circumstances and unforeseen contingencies, and to avail himself of the constant flow of new discoveries. In more remote districts the great want seems more especially to reside in a better knowledge of results already attained. There is no economy in growing bad sorts, or sorts not adapted to the locality. A good stock whereon to work Apples or Pears costs relatively little more than a bad one. There is no sense in growing indifferent Potatos when there are many old ones of proved excellence, and many new ones whose cropping qualities and general excellence leave nothing to be desired. Then there are practical matters, such as pruning, training, economy of fuel, construction of houses and of horticultural appliances generally, which, however well known to my lord's gardener, are by no means so well known to the small cultivators as they ought to be. A big exhibition in London does not meet the case we have in view. Local efforts are needed, and we are glad to see some signs of progress in this matter in the federation of local societies, and in the general desire to secure better and fuller information. Some day, perhaps, the Royal Horticultural Society of London may rise to its duties and opportunities in this matter, and become in deed, as in name, the head centre of all horticultural progress in the country.

Adverting now to the last show of the season, with its really marvellous samples of Apples and Pears, and its superb examples of vegetable culture, we may appropriately congratulate all concerned. We do not know, we do not suppose that any one does, what is to be the programme for the next season, but we shall be quite in order in pressing on the Society the absolute necessity of securing some meeting-place for the Fellows and for the gardening community, and instituting one or more general meetings of the gardeners of all classes during the season, but of which not a single one was vouchsafed this year. This and the absence of any distinctively instructional and educational opportunities, apart from mere exhibitions, strike us as the two most serious deficiencies in what otherwise must within the limits assigned by circumstances beyond control be pronounced to have been a most successful horticultural campaign.

—— "FLORA ITALIANA."—It is with much pleasure that we note that this publication, interrupted by the death of the late Prof. PARLATORE, has been resumed by Prof. CARUEL. The sixth volume, now commenced, includes the Labiates and a few nearly allied orders. A less diffuse method of treatment is adopted, which is advantageous, as there would be little chance of completing the work in any reasonable number of years if the old plan were continued.

—— "ILLUSTRATIONES FLORÆ ATLANTICÆ."—The second fasciculus of twenty-five plates representing members of the flora of North Africa has just been published, under the superintendence of M. COSSON. The plants represented in the present part are all Crucifers, of no special horticultural value. The execution of the plates is beautiful.

—— SPANISH PLANTS. — Professor MAURICE WILLKOMM's *Illustrationes Floræ Hispaniæ Insularumque Balearium* has reached its ninth part. The text is in Latin, French, and Spanish, and the coloured plates are remarkable for their fidelity to Nature and freedom from artistic convention.

—— THE HEALTH EXHIBITION. — The Gold Medal (for seedsmen) has been awarded to Messrs. JAMES CARTER & Co., High Holborn; and the Silver Medal to Messrs. SUTTON & SONS, Reading. Silver Medals were also awarded to Messrs. WHEELER & SON, Gloucester; and to Messrs. WEBB & SON, Wordsley.

—— ALEXANDER PATERSON, M.D., BRIDGE OF ALLAN.—In consideration of Dr. PATERSON'S general philanthropy, and the interest he has always taken in natural science, as instanced in the impetus he has given to horticulture in his own district, including the cultivation of Orchids and other beautiful and interesting plants, it is proposed to present him with a substantial testimonial, indicating the appreciation in which his talents and his character are held by his numerous friends in all parts of the kingdom. Intending subscribers are requested to communicate, at their earliest convenience, with Mr. ROBERT P. M'CAGIE, Bridge of Allan, Honorary Secretary, or Mr. JOHN GRAHAM, merchant, Honorary Treasurer.

—— ANGRA PEQUENA. — This desolate tract of country, on the south-west coast of Africa, north of the Orange River, which has lately been placed under the protection of Germany, is about to be visited by Dr. HANS SCHINZ, for botanical purposes. Some odd succulents, and perhaps some showy bulbous plants, may be expected.

—— ALLIUM HÖLTZERI.—A species with very long, slender bulbs, linear leaves, and globose heads of small white flowers, with oblong acute segments, and simple filaments with orange anthers. *Garten-flora*, t. 1169.

—— HORTICULTURAL EXHIBITION IN BERLIN. —A great exhibition of the products of the garden will take place next year in Berlin. As we have been informed, the united Garden Societies have resolved to hold the show during the days from September 5 to September 15, and the whole of the buildings of the former Hygienic Exhibition will be made use of for this purpose. We can only congratulate the projectors on their having secured these, as a better adapted place could scarcely be found elsewhere, and where the art of the gardener has already created scenes of the most beautiful description. The lake, the rockery, and the cascades, give the opportunity for making a magnificent open-air exhibition, and the enormous buildings that for an exhibition of tender plants. The gardeners participating in the scheme are already beginning to bestir themselves, and it may be anticipated that the gardeners of Berlin and the neighbourhood will prove what they are capable of doing.

—— CRASSULA GRACILIS. — Under this name there can be seen growing at the Royal Nursery, Slough, a dwarf, small-leaved, red-coloured, Sedum-like plant, obtained from the Continent under that name, and now covered with bright red flowers. It is very attractive, and as it is growing in a cold frame is probably nearly or quite hardy. Whatever may be the correct name of this plant, it is well worthy cultivation.

—— CHRYSANTHEMUM PROSPECTS. — Although the November shows are so near, the somewhat high temperature which has prevailed, allied to occasional sunny days, have rather troubled growers for exhibition, as blooms develope rather too fast, and many a fine promising bud is found ere the show season arrives to


Sophronites
grandiflora
W.H.

have burst somewhat unduly into a nearly spent bloom. Growers do their best to meet this contingency by keeping their plants and houses as cool as possible, but too much shading is apt to prove disastrous. Plants are of necessity got under glass somewhat early, and still farther houses which have warm aspects are usually employed to hold them; hence it is exceedingly difficult to repress the tendency the plants have to push blooms, let what precautions be taken, if the sun shines out hotly and the temperature rules high. In spite of these minor troubles, however, and which may not be general in effect, we anticipate a very fine show season. We hear that most growers for show have this year increased the number of their plants, and if the requirements of the many new exhibitions that are yearly cropping up are to be met, exhibitors must not only prove exceedingly gregarious, but also have an immense store of blooms. A very legion of shows are to be held in the second November week, but a few of the chief ones will test the capacities of the largest growers, and the number of their stands. Many very fine displays may be looked for, but it is feared that elements of novelty will be sought for in vain.

—— THE ILLUSTRATED DICTIONARY OF GARDENING (GILL, 170, Strand), of which several parts are before us, may be safely recommended as the best modern dictionary of garden plants. The compilers have not been content to quote at second-hand, but have gone to original sources, duly acknowledged, and, better still, they show clearly that much of their work is the result of independent research, not on the part of 'prentice hands but of competent persons. The woodcuts are some of them new, and most seem to the purpose; fig. 388, however, seems to take up a good deal of space unnecessarily, and in all cases some indication of relative magnitude should, if possible, be given. Here and there we notice a slip, as in the definition of cambium, which is hardly consistent with modern notions; but on the whole we would recommend that no garden library should be without this very useful publication.

—— BLUE ROSES.—M. MYARD tells us in the *Journal des Roses* how to produce these:—1. Get some fuchsine (an aniline dye), and dissolve it in distilled water, so as to get a strong solution. 2. Dissolve a "pinch" of potash in 25 centilitres of distilled water. 3. Steep a white or pale rose in the potash solution, and afterwards in pure water, then soak it in the fuchsine. In this way a fine blue tint will be produced, varying in depth and uniformity of distribution according to the strength of the solution and other circumstances.

—— LINNEAN SOCIETY OF LONDON.—Meeting Thursday, November 6, at 8 P.M. Papers to be read:—1. "Notes on some New Zealand Birds." By THOMAS POTTS. 2. "On a Collection of Plants made in Timor-laut Islands." By H. O. FORBES. 3. "On some Points in the Development of the Five-bearded Rockling (Motella mustella)." By GEORGE BROOK. 4. "Remarks on the Reproduction of the Heterocismal Uredines." By CHARLES B. PLOWRIGHT.

—— DAHLIAS IN AUTUMN.—In a schedule of prizes of a cottagers' show to be held in Kent on November 6 there is a class for three blooms of Dahlias. If the fine open weather continue, there is no reason why some finely good flowers should not be shown; for, notwithstanding that a sharp frost played some havoc with the plants on October 9, they are now growing merrily, and flowering freely. Mr. TURNER states that the earliest date which he can remember when the Dahlia plants were destroyed by frost was on the morning of September 20, 1840. Mr. GEORGE RAWLINGS mentions a date as early as September 9 or 10, some years ago. At Slough there is an astonishing head of bloom for the season of the year; the plants are practically covered with bloom, and especially the pretty free-blooming pompon varieties. It is a season eminently favourable to the ripening of seed; and growers, who are also raisers of seedlings, should have no difficulty in obtaining some valuable seed.

—— HERTFORDSHIRE NATURAL HISTORY SOCIETY. — This day, November 1, a cryptogamic meeting and fungus foray is to be held at St. Albans. The members will assemble at the London and North-Western Railway Station, St. Albans, at 2 P.M.; leave Euston at 1, Watford at 1.40, walk along the lane nearly opposite the station to the Verulam Hills, then through the woods to King Harry Lane, and on this lane to the "Hollows." From the woods the party will here enter Gorhambury Park, and return along the carriage-drive to the lodge gates near St. Michael's Church, and then by the "Water Walk" to the station for the 5.50 train to Watford. Dr. M. C. COOKE, M.A., A.L.S, and Mr. WORTHINGTON G. SMITH, F.L.S., will accompany the members and name the species of fungi collected; and Dr. BRAITHWAITE, F.L.S., will identify the mosses.

—— A SPIRITED LITTLE COLONY.—"C. H. A." writes to us as follows:—"The small colony of Tasmania has just done a generous and noble deed. For the first time in its history it has voted a pension as a reward for distinguished literary and artistic merit. The recipient of this honourable and exceptional distinction is Mrs. LOUISA A. MEREDITH, widow of the late Hon. CHARLES MEREDITH, a public man of no mean order, and one whose memory is still fresh, not only with his old supporters, but is held in high esteem by those who felt bound to oppose his political views. Mrs. MEREDITH is well known, not only as an authoress, but as an artist of singular grace and power. She has done more to illustrate the beautiful flora and the singular fauna of Tasmania than any other person, as will readily be admitted by all those who have seen her beautiful works—'Some of my Bush Friends in Tasmania,' 'Our Island Home,' 'Tasmanian Friends and Foes,' &c. Advanced age and failing eyesight will, it is feared, deprive us of any fresh productions from Mrs. MEREDITH'S facile and charming pencil; but all will agree that the Tasmanian Parliament did honour to itself when on August 8 last it disregarded the want of precedent, and voted a pension of £100 per annum to Mrs. MEREDITH in recognition, not only of her own great talents, but in honour of her late husband, who throughout his long public career had but one object, and that was the prosperity and advancement of his adopted home."

—— THE RESPIRATION OF PLANTS.—The notion that the respiration of plants was essentially similar to that of animals, which had begun to be accepted as an admitted fact, was recently questioned by M. DEHÉRAIN and others on the ground that there was no definite relation between the volume of oxygen taken in and the amount of carbonic acid given off. Lecturers and others regretted this want of symmetry and analogy with animal respiration, but submitted as in duty bound. Now come MM. BONNIER and MANGIN, who tell us that under fixed conditions the relation between the influx and efflux of the gases in question is constant, and that the word "respiration" may after all be safely applied to plants.

—— VRIESIA FENESTRALIS.—A tufted Bromeliad with oblong obtuse recurved leaves, with numerous transverse, narrow, undulating bands of dark green colour on a lighter ground. Flowers very numerous, sessile, in two rows along the sides of a stalked terminal spike. Individual flowers greenish, somewhat cup-shaped, opening in the evening and exuding a large quantity of acid fluid. The plant is a native of Rio Janeiro, and is figured in the last number of the *Belgique Horticole*.

—— ROYAL BOTANIC SOCIETY.—The following are the arrangements for the year 1885:—Spring exhibitions:—Wednesdays, March 25 and April 22. Summer exhibitions:—Wednesdays, May 20 and June 17. Evening *fête*:—Wednesday, July 1, 8 to 12 P.M. Special exhibition:—American plants, by Mr. ANTHONY WATERER, Knap Hill, Surrey: daily during June. Promenades:—Every Wednesday, from May 6 to July 29, excepting May 20, June 17, and July 1. Lectures:—At 4 P.M. Fridays, May 1 to June 19. General meetings for election of new Fellows, &c.—Saturdays at 3.45 P.M.; January 10 and 24; February 14 and 28; March 14 and 28; April 11 and 25; May 9 and 23; June 13 and 27; July 11 and 25; November 14 and 28; December 12. Anniversary:—Monday, August 10, at 1 P.M.

—— PYRUS (CYDONIA) MAULEI.—Whether we regard this as a distinct species, or merely as a cultivated form of P. japonica, it is certainly very distinct for garden purposes, and ought to find its way into every well ordered collection, even if it is a limited one. It is dwarfer and more floriferous than the latter mentioned species, and every spring sees it covered with its peculiarly tinted orange-scarlet blossoms, while autumn is almost as certain to find it loaded with its deep yellow Apple-like fruit. A bed of it near the greenhouse, Kew, is annually a source of great attraction during the autumnal months. A description and figure of the plant first appeared in the *Gardeners' Chronicle*, vol. ii., n. s., p. 756, t. 159, and there is a beautiful plate of it in a recent number of the *Botanical Magazine*, t. 6780.

—— MUSHROOMS AT MR. J. T. BARTER'S.—A visit to Mr. BARTERS' Mushroom grounds, at Lancefield Street, Harrow Road, London, W., will well repay any one desiring information on the subject, and those who wish to see Mushrooms cultivated to the best advantage in the open air will be equally satisfied. Mr. BARTER, as some of our readers are aware, has devoted much time and trouble to this particular subject, and it must be admitted he has succeeded admirably. The beds are arranged in straight rows, and vary in dimensions according to the season of the year, the late spring and summer ones being about 3 feet at the base, 2 feet 6 inches high, and 6 inches on the top, while those for use in autumn and winter are a little larger. The beds are covered with about 1½ inch of soil, and are spawned at 80°, the whole then being covered with a thick coating of straw litter and bast mats, varying in thickness according to the weather. The results obtained by thus growing Mushrooms in the open air would astonish many of those who have Mushroom-houses and every convenience, the beds being thickly and regularly covered with as fine a lot of Mushrooms as any one could wish to see.

—— WAKEFIELD PAXTON SOCIETY.—A meeting of considerable importance was held on Saturday last. About twenty delegates from the gardening societies of Sheffield (two societies), Leeds, Barnsley, and Rotherham, assembled at the invitation of the Paxton Society. After a lengthy discussion, resolutions were passed that a union of the gardening societies of Yorkshire should be formed, to be called the "Yorkshire Union of Horticultural Societies," and a committee of the Paxton Society was asked to draw up a code of rules for the approval of all the societies joining. This meeting was held in the afternoon, previous to the ordinary weekly meeting of the Society, at which the delegates and others had the pleasure of hearing a lecture from the Rev. J. W. C. HUGHES, of Wragby, on "The Flora of the Ionian Islands;" which, from the lecturer's familiarity with his subject, gained by a long residence as HER MAJESTY'S Chaplain in those islands, proved instructive, and a fitting conclusion to the important meeting of the afternoon.

CLERODENDRON SIPHONANTHUS.—The tall growing species of this genus we are accustomed to see trained up the rafters of a house, or on some framework, and the natural habit of those is more or less climbing; but the subject of this note is an erect growing species, with lanceolate, elongate leaves in numerous contiguous whorls, that amply clothe the long rod-like stems. In order to flower this plant it is essential to induce a free vigorous growth without pinching or stopping, as the flowers are produced in axillary clusters towards the end of the young wood as well as terminal. They are creamy white, with purple exserted filaments and style, and slender glandular hairy tubes about three or four inches long that droop elegantly all round the stem. There is a figure of this stately old species in Burmann's *Flora of Malabar*, t. 43, f. 1, and a tall flowering specimen may now be seen in the Victoria-house at Kew.

—— DUTCH TULIPS.—How little this gorgeous and once very popular flower is appreciated in the present day was recently shown at Birmingham, when a select number of bulbs of very fine strains from the collection of Mr. JAMES THURSTON, Merriedale, Wolverhampton, was offered for sale by public auction. The collection was valued at £380, but the sale scarcely realised £15. It has been the work of years on the part of Mr. THURSTON to work up a fine collection, and it has also been done at the cost of a considerable outlay. This kind of thing is no longer a remunerative investment, and they who grow Tulips must do so solely for the pure love of the flower. And it is one of the lessons taught by experience, that as soon as a flower becomes neglected the finest strains deteriorate, because there is the

absence of any incentive to improvement. Let us hope that there may be found some new aspirants to floricultural fame, who will be found willing to reinforce that somewhat limited band who labour to keep the gorgeous Tulip up to its best standard of perfection. Some hope for a floricultural revival; may its advent be a speedy one ere collections of value become dispersed and lost. Why should not beds of fine late Dutch Tulips be grown in our public parks in common with the early varieties? They would find many admirers.

—— Liverpool Horticultural Association.—The following lectures will be given before this Society:—November 1, at 7 P.M., "Nil Desperandum," on "Cultivation of Vegetable Crops"; December 6, papers by Mr. Hugh Ranger, on the "Cultivation of the Cyclamen"; also, by Mr. Edward Bridge, "On the Cultivation of the Pelargonium." January 3, 1885, papers by Mr. William Mease and Mr. Robert Curbon.

—— The Lilies of Scripture.—The most reasonable interpretation of the word "Lily" is that it is to be taken in a metaphorical sense, and not as specially applicable to any one plant in particular. The common white Lily, Lilium candidum, was considered by many to have the clearest claims, but this plant was objected to, on the ground that it is not native to Palestine, but occurs there only in a cultivated condition. Boissier, however, states that he has a wild specimen from Lebanon, and in the appendix to his *Flora Orientalis*, p. 756, lately published, he cites Peyron as having met with the plant in great abundance in rocky passes near Feitrum, in the Lebanon, at a height of 3400 feet, as well as in many other localities in the same district.

—— Eremurus Bungei.—A tall species with ascending linear leaves and very dense, erect racemes of yellow flowers with broad obtuse segments and projecting stamens and orange anthers. A native of Persia. Figured in *Gartenflora*, t. 1168.

—— Eremurus aurantiacus.—An Asphodel-like plant with linear leaves, tall, erect, many-flowered racemes, spreading, closely set flower-stalks and star-like pale yellow flowers with six projecting stamens with yellow anthers. A native of Afghanistan. *Gartenflora*, 1884, t. 1168, *b.—h.*

—— Azaleas.—When recently looking through the houses of fine specimen Azaleas at the Royal Nursery, Slough, we were struck with a remark of Mr. Turner's, which seems to show in a striking manner the great addition made to the varieties of Indian Azaleas during the last ten years. He said that of the old varieties that formerly held high position as exhibition and decorative varieties he now grew only Chelsoni, retaining this for its bright and attractive hue of colour. To use his own words, such types as "Iveryana, Criterion, &c., are no longer in it." As fine a lot of half and three-quarter specimens are to be seen at Slough as one could well desire to look upon; they are vigorous, clean, and well set with buds; moreover, they are representative of all the newest and best varieties, and there are hundreds of Azaleas of all sizes. What a stupendous exhibition they would make when in flower could the plants be gathered together in one centre.

—— Impatiens Sultani.—These pretty summer, and, we also anticipate, winter bloomers, have become possessed of an additional colour in pink, so that there are now scarlet, pink, and white colours. Mr. Cannell, from whom we received these blooms, states they are nice flowers for bouquet work.

—— Bouvardias Planted Out in Summer.—During the past summer Mr. Turner had a number of Bouvardias planted out in a bed in the open air in his nursery at Slough, at the same time when the ordinary bedding plants were put out. They were turned out of pots and planted in good soil. Here they grew freely, and towards the end of the summer flowered profusely. A few days ago the plants were lifted, potted, placed in a cold frame, and by-and-bye they will bloom and be found very useful.

—— Marriage in High Life.—The great event of last week in London society was the wedding of the Marquis of Stafford, M.P., eldest son of the Duke of Sutherland, to the eldest daughter of the Earl of Rosslyn, the Lady Millicent St. Clair Erskine. The Prince and Princess of Wales and the Princess Christian attended the ceremony (which took place at St. Paul's, Knightsbridge), and also the breakfast. The floral decorations were entrusted to Messrs. Laing & Co., of Forest Hill, and consisted of white flowers only, with Maidenhair Ferns and small Palms. The flowers chiefly used on the tables and in the Princess of Wales' boudoir were Orchids, Eucharis, Gardenias, Stephanotis, double Primulas, Chrysanthemums, and other of the choicest kinds. Messrs. Laing & Co. were highly complimented on their tasteful display.

—— Mr. Cox, of Redleaf Gardens.—We hear that our valued old correspondent and well known gardener has retired to the Isle of Wight, on account of failing health. We hope the repose and quiet will be beneficial to him.

—— Business Note.—Mr. T. H. P. Dennis, of Chelmsford, having retired altogether from business, it will be carried on by the remaining partners, R. E. Crompton and F. A. Fawkes—the latter retaining his present position as managing partner—under the title of Crompton & Fawkes.

—— Publications Received.—*Biographical Notice of, and Funeral Oration on*, M. Alphonse Lavallée.—*Agricultural Returns of Great Britain and Other Countries.*

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Oct. 27, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather during the first part of this period was generally fine and dry, but subsequently became rough, squally, and rainy, with great oscillations in temperature. At several of our northern and north-western stations hail or sleet showers were reported. The temperature has been a little below the mean in "England, E.," and about equal to it in the "Midland Counties" and "England, S.," but in all other districts it has been slightly in excess of its normal value. The maxima, which were registered on different dates in the various districts, ranged from 57° in "Scotland, W.," to 60° in "Scotland, E." and "England, S.W.," and 61° in "England, S." The minima were with few exceptions, recorded on the 25th, when the thermometer fell to 28° in England, E.," 29° in "Ireland, S.," 31° in "Ireland, N.," and to between 33° and 36° in most other districts; in the "Channel Islands," however, 45° was the lowest reading. The rainfall has been more than the mean in "Scotland, N." and "Ireland, N.," but less elsewhere. In the south and east of England and in the "Channel Islands" the fall has been very slight. Bright sunshine has been more prevalent than it was last week in nearly all districts, the percentage of possible duration varying from between 12 and 17 in the west and north to 37 in "England, E.," and "England, S.," and to 44 in the "Channel Islands." Depressions observed:—During the earlier days of this period the high-pressure area, which had been established over France and the greater part of England and Ireland moved slowly eastwards, and depressions travelled westwards outside our extreme western coasts. The wind consequently shifted to the southward at all our stations, and blew freshly in the west. By 8 A.M. on the 24th the conditions had become very irregular. A second area of high pressure had appeared off the west of Ireland, while an ill defined disturbance was shown over the Bay of Biscay, and another low-pressure system off the west of Scotland. This distribution, however, was of short duration, as from the 25th till the end of the week (the barometer being now highest over France) some large and unusually deep depressions travelled quickly in a north-easterly direction to the westward of our islands and over Scandinavia, producing strong winds and gales from between south and west or north-west in all parts of the kingdom. The chief force of the gales was experienced on our north-western and northern coasts on the 26th, and again on the night of the 27th.

—— Gardening Appointments.—Mr. A. Beech, late Foreman at Flete, Ivy Bridge, Devon, has been appointed Head Gardener to Geo. Norris, Esq., Wood Norton Hall, East Dereham.

THE SOPHRONITIS.

S. grandiflora, Lindl. (S. coccinea, Reich. f.).—This showy beauty, with its brilliant scarlet flowers departing from the modesty of size and habit of the inflorescence of S. cernua—whose meek deportment probably suggested the generic name [*sophron*, modest]—is by far the finest of the genus, and now that its culture is well understood, each year it becomes a greater favourite. Collected and sent home alive to this country for the first time by Mr. Gardner in 1837, not even his description of the high altitude in the Organ Mountains of Brazil (7000 to 8000 feet, near Rio Janeiro) could save it from being always designated a "stove epiphyte," even the fine coloured plate in vol. xvii. of the *Flore des Serres et des Jardins* being marked "*serre chaude.*" No more misleading description could be given of the plant, nor one likely to be more fatal to the production of its beautiful flowers. In the early years of its attempted cultivation in this country the fresh imported plants were frequently heard of as flowering here and there, and were always admired, but it soon got found out that the greater part of the plants quickly died out, and at last the imported plants were received by many in the full belief that they must necessarily die out, too, in a short time. That the cause of the great mortality among them arose from their being grown in hothouses is proved by the fact that, during all the time that such quantities were being lost in heat, a few were being cultivated very successfully in cold houses; for example, Mr. Sillem of Lawrie Park has in his possession now a grand specimen which springs from a very tiny plant received over twenty years ago, and which has been grown ever since as a cold greenhouse plant. Not before it got generally known that S. grandiflora grew best in a cold house did the plant get really at home in this country; but since it has been grown in the cold Odontoglossum-house or other such-like cool shady place, it is a thing almost unknown to hear of a plant that is so treated dying, while the great improvement which it seems to make every year in growth and flower causes one to wonder what it will ultimately come to and to regard its ancient synonym, Cattleya grandiflora, as not such a ridiculous name after all. What could be more beautiful than that grand specimen with over fifty flowers each, measuring 2¾ inches across and all open at the same time, which Mr. R. P. Percival had at Clevelands, Birkdale, last year? And that was only one among many. However it is no novelty to see well-grown plants of this charming Orchid, and it is a pleasure to see them getting stouter every year.

There is great novelty in S. grandiflora, some being much longer in the bulb than others, and some differing from others in various tints between bright orange and blood-red, but all are lovely when well grown. A. Philbrick, Esq., of Oldfield, Bickley, who grows many specimens of it to perfection in shallow pans in the cold house, has one plant which always produces its flowers in pairs.

S. grandiflora purpurea is of the short bulbed class, rather prostrate in habit, and produces flowers of a dark crimson which, when mature and fading, have a decidedly purple hue.

S. grandiflora rosea.—This is a very distinct and rare variety, with bright rose-coloured flowers. A good plant of it is in the possession of J. T. Peacock, Esq., Sudbury House, Hammersmith.

S. militaris (syn. S. grandiflora).

S. cernua.—This was the first of the species introduced. We read of its having been in the possession of Mr. William Harrison, of Liverpool, in 1826. It bears three to five-flowered racemes of small orange-coloured flowers.

S. pterocarpa, like the preceding, is nothing to compare with the varieties of S. grandiflora for beauty. It has dark rose-coloured flowers.

S. violacea has very distinct rounded and grooved pseudobulbs, about 2 inches in height, and leaves much thinner in texture than those of the other species. The flowers, which are small, are violet in colour. The plant is said to have flowered first in 1840 with Mrs. Cannon, of Stratford Green.

All the Sophronitis are cold-house plants requiring to be kept wet all the year round. They thrive best on blocks or rafts, or in those shallow pans for suspending now so much in use, and the material they prefer around them is very fibry peat, to which may be added crushed charcoal. Perfect drainage is necessary in order to allow of the frequently given water passing off. Although the three last-named species are not nearly so good as S. grandiflora, they are well worth growing, and good culture will produce fine masses of them which will not fail to be admired. *James O'Brien.*

SEASONABLE WORDS ON ORCHID CULTIVATION.

EVEN before the end of October the plants have entered the transition state from the autumn to winter. It is but reasonable that the treatment should be such that one season glides into the other almost imperceptibly. In the warmest house there are the Calanthes throwing up their flower-spikes, and they always seem to do better in this house with a temperature of 65° than in one even 5° lower. As soon as the flowers begin to open the plants may be removed to a cooler house, where they will open more slowly and last longer in good condition. The heat-loving Cypripediums produce some quaint and beautiful flowers at this season, and none are more beautiful than C. Spicerianum. This seems to require the same treatment as C. niveum—plenty of heat and moisture, while they both dislike to have the potting material pressed too closely round the base of the plants.

One of the most charming of recent additions to this house is the Phaius tuberculosus; it is now in the middle of its growth and producing its flower-spikes. It must be kept moist all through the winter, and the leaves should be kept clean by frequent sponging. In the shadiest part of the house the various species of Angræcum will now be showing their flower-spikes. They like plenty of heat, and if kept free from yellow thrips they are sure to do well. Up to this time Vanda Hookeri and V. teres have been quite near the glass; they have made good growths, and it will now be quite time to place them in a cooler house, gradually withholding water from them. Near the glass in the lightest part of the house we place our plants of Odontoglossum Roezlii. This is a very charming species when well grown, as it can be in the warmest house. We never let the plants get anything like dry in winter; indeed, it is not possible to do so, as they usually make their growth at that season. The Bolleas and Pescatoreas do not like a dry atmosphere, nor do they thrive if allowed to become dry at the roots even in winter. They should be placed at the coolest end of the house. In winter they must be quite near to the glass, and the leaves kept free from spider by sponging. The deciduous Dendrobiums, if they have made their growths in this house, ought now to be removed to a cooler place. A rather dry house suits them best, where the temperature does not fall below 45°. They will require scarcely any water during the winter—the species requiring this treatment are D. Wardianum, D. crassinode, D. Falconeri, D. nobile, and others of this type. Such evergreen kinds as D. densiflorum, D. Griffithianum, D. Farmeri, D. thyrsiflorum, &c., if they have made their growths in this house, should be removed into the Cattleya-house; they will not flower well unless they are kept rather cool, dry at the roots, and in a dryish atmosphere.

In the Cattleya-house the transition state must be gradual as in the other departments, but it must be more decided. A very damp atmosphere in winter, whether the temperature is low or high, must be avoided. I happened to be looking through the houses in a large establishment where Cattleyas are grown much better than usual, and as this was in winter I could not but remark on the good condition they were in, and was told that no water was sprinkled about anywhere, not even on the paths, except once in a week to wash them down. The wall ventilators were open night and day; the minimum temperature being as near as possible to 55°; it might fall to 50° on cold nights, but the plants receive no injury from it. Under these conditions the evergreen Dendrobiums would pass through the winter, and if they made good growths, and were kept dry during the winter, they would be sure to flower well the following spring and summer. In a mixed collection of Orchids there are many species and varieties, which may be making their growth in the winter, and a number of them would not submit to the atmosphere being kept so very dry. Amongst these may be mentioned the numerous Masdevallias, which would be injured if left in the cool-house; many of them are making their growths, some of them, including M. tovarensis, are both growing and coming into flower. All plants usually removed from the cool-house to the Cattleya-house at this time of the year should be attended to before very cold weather sets in. Our plants of Odontoglossum vexillarium have just been taken out of the cool-house and placed near the glass in the Cattleya-house, and as they are just making their growths it would not do to have the atmosphere so dry for them as for Cattleyas and Dendrobiums; the plants are also kept sufficiently moist at the roots to keep the sphagnum in a green and healthy condition. Odontoglossum cirrosum has usually been kept in the cool-house, but they seem to suffer a little in the winter, and the largest proportion of them have been removed to this house. It is a question whether the whole of the Masdevallias would not be better in the coolest part of this house rather than in a cool-house, unless it is more exposed to the sun than some of them are. Young and old leaves both die off in an unaccountable manner in the winter months, and they are not so liable to do so when they pass the winter in a span-roofed house well exposed to the sun as in a lean-to facing north which scarcely gets a glimpse of the sun for three months in winter. Cymbidium Lowianum ought also to be kept near to the glass roof, and will also require a fair supply of water as the flower-spikes are showing. C. Mastersii is also showing its spikes, and C. eburneum will do so ere long. All of these and kindred species like a fair supply of water at the roots.

The house does not lack bloom at this season. The Pleiones are very pretty, so also are the elegant Barkerias, which love light, air, and moisture, as they favour blocks rather than any organic matter about the roots. Another elegant plant we look to flower now is Lælia albida, and the more splendid L. autumnalis. Odontoglossum Londesboroughianum is very handsome and elegant also if the plant is placed where the spikes will hang gracefully over Ferns or other plants.

In the cool-house recent experience has taught us that a dry atmosphere is much better for the plants than a moist one, especially for old established plants, whether they are in growth or have made their growth. Plants that have but recently been introduced and have not yet formed any new roots would be all the better for a moderately moist atmosphere, and a warmer temperature. One successful amateur told me that he always started his cool-house Orchids in a warmer house, and had been very successful even with that shy rooting Orchid Odontoglossum Edwardii. I put six newly imported plants of this species into the cool-house last January, they are all growing now, but not all of them have started to root, and they have been kept very moist all the time. Lælia autumnalis used to grow well and flower annually in our small span-roofed cool-house, but it was placed close to the glass, at the south end, and had plenty of light and air all through the summer, but if the culture of this plant was to be attempted in the lean-to houses behind a north wall failure would be sure to result. The plants succeed fairly well in a Cattleya-house, the coolest part close to the glass.

Another thing of considerable importance is the position which the various plants occupy in the house, Odontoglossums of the crispum, Pescatorei and luteo-purpureum type, are not at all particular in this respect, on the other hand some species of Odontoglossum are very fastidious; O. nebulosum, for instance, used to grow very well with us on the stage amongst the others, but they would die off before the growths were completed, the cause being damp. This suggested hanging them up near the glass, where the air could play freely around them, and in that position not a single growth has been injured. Such plants do not suffer in the summer, but in winter they are sure to do so. The charming little O. Rossii should also be placed close to the glass now. The very handsome O. coronarium may be managed by growing it in a box formed of Teak, so that the leading growth may push over a shallow bed of fibrous peat and sphagnum kept loose by a liberal addition of clean potsherds and charcoal. The plant should also be raised within a foot of the glass roof. It does not often grow well, and when it does it may not flower; but it is so handsome in flower and distinct as a plant that it is worth some trouble to do it well. At present once a day will be sufficient to sprinkle water about in this house—the morning in preference to night, as much moisture hanging about at night causes the delicate flowers to spot.

The temperature should range about 50° at night. In mild weather, as at present, 55° will be better; when cold, dull weather sets in even less moisture will be required. *J. D.*

LADY SUDELEY APPLE.

WE learn that Messrs. George Bunyard & Co., of Maidstone, have decided to distribute this remarkable Apple, hitherto known as Jacob's Strawberry Apple, next year, if they can raise a sufficient stock. In order to avoid confusion of names they will rename it Lady Sudeley, by permission, there being four other Strawberry Apples in cultivation. It is somewhat remarkable that such a beautiful fruit—moreover, one possessing such merit in point of size, flavour, and continuous cropping—should not have been known to Dr. Hogg, Mr. Barron, or the Fruit Committee of the Royal Horticultural Society, and known judges regard it as a valuable acquisition.

By those who have seen it growing for seven years it has been regarded as an excellent dessert fruit, and also well adapted for exhibition. It will certainly be considered as indispensable in all well ordered fruit gardens in the milder parts of the kingdom. Although there are now many varieties of early Apples, we can thankfully find place for this sort, which begins to colour towards the end of July, and in August it comes into use, lasting in good condition for about two months. Our illustration (fig. 101) shows the general character of the fruit, which is streaked with crimson on the sunny side.

A WEST-COUNTRY NURSERY.

THE Vinstone Nursery of Mr. Serpell is situated so as to have a wide view over Devonport to Brent Tor and the weathered heights of Dartmoor. But a Plymouth villa generally has this adjunct. The former proprietor formed an extensive Arboretum here, and although many of the specimens have been swept away to make space, yet some of the finest have been allowed to remain. A huge Cupressus Lambertiana is famous all over the west country. It looks for all the world like some old wide-spreading Cedar of Lebanon. The tree is 15 feet 8 inches in girth 5 feet up the stem. It has either lost its leader and the young shoots have all been allowed to grow together, or else it has a different habit to macrocarpa, which is generally more or less pyramidal in form. That there is something in this latter fact is undoubted, and ample evidence in support of it can be seen at Port Eliot, near St. Germains. As you stand on the brow of the hill and look down over the young Conifers with their fresh and shining foliage, you cannot help thinking you have never seen them to such advantage, and the more you look the surer you become. Moreover, at Vinstone the valley below is both pastoral and woody. A tall Weeping Beech first fixes the attention when the eye begins to single out the component parts. It is a constant refrain in your Notes from Correspondents that such and such a thing is not half known or grown as it should be; and had not one of our best known gardeners assured me that he had never seen a specimen, I should have foreborne to make the same complaint. The Weeping Beech is emphatically one of the finest of the pendulous trees, and is especially suitable for planting on lawns or by water, or at the conclusion of a walk. The remains of the collection of the Barberry family and of the Magnolias are almost intact, and any one who wishes to judge of the character of any variety as a large specimen cannot do better than call on or consult Mr. Serpell.

As the ground has a north aspect, the Dahlias, which are extremely well grown, hang on till late in the season. Magnificent exhibition blooms could be obtained late in September, of W. H. Williams, Imperial, Hope, Condor, and a beautifully tinted variety not yet in the trade called Mary Taylor. Fancy rockwork is another speciality, and the examples shown in the nursery are conspicuous for their lightness and airiness. Hollow rockwork is undoubtedly preferable both because it makes a bolder piece of work, and because less stones are used. Why villa-holders cannot employ a skilled man in the first instance instead of putting up hap-hazard clumsy erections is only explainable on the ground that they are unaware of their own ignorance and want of taste. Facing the road so as to be seen of the passengers are several well kept flower-beds in which great use is made of Begonias and Dracæna lineata. Some shrubs of Escallonia montevidensis stand out here and bloom freely.

One of the show houses is arranged so that at first sight it seems impenetrable, for in order to avoid the straight line down the centre two rectangular spaces

are cut in the staging, round which the path is led. Abundant use is made of Ferns and virgin cork to cover the ground beneath the staging. Some grottos formed of the same substance are very ingeniously made, by a system of looking-glasses fixed at the back of them, to reflect others placed at their side, and thus to make it appearas if they extended backwards to a very distant scene. These grottos were planted with taste, and were before anything I have seen of the same kind. The chief plants used were Cocos Weddelliana, Adiantum Farleyense, Asplenium viviparum, Todea pellucida, Ficus scandens and repens (the former a famous thing for covering damp back walls), Pteris tricolor, and Adiantum ciliatum, which was very pretty with its linked system of dependent fronds. At the back wall of this house is trained a large Monstera delicosa. Any of your readers who may happen to be in Plymouth will be well pleased if they visit this nursery, and will pick up wrinkles not a few. *C. A. M. Carmichael.*

Home Correspondence.

Gardeners' Royal Benevolent Institution.—I have received a great many complimentary letters, but only one enclosing any cash, and I herewith send it for your perusal and publication if you think fit, or, perhaps better still, to the Hon. Sec. of the Society, E. R. Cutler? Do let us see if we cannot raise the amount before the beginning of December. *W. Swan, Oakley, Fallowfield.* [We have received £1 from Mr. Hatch, The Gardens, Manor Cottage, Old Windsor, which we have forwarded to Mr. Cutler, and shall be glad to forward other donations. We should be glad to receive shillings from gardeners who have not hitherto contributed, as well as pounds for the same purpose. Ed.]

Ampelopsis hederacea.—The Virginian creeper has long been a favourite, but it is not so extensively planted as its merits deserve, for besides being so light and elegant in appearance all the summer, it is magnificent during the autumn, especially in seasons like the present, when it puts on the most intense colouring and quite outrivals itself. Although I have always admired it before, I have been more than usually struck with it this year, as the other day I saw at Felixstowe a house with light walls ablaze with it, the contrast between the background and the foliage being most charming. On the poultry-houses and fences at Lord Gwyder's, near Ipswich, it is almost equally good, and it seems fine and rich everywhere, the sun having painted it in deep claret and scarlet, and shaded it off to perfection. If this Ampelopsis were only used freely in pleasure grounds to run up and drape thin spare trees and depend from the branches, a new feature would be introduced and much beauty added, as it would give a brightness to

White Lapageria.—We have what we consider a very fine plant of the white Lapageria planted out in one of the greenhouses here. I herewith enclose a sample of the flowers for your inspection. You will see, from the accompanying shoot and leaves, the vigour of its growth. Last winter I was obliged to give it rather a severe pruning, as it had grown so thick and matted together. I saw it would be impossible to see the flowers, even although they did come. I am glad to say it stood the pruning very well. I would feel greatly obliged by your answering the following questions: — Is there more than one form of the white variety? How did it originate? Was it a garden hybrid, or what? and from what country was it originally imported? *William Kilgour, Gr., Edge Hill, Aberdeen, October 27.*

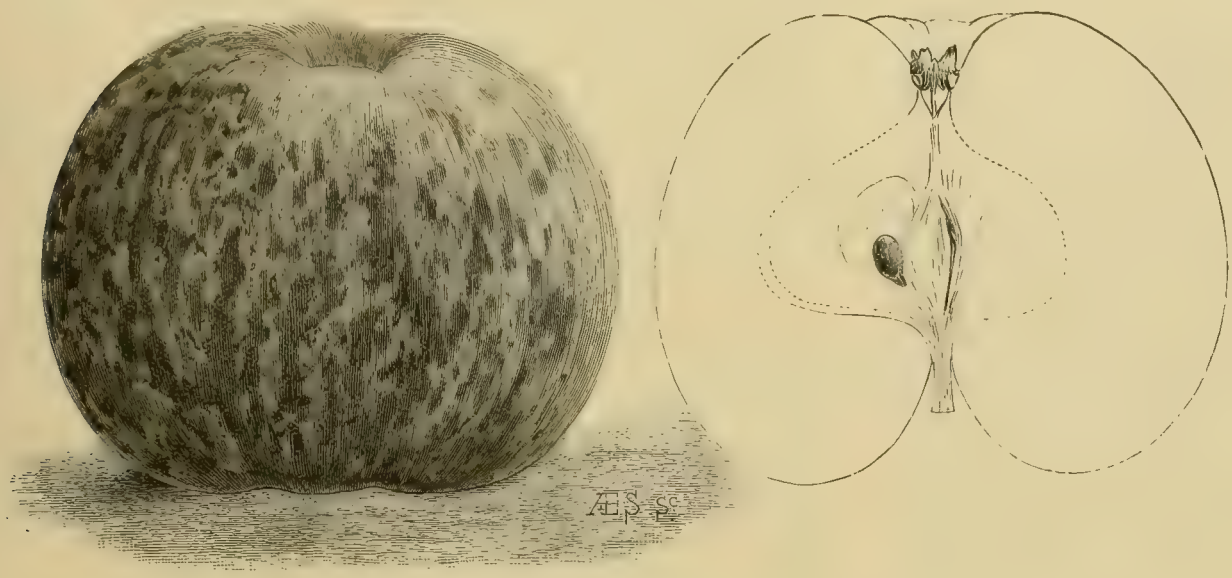


Fig. 101.—Apple Jacob's Strawberry, or Lady Sudeley. (see p. 564.)

There is an old saying that "Fine words butter no Parsnips," and all the fine complimentary talking or writing will not produce the £420 we require. I have therefore to ask my friends not to send any more such letters, but if they must write may I ask them to respond to the appeal of the Treasurer and the committee by sending a tangible form of approval in the shape of cash? *E. R. Cutler, Sec., 14, Tavistock Row, Covent Garden, London, W.C.*

—— I am very sorry to learn that there is a prospect of the amount necessary to raise the pensions of the Gardeners' Benevolent Institution not being forthcoming; may I therefore suggest that at the forthcoming Chrysanthemum shows throughout the United Kingdom, also at the opening meetings of the many mutual improvement societies in connection with botany and horticulture, and at other gatherings of a social character where gardeners most do congregate, the president or secretary, or some one who may be appointed, would feel it incumbent upon them to bring the claim and needs of the Institution before the members, and not to rest until each one has done a share however small in helping to raise the sum required (£420), so that the promised £500 may be secured to complete the amount required. May I also appeal to many who may be anxious to contribute, not to wait till they are called upon to do so, but at once to send their sum, large or small, with the addition if possible of a neighbouring brother's mite, to the office of your paper, the arboreal ornaments and show up well against the varied tints of their foliage. Ampelopsis Veitchii is equally valuable, but this variety is closer growing, and therefore more adapted for covering walls or fences, purposes for which it is specially suitable, and most telling it looks when so used in combination with silver variegated Ivy, with which it associates well. *J. S.*

Horizontal Tubular Boilers.—In reply to your correspondent "Yorkshireman" in last week's issue of your paper, I may say that I have had considerable experience in almost all known kinds of hot-water boilers, and without prejudice I may say, although there are several exceedingly good boilers in the market, commend me to the horizontal or tubular boiler (known as the Trenthan Boiler). This boiler will burn almost any kind of fuel and refuse most economically, and at the same time maintain its powerful heating capacity with but little attention. These are premier properties necessary in all hot-water boilers. With ordinary care this boiler will last a lifetime. I may state that I know many of these boilers that have been working for upwards of twenty years and are apparently none the worse for their many years' wear and tear, for they continue to give the greatest satisfaction. *P. R.*

—— In reply to "Yorkshireman's" inquiry, we may say that we put down a horizontal tubular boiler last season, and as far as our experience goes it is far the best for economy and efficiency we have yet seen. It is now heating three of our largest houses, viz., 100 feet by 30, 100 feet by 24, and 100 feet by 12, replacing other boilers and doing the work better, and with certainly not more than two-thirds of the fuel. The boiler is 18 feet in length, and is an adaptation by Messrs. Foster & Pearson, of Beeston, of the one now used by several of the chief London market growers. There are, however, several important improvements which obviate the danger of breakage through unequal expansion and contraction (the great drawback in the earlier forms), but which can scarcely be explained in a short note; but we shall be pleased to send "Yorkshireman" a drawing if he will forward his address, or to the Editor, if he thinks it worthy of publication. *J. R. Pearson & Sons, Chilwell Nurseries, Notts.* [Please send it. Ed.]

[A very fine sample. We do not know of more than one, but doubtless individual plants vary. The white variety was, we believe, a seedling from the red. The plant is a native of Chile, and all but hardy. It stands the smoke of the copper furnaces in its native country better than any other plant. Ed.]

Hollyberries.—There seems to be in favoured localities a very good crop of Hollyberries this year, but I think they are, in spite of the beautiful summer we have had, later in ripening than usual, as, but a week since, even on trees literally laden with the fruit, it was still so green that it did not catch the eye till sought for. Perhaps the drought kept fruiting in check. In any case, we have often seen plenty of ripe or really well-coloured Holly berries early in October. Perhaps the cold spring held the bloom in check, and it was later than usual. Certain it is, that destruction of Holly bloom by frost must be a rare occurrence, and blank fruit seasons are doubtless more often due to the need for rest on the part of the trees than by climatic injuries. The older and leaner the bushes the more fruitful do they seem to be. *A. D.*

Apples in Scilly.—The Scilly orchards hardly ever have bad years. The trees are dwarfed and a thick fence or hedge is always planted round for protection from wind. Mr. Blackmore in *Mary Anerley* has an apt simile of a man getting to the east end of a south wall in the month of March and quickly making up his mind that he had no pressing business round the corner. But in Scilly when the wind is at

its height business of any kind out-of-doors has to be suspended. The sorts grown most are the old-fashioned Codlins and Pearmains, and a peculiarly sweet and colourless medium-sized variety locally yclept "Box Apple." In the Tresco Abbey gardens there is a good assortment of varieties, and the fruit are first-class both in appearance and quality. Ribstons, Red Astrachan, Blenheim Orange, Cellini, Irish Peach, Cornish Aromatic, and Lord Suffield are admirably adapted for the light but rich sandy soil of the islands. *C. A. M. C.*

Graft Sport on Black Hamburgh Vine.—I alluded to a case of sporting on a Vine of this variety, at the large Grape growing establishment of Mr. Sweet, Leyton. The facts of the case are these: Two Vines were planted near to each other, one a Hamburgh and the other a Gros Colmar. The last-named variety was inarched on the Hamburgh, but was ultimately cut off again, leaving the lower part of the Gros Colmar stem still attached to the Hamburgh. Presently a growth started from the Hamburgh stem a foot below the union of the graft, with the Gros Colmar foliage and wood, now it is in fruit which sets all doubt at rest, as it is Gros Colmar fruit. I have no doubt that Mr. Sweet would be pleased to show this Vine to any one interested in such a peculiar instance. *J. Douglas.*

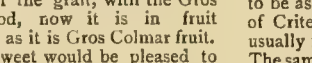
Weather Effects on an Oak Tree.—I sent you last April a note in which I described the curious effects of frost upon a large Oak tree here, resulting in the destruction of all the bursting buds round the sides of the tree, but leaving the top quite untouched; thus we saw a big tree with a green head, but with body, as it were, comparatively nude, yet blackened. Of course Nature soon forced new growth on these side branches, and presently the tree, assumed its wonted summer garb. Now is seen another result of the frost. All round the sides of the tree just where the frost in the spring destroyed the early leaf-buds, the foliage has browned early and is fast falling, whilst the head that was left unhurt in the spring is still green and vigorous. The injured sides are probably some 40 or more feet in depth of bough, and to that line the frost seems to have risen around the tree, but no higher. The present state of things serves to show how far-reaching are frost effects. Most persons would have concluded that late spring foliage would have resulted in equally late foliage in the autumn. *A. D.*

Layering the Quince.—This is an operation in horticulture which is practised in several ways in different countries. The object usually intended is the production of young plants for grafting or budding uses, or for plants to be grown on as fruit trees or bushes on their own roots. The method here described is practised in French and German gardens with the best results. Quince stools are allowed to grow for several years till a considerable amount of growth has been made, then in the spring or autumn the stems are sawn through at about a foot or a foot and a-half from the soil; and in July, when the young growths, which should have been thinned of the weakest by cutting them clean away at the stem, have attained a half-ripened condition, the stock and shoots are mounded over, the shoots being covered with mould to a depth of 6 or 8 inches from their bases. This mound ought to be made without precipitous sides, and should be rounded or flattish above. Owing to its being elevated over the general level, and also to its being kept in a moist state, by occasional watering in dry weather the shoots rapidly form roots. These can either be taken off in the autumn and lined out to gain strength by a season's growth, previous to planting in the quarters where they are to be grafted or budded; or if they should be weak, left on the stool for another summer. The first method is the better one, if the roots are in proportion to the height and strength of the shoots. Two or three year old Quince shoots that are frequently found growing from the base of old trees, can likewise come under the same treatment as regards mounding up; but the rooting will not take place, except under favourable conditions, in less than two seasons. But then a good-sized plant is obtained by this method, which may be worked or grown on after severance from the parent tree. The Quince should be more commonly grown, as it is usually an abundant bearer in southern shires, making a toothsome marmalade and jelly, as well as a flavouring ingredient in Apple and other pasties, The tree is also a pretty object when in bloom, and can be planted with advantage in the pleasure-ground. *X.*

The Vine: Influence of Stock on Scion.—Without in any way wishing to restate well known facts, or to detract from anything previously written, I think the question may be fairly asked, What variety, when employed as a stock, produces the least variable results in the character of the fruit of a second variety when used as a scion? To this I think there can be but one reply if the answer is based upon well founded experience, viz., Black Hamburgh; but this remark is not intended to imply that that variety when employed as a stock never does or will alter the characteristics of any other variety. I do not myself know of a single case tending in this direction, still there may have been some, and if any of your readers are acquainted with any, may I ask them kindly to record the fact in your columns, and at the same time to give the name of the variety so altered? Muscat of Alexandria is also a variety which may as a rule be depended upon when employed as a stock, indeed many regard it as being equally good as the first-named. All strong, as well as weak constitutioned varieties, are very unreliable when used only as a stock for some other kind to grow upon, and are best left alone for such a purpose. *J. H.*

Tomatos.—A friend in the States sent Mr. Brighton, the gardener at Mount Edgcumbe, a collection of forty varieties of Tomatos. These he has been growing on wire netting, in the early vineries. Hathaway's Excelsior and Vick's Criterion seemed to be as good as any of the red varieties. The fruit of Criterion were finer and deeper in colour than it usually is; perhaps it has deteriorated in England. The same verdict is pronounceable upon those growing out-of-doors and ripening to perfection early in September. Of the pale varieties, Green Gage and a variety which I think is not in English nurserymen's lists, called White Apple, are far and away the best. This latter bears its fruits in very large clusters somewhat like a bunch of Muscadine Grapes. It is medium sized and of a most delicious and taste aftertaste. Growers would do well to get seed now and again direct from America, and should certainly try Livingstone's Prolific, a most popular variety round the "Hub of the World." *C. A. M. C.*

Hot-water Pipes.—Having for a number of years studied the question of economically heating incubators and chambers for hatching germs, I have been obliged to give a great deal of attention to the subject of boilers and hot-water pipes. The experience gained was always in favour of a reduction of the quantity of water, and an increase of heating surface. Working on in this direction I arrived at the result of a half annular pipe instead of the usual system of annular piping. These half annular or



"crescent" pipes, as I have called them, are somewhat on the principle of a saddle boiler, and the small heating apparatus which I have as yet constructed on this principle have fulfilled my most sanguine expectations. A 7-feet length of ordinary 6-inch annular piping contains 8½ gallons of water, whereas my crescent pipes, same length and same heating surface, contain only 5 pints of water. The obvious economy of heating power is a great gain, as it enables me to make heating apparatus sufficiently powerful for any small-sized greenhouse; this can be worked by an oil lamp, costing from 9*d.* to 1*s.* 6*d.* per week, according to number and length of pipes. So many amateur gardeners object to the trouble attendant upon coke or coal furnaces that I get constantly asked for such a heating apparatus. Again, the action of the heat is so rapid that no time is lost, and the quantity of water required to be heated is, as before described, very small in proportion compared to that necessary for heating an annular pipe. Another advantage to be gained by these pipes is that at the unions the pipes can be reversed, and they form excellent evaporating tanks for water where moisture is required. I may say that it is the opinion of manufacturers experienced in hot-water piping that this form is very likely to become general, in hothouses at any rate. Lengths of these can easily be inserted with the ordinary circular pipes. *Thos. Christy.*

Tomatos in the Open Air (*Gardeners' Chronicle*, Oct. 25, p. 530).—It is our practice annually to sow our Tomato trials at Tooting when sowing Beet—that is, in May—and in due course to thin out, and when the fruit is set we cut out the leading shoots and lateral growth, then support the plants with stakes. When the fruit has attained sufficient size gather and spread out on a spare light, and over the fruit another spare light, and as the Tomatos change colour use. We do not remember on any one year failing to have a good crop; we may further add no trouble has ever on any one occasion been taken to select a favourable aspect. *Barr & Son.*

Gumming Roses.—At our last show a case of gumming Roses was discovered, and after the exhibitor had prevaricated and then confessed, he was unanimously disqualified. Afterwards, at his earnest solicitation, it was resolved to obtain an opinion from the National Rose Society, and to reconsider the resolution of disqualification if necessary. In order that this position shall appear quite clear the concluding paragraph of the case sent by us is given—"The committee of the National Rose Society are, therefore, asked their opinion upon the practice of gumming, and to give it their official approval or condemnation." To our utter astonishment, after waiting some months, we received from the hon. secretary a "decision" that the exhibitor was not disqualified, and that the medals had been sent to him. To this treatment the committee decidedly object, and have protested. Until this time we had thought the National Society represented the English rosarians, but this extraordinary action led us to doubt whether it was really a representative body. We therefore addressed a letter to about thirty of the leading Rose growers in England, and are not a little pleased to find that they strongly condemn the practice and award disqualification as the punishment, exactly as we did, and exactly as the National Rose Society did not do. As this is by no means an unimportant question, perhaps you will find room for a few of the opinions we have received:—

Messrs. Cranston & Co., Hereford.—"Gumming Roses for exhibition is decidedly illegal, and would not be tolerated by our National Rose Society. Any person found guilty of such a dishonourable practice should be excluded from exhibiting at any future shows."

Mr. Bruce Findlay, Royal Botanic Gardens, Manchester.—"I have to say that I consider such a proceeding altogether unsound, and if we found out any person guilty of such a practice he would not be allowed to exhibit again at our exhibitions, and I should be inclined to label him a trickster."

[Then follow letters to the same effect from several of our leading Rose growers.] This chorus of approval of what we have done, by gentlemen of "light and leading" in the Rose world, reads queerly enough by the side of the uncalled for "decision" given by the National Rose Society. However, if our action and the opinions we have elicited result in producing a healthier understanding upon the subject, our labour will not have been in vain. Pending other proceedings, the holder of the medals is welcome to any "honour" or gratification to which their temporary possession may entitle him. For ourselves we have to say that we have disqualified him for ever, and have severed our connection with the Society which sustains him in his highly questionable claim and sanctions his more than questionable conduct. *A. Johnson, Hon. Sec. Leek Rose Society, Oct. 28.*

Anent Apples.—At Mount Edgcumbe, where the kitchen garden, in the form of a series of walled-in rectangles, occupies the sides and bed of a valley, there is this season an abundant supply of Apples. Imprimis, the Ingestres were abundant, and first-rate in quality for early Apples. Lord Burleigh and Cornish Gilliflower, generally very shy bearers, do not bear that imputation there. How easy it would be to rhapsodise on the taste of the Cornish "Sauvageon." Two favourite varieties and enormous bearers are Smith's Pippin and Monster Pippin. The Kibstons get spotted, but not so Cox's Orange. The unnaturally large size of the fruit of the latter would open even Mr. Haycock's eyes. This short note is intended to point the moral that [some] valleys make good orchard grounds, especially now-a-days. *C. A. M. C.*

Onions.—If an unsavoury vegetable to some people, at least the Onion is both wholesome and popular. If any one could succeed in raising a kind that was at once devoid of those distressing effects upon the eyes of cook-maids, and of even more objectionable effects upon the breath of those who have consumed them, we should no doubt find the Onion to possess a wondrous popularity. Perchance were these unpleasant characteristics eliminated the value of the Onion as a flavouring vegetable might be very materially deteriorated, and hence we should gain little and lose much. It is a common jest with a working man that because he has a raw onion with his bread and cheese, he is a partaker of a hot dinner. Happy indeed are those whose lot, if hard, yet enables them to regard their lack of luxuries in so philosophical a spirit. We hear there are few in more polished circles of society who would care to flavour a moderate meal with a raw Onion; even the mildest of Tripolis or Roccas will leave behind the true Onion smell, and a very nasty one it is. Breath composed chiefly of alcohol and stale nicotine, highly flavoured with Onion, is about the most obnoxious compound ever exhaled from the mouth of man. But even epicureans who are not of the most fastidious order will admit that Cucumber sliced thin and assisted with pepper, salt, and vinegar, if a rather dyspeptical dish is not rendered more so if associated with thinly sliced Tripoli Onion. Without doubt the Onion adds some additional piquancy to the dish, and a little compromises the indigestible nature of the Cucumber. On the other hand the stimulating compounds do materially compromise the effluvia of rather let us say aroma of the Onion, hence the combination is not utterly bad, even if it be not absolutely good. But baked and stewed Onions are grand

dishes for those who like them, succulent, pleasant and wholesome. The greater heat has abstracted the natural heat of the vegetable, and with that has gone the perfume, whilst the wholesome and nutritive properties remain. Big Onions stew and bake well, and if served up with condiments and melted butter they are not to be cried over, and certainly may not be sneezed at. There is a proverbial fondness for Sage and Onions, if only stuffed into the body of a certain carcase of bone and skin called goose, and thence done to a turn by proper roasting and basting with fat. A popular error is that the Sage and Onions constitute stuffing or flavouring for the goose, real experience shows that the goose simply helps to flavour the stuffing, which is after all about the only edible portion of the roast. Onions sliced and fried with calf's liver or other strong meats need the stomach of an ogre to thoroughly render justice to. Still if this be so there must be many ogres walking our earth for the dish after all finds high favour in many quarters. To descend to plain matter of fact, the Onion is really most favoured as a flavouring vegetable, whether in soups, broths, stuffing, stews, or other food compounds, and in many and various ways is so largely employed that it is in great request and forms an important and, we trust, a very profitable article of commerce. Even yet there remains one very favourite use for Onions, and that is as picklers. Only those familiar with the trade are aware of the immense quantity that is in this country annually grown for this special purpose. Pickled in salt they are afterwards scalded with boiling vinegar flavoured with spices and then bottled for home and foreign consumption. Pickled Onions proverbially assist the English husband to dine or sup sumptuously upon his national dish—cold mutton. This description of meat forms our staple article at the dinner-table, and for that reason there is ever an abundance of it cold in the larder. English cookery is of so crude a kind that we know of but one later method of serving up the mutton warm, and that is in the form of hash—literally a hash ; and as that may, indeed does become somewhat monotonous to both bachelors and Benedicts, and to serve the mutton up cold is so simple and easy, the welcome pickled Onion helps to give to the otherwise dry and non-tempting meat a savoury adjunct. Hence the enormous consumption of pickles in this country. Gardeners as a rule entertain the opinion that the best, and, indeed, only fit sort of Onion for pickling is the little Silver-skin. The great pickling houses, however, are of different opinion, and go for the white Spanish or Reading, the bulbs being so grown that they never exceed the usual Silver-skin size. These popular kinds would produce thrice the quantity on a given area that the Silver-skin will. Something might have been said, too, about the uses of Onions when in a young state, for vast quantities of these go into market both in spring and autumn, though most largely in the early season. Though still then full of the peculiar flavour of its kind, eaten with Lettuces and other salads, and with the usual condiments, these young plants find exceeding favour, as our market growers know to their profit. It will thus be seen that the uses of the Onion are many, that it has more than one season of such usefulness, that it is in many ways a wholesome and valuable vegetable, and may be found amongst other features of interest to possess in a large degree elements of beauty that all may discern when the pickled bulbs contend for prizes on the exhibition table. As ordinary nomenclature goes, it is not at all difficult to make a dozen kinds, so-called, out of one standard sort, for which with Exhibitions, Improved, Heros, and other pet appellations, a really good selection of White Spanish or Reading has to do heavy duty. Still we have some very distinctive kinds in cultivation, apart even from the huge Italian kinds, the which no doubt find exceeding favour with those who love big 'uns—a weakness that certainly does not limit itself to Onions only. The Pinesfield has the merit of being a very fine, handsome, keeping Onion, flat, rounded, large, and having a darkish brown skin. Rousham Park is so far perhaps the finest selection yet seen of the Spanish type, though perhaps its examples owe something to superior cultivation. Cranston's Excelsior is a little known variety that much resembles a once famous kind, James' Keeping, but is larger and perhaps rather less pointed. Both these kinds rank amongst our best keepers, and that is an excellent feature. Bedfordshire Champion is another solid kind that has a high reputation in the county which gives it its name. Naseby Mammoth, Nuneham Park, Banbury, all come out of the White Spanish family ; and Danvers' Yellow, though assumed to be a distinct kind, yet needs much looking at ere the distinctive features are found. The Blood Red finds little favour amongst cultivators, but it is a solid keeping kind, and useful in times of scarcity. The Queen and the White Naples are useful as early ripening kinds. There can be little doubt, however, that the White Spanish still remains the most popular and most largely cultivated of any kind of Onion in the kingdom. *A.*

Reports of Societies.

Royal Horticultural: FRUIT SHOW, *October* 28, 29, *and* 30.—This, the last of the big shows of 1884 at these gardens, closed the season there with great *éclat*, as the exhibited fruits were not only numerous, but were generally of great excellence, especially those which came from our southern and south-eastern counties. The northern, midland, and Scottish exhibits were not many, still, some good things were to be observed amongst them. It was thought by many who had seen the immense concourse of Apples last autumn at Chiswick that this last show of this fruit was even more attractive than that, owing to the fineness of the samples, which in a manner counterbalanced the comparative paucity of numbers. At the Congress fruits had been sent with the object of getting the nomenclature settled, hence the specimens could not in all cases be selected from fine or from what may be called exhibition fruit.

Several of our well known nurserymen contributed capital displays of fruits of their own growing, gathered, in the majority of instances, from young trees, in the nursery quarters, and therefore not getting more attention in the matter of culture than the bulk of the trees, or rather bushes—an undeniable argument against allowing old orchard trees to encumber the ground.

COLLECTIONS.—For the best collection of Apples, not exceeding 100 varieties, open to nurserymen only.—1st, Messrs. Lane & Son, Great Berkhamstead. In this first-class lot were particularly fine examples of Mère de Ménage, Lord Grosvenor, Warner's King, Frogmore Prolific, Emperor Alexander, Stirling Castle, Lady Henniker, Peasgood's Nonsuch, Ecklinville Pippin, Grenadier, Blenheim Orange, Queen Caroline, Cheshunt Hybrid, Fearn's Pippin, and Dutch Mignonne. 2d, Messrs. G. & J. Lane, St. Mary's Cray, Kent—a collection but little behind the winner, and which contained many kinds that quite failed to appear in any other—Hoary Morning, Loan's Pearmain, Maynard's Bearer, Saville's Seedling, Royal Codlin, New England Winter Queening, Colonel Vaughan, being amongst their best fruits. The 3d prize fell to Messrs. G. Bunyard & Co., Maidstone. In this class Messrs. Rivers & Son, Wheeler & Sons, and Cheal & Sons, showed good collections.

AMATEURS' CLASSES.—In the amateurs' class for the best fifty Apples, dessert and culinary, 1st, Mr. C. Haycock, gr. to Roger Leigh, Esq., Barham Court, Kent, who showed some of the best looking fruit in the show — some of these being Calville Rouge, a showy, crimson, sure cropping kind ; Beauty of Kent, Belle du Bois, Melon, Reinette de Caux, Peasgood's Nonsuch, Cornish Aromatic, Hanwell Souring, Dumelow's Seedling, Blenheim Orange, Dr. Hogg, Pine Golden Pippin, and Belle Josephine. 2d, Mr. Ford, gr. to W. E. Hubbard, Esq., Leonard's Lee, Sussex, who showed also a well grown lot of fruits, the sorts—Hoary Morning, Wadhurst Pippin, Norfolk Beaufin, and Alfriston—being amongst some of the best. Mr. Goldsmith, The Gardens, Hollanden, Tonbridge, was 3d—Warner's King, Blenheim Orange, Josephine, Catshead, Lord Derby, and Mére de Ménage being some of his best dishes. Mr. Evans, gr., Lythes Hill ; Mr. A. Waterman, gr., Preston Hall ; and Mr. Gilmour, gr., Seacox Heath, all showed in this class. The only winner of a prize for fruits out of northern and midland counties was Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derbyshire, who obtained a 1st prize for a nice collection for that part of the country, many of which were remarkable for high colouring and size. Scotland also was awarded one prize, that went to Mr. W. King, Dalzell's Gardens, Motherwell, the fruits in most instances being small and misshapen—an evidence of unsuitability of the sorts to the climate.

FOREIGN APPLES. — The class for fruits from France and the Channel Islands contained no entry, but of American exhibits there were several, sent by Mr. J. B. Thomas, of Covent Garden, London, and by the Nova Scotian Packing Company's agents, Messrs. Northard & Lowe, Cotton's Wharf, London. These consisted of a few kinds now in season, viz., King of Tomkins County, Gravenstein, Ribston, Pinnock, Red Baldwin, &c.

Not for competition were about 100 dishes of well-grown kinds of Apples from Messrs. J. Veitch & Sons, Chelsea ; thirty-six dishes of Apples from Messrs. W. Paul & Son, Waltham Cross ; and five dishes of the same fruit from Mr. T. Ford.

COOKING APPLES.—For the best twelve varieties of culinary Apples, Mr. Charles Haycock, gr. to Roger Leigh, Esq., Barham Court, Tunbridge Wells, was 1st, he having the following sorts in his collection :—Mère de Ménage, Belle Dubois, Reinette, Tres Tardive, Warner's King, Lord Derby, Reinette du Canada, Peasgood's Nonsuch, Blenheim Orange, Dumelow's Seedling, Dr. Harvey, Stone's Apple, and Bedfordshire Foundling—all nicely finished, clean fruit. Mr. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, was 2d : his collection contained the following :—Mère de Ménage, Lord Derby, Brabant Bellefleur, Stirling Castle, Warner's King, Tower of Glamis, Blenheim Orange, and Waltham Abbey Seedling. Mr. Goldsmith, gr., Hollanden, Tonbridge, was 3d. In the class for six culinary kinds there were nine entries of high merit, so much so that the judges awarded an extra prize : Mr. C. Ross, gr. to C. Eyre, Esq., was 1st ; Mr. C. Haycock, gr. to Roger Leigh, Esq., 2d ; Mr. J. Goschen, Hawkhurst, and Mr. J. Walker, Thane, Oxon, extra. In Mr. Ross', were Mère de Ménage, Brabant Bellefleur, Blenheim Orange, Peasgood's Nonsuch, Lane's Prince Albert, and Annie Elizabeth ; in Mr. Haycock's, Lord Derby, Belle du Bois, Blenheim Orange, Mère de Ménage, Reinette de Caux, and Reinette du Canada ; in Mr. Goschen's, Striped Beaufin, Warner's King, Waltham Abbey Seedling, Hoary Morning, Bedfordshire Foundling, and Blenheim Orange ; and in Mr. Walker's, Catshead, Mère de Ménage, Hoary Morning, Blenheim Orange, Cellini, and Hanwell Souring.

DESSERT APPLES. — For the best collection of twelve varieties of dessert Apples Mr. Rutland, gr. to the Duke of Richmond and Gordon, was 1st, the sorts being Scarlet Pearmain, Ribston Pippin, Penninton's Seedling, Lewis' Incomparable, Cockle Pippin, Adams' Pearmain, Melon Apple, Nannie, Cox's Orange Pippin, Yellow Ingestre, Nonpareil Golden Russet, and King of the Pippins. Mr. Haycock was awarded the 2d prize. In this collection were fine fruits of Cox's Orange Pippin, Melon Apple, King of the Pippins, White Nonpareil, Brownlee's Russet, Ribston Pippin, Mother Apple, Cornish Aromatic, Ross' Nonpareil, Margil, Reinette Franché, and Cornish Gillyflower ; 3d, Mr. Ross—Northern Spy, Blenheim Orange, Scarlet Admirable, Crimson Queening, King of the Pippins, Gravenstein, Cox's Orange Pippin, and Welford Park Nonsuch being his best specimens. Mr. Ford's lot contained fine examples of Winter Pearmain, Blenheim Orange, Cox's Orange Pippin, Dutch Mignonne, Golden Reinette, Ribston Pippin, and Cornish Gillyflower. For the best six varieties of dessert Apples, Mr. Goldsmith, gr. to P. C. Hardwick, Esq., was 1st, his kinds being Blenheim Orange, Ribston Pippin, King of Pippins, Fearn's Pippin, Cox's Orange Pippin, and Scarlet Nonpareil. Mr. Haycock was 2d, his Cox's Orange Pippin, Ribston Pippin, and Mother Apple being very superior fruits ; Mr. Rutland was 3d, the varieties Adam's Pearmain, Cockle Pippin, Ribston Pippin, Cox's Orange, and King of the Pippins being the best. There were for this competition thirteen collections in all.

For the heaviest Apple, six to be shown, Mr. F. Rutland, gr. to the Duke of Richmond and Gordon, 1st, with Gloria Mundi, 7 lb. ; Mr. J. Walker, Thame, Oxon, 2d, with Mère de Ménage, 6½ lb. ; Mr. J. Fincham, Nacton House, near Ipswich, 3d, with Warner's King, 6 lb. 2 oz. Amongst other varieties Blenheim Orange was exhibited in fine condition by Mr. Evans, gr. to J. S. Hodgson, Esq , Lythe Hall, Haslemere.

For the best flavoured Apple, six fruits to be shown, Mr. A. Waterman, gr. to Hon. H. A. Brassey, was 1st, with Cox's Orange Pippin ; Mr. Haycock was 2d, with Cox's Orange Pippin ; Mr. S. Ford 3d, with Ribston Pippin. In this class it was interesting to note that of the eighteen dishes six were Cox's Orange Pippin, five Ribston Pippin, and two Margil.

PEARS.—For the best six dishes of Pears Mr. Haycock was 1st, with splendid Pitmaston Duchess, Duchesse d'Angouléme, Doyenné du Comice, General Todtleben, Passe Crassane, Conseiller de la Cour ; Mr. Goldsmith 2d, his Beurré Diel, Doyenné du Comice, Beurré Superfin, Conseiller de la Cour, Beurré Hardy, being fine fruit. Mr. F. Rutland was 3d.

For the best six Quinces.—1st, Mr. G. W. Cummings, gr. to A. H. Smee, The Grange, Wallington ; 2d, Mr. S. Ford ; 3d, Mr. C. Ross.

Mr. E. M. Nelson, Hanger Hill House, Ealing, received a 1st prize for the only dish of Medlars shown.

Mr. C. D. Lee, Aylesbury, was 1st for a collection of Filberts ; H. Lane & Sons, Berkhamstead, were 2d.

MISCELLANEOUS EXHIBITS.—Mr. C. Ross was justly placed 1st with three splendid Smooth Cayenne Pines, which weighed respectively 8 lb. 12½ oz., 7 lb. 3 oz., and 6 lb. 15 oz.—Mr. A. S. Smith, Silvermere, Cobham, being 2d, with two bunches of Lady Downe's, two bunches of Mrs. Pince's (grown in house without heat), one dish of Beurré de Clairgeau Pears, and a dish of Blenheim Orange Apple. A very good lot of outdoor Grapes was exhibited by A. G. R. Trendale, Esq., 10, Coburg Place, Bayswater ; also a good stand of Gladiolus from Alex. E. Campbell, nurseryman, Gourock, N.B.

VEGETABLES. — These, having some nineteen classes devoted to them, naturally proved a strong feature of the show, and were of their kinds hardly less meritorious than were the Apples. That most of the classes called for single dishes only rather added to the interest of the competition, as the prizes were thus distributed over a larger area. Gourds in variety came 1st in the list of classes, and of large or unlimited collections there were but two, the most extensive one, which was placed 1st, coming from Mr. C. Osman, South Metropolitan Schools, Sutton, who had numerous fruits of not a large number of kinds, and most of these were small and devoid of beauty. The 2d prize lot came from Mr. Glen, gr. to Mrs. Montefiore, Worth Park, Crawley, Sussex, and if less extensive was not less varied in sorts, the samples being rather finer and better coloured. In the class for ten kinds Mr. Glen was 1st, having handsome and prettily marked samples of the mottled green and white custard, pear-shaped, warted, green and white rounds, and other forms. Mr. W. D. Cochrane, Fortune's Green, Hampstead, was 2d, having kinds legibly and correctly named, including a gigantic Mammoth Pepo, weighing about 140 lb.; the pretty Turk's-cap, the curious bicolor or half-yellow half-green Striata, or striped Pear, and other pleasing kinds. Mr. Osman here came 3d. The class for the largest specimen brought fine monsters of a total weight of hardly less than a quarter of a ton, and presenting material enough for making myriads of pies. The biggest, a huge Pepo, somewhat top-shaped, weighed 156 lb., and came from Mr. Cochrane; whilst another gigantic fellow, hardly less large, though more rounded in form, came from Mr. J. Brooks, Melrose Cottage, Forest Hill, and was placed 2d — Mr. John Marter, Acton Green, coming 3d, with a fine netted round kind.

There were eleven lots of Celery shown, each lot including six sticks; curiously enough, of these only one was a white kind. A fine clean sample of the London Market Red, put up in a flat bunch, as is the market rule, and sent by Mr. J. B. Thomas, Covent Garden Market, came 1st; Mr. J. Marriott, Skirbeck, Boston, coming next, with good sticks of Leicester Red; and Mr. J. H. Richards, Somerly Park, Hants, was 3d, with smaller but clean sticks of the same variety. Salsafy and Scorzonera, six roots of each, did not make an attractive class, but the samples were excellent, the best coming from Mr. J. Neighbour, Bickley Park, Kent; and the 2d and 3d best lots came from Mr. C. Ross, Welford Park Gardens, and Mr. Goodacre respectively.

There were eight lots of Parsnips, in sixes, shown, all the samples being fine, clean, and good. Mr. Haycock told plainly as to the fertile nature of his Barham soil by staging superb samples of the Hollow Crown, some 24 inches in length, tapering and handsome. Mr. J. Bloxham, gr. to Sir Phillip Duncombe, Bart., Bletchley, was 2d, with fine Student; and Mr. W. Meads, Beckett Park, Shrivenham, was 3d, with the same kind.

Carrots were well represented by fifteen bunches, nearly all the samples being Scarlet Intermediate. The best, a very handsome lot, though showing evidences of previous hard work, came from Mr. Davis, gr. to the Rev. H. Arkwright, Bodenham Vicarage, Leominster; Mr. W. Starke, gr. to the Earl of Ellesmere, Brackley, Northampton, was 2d; and Mr. Thomas came 3d, with a genuine market bunch, most of the roots having been rather hard pared in places.

There were also fifteen lots of six Turnips in bunches, the best—Whitestone, very even and handsome—coming from Mr. Waterman, Preston Hall Gardens, Aylesford; Mr. Bloxham having the 2d best lot, and Mr. W. Mead the 3d, both with the same kind.

Collections of Onions were instructive, as showing how little difference there is in some kinds: really, it is remarkable what powerful vision some persons must possess to discover the difference. This apparent similarity is, of course, most found in the White Spanish or Reading type. Mr. Wingrove, gr. to R. N. Byass, Esq., Rousham Park, Oxon, was 1st, with a neat lot of fine bulbs, that included Rousham Park Hero, Walker's Improved, and White Spanish, all much alike, also Sutton's Reading, and Nuneham Park, Finlay's "The Wroxton," Magnum Bonum, both fine egg-shaped Onions; Cranston's Excelsior, somewhat resembling them in form; Flat Tripoli, and others. Mr. Haycock came 2d with good Rocca, Globe Tripoli, Blood-red, Bedfordshire Champion, Deptford; Mr. J. Goldsmith, Hollanden Gardens, was 3d, his collection including Rousham and Nuneham Park, Reading Improved, closely resembling the others; and some smaller but useful kinds. In the single dish class Mr. Goldsmith showed a dish of fine Spanish type named Hollanden Park Hero; but that kind, curiously enough, was not in his collection. Here Mr. Wingrove was a good 1st, with grand handsome bulbs of Rousham Park Hero; Mr. Miles, Wycombe Abbey Gardens, coming 2d with that fine and distinct Onion Cain's Pinesfield, much browner than any other form; and Mr. J. Roberts, The Gardens, Gunnersbury Park, was 3d with very fine Giant Rocca.

One lot only of four heads of Cardoons was staged; these, some 3½feet in length and proportionally stout and finely blanched, came from Mr. C. Osman, and worthily took the 1st prize. Brussels Sprouts on stems or rather plants were not first-rate; the best, fairly straight stems, but the Sprouts not well clustered, came from Mr. May, gr. to Captain Le Blanc, Northam House, Barnet. Mr. Richards had the 2d best in rather dumpy stems of Veitch's Exhibition, the Sprouts rather too large; and Mr. W. Starke was 3d, with the Wroxton, that was as much like the preceding kind as two Peas.

Of three collections of Endive the best in six sorts came from Mr. Richards, who had admirably blanched Fraser's Broadleaved, and the Batavian, Digswell Prize, and Picpus, white, and green curled. Mr. J. Neighbour was 2d with almost similar kinds, and Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, Ealing, was 3d with a collection of a dozen kinds, but all badly blanched. Mr. Richards was again 1st with three heads, having the Picpus, admirably blanched; Messrs. Neighbour and Haycock coming 2d and 3d with Batavian. There was but one collection of Beet in six assumed kinds, the 2d prize being awarded; but in the class for three roots there were no less than twenty-nine lots, though not a few were coarse, whilst really none were of the best. Mr. Alfred Read came 1st with fairly good samples of Dewar's Northumberland, Mr. Mead following with Pragnell's Exhibition, and Mr. Marriot was 3d with Carter's Perfection.

Cauliflowers, chiefly Autumn Giant, were very fine, some eleven lots of three heads being staged. The best, of medium size and solid, were from Mr. Marriot; Mr. H. Woodward, Isleworth, coming next with fine solid heads; and 3d came Mr. Thomas, who had some monsters, though still firm and good. Skirret failed to put in an appearance, and indeed seemed to be an enigma to most gardeners, but we may mention that it is an old-fashioned root, not unlike the Parsnip, and is grown and cooked in much the same way. Mr. H. Deverill, Banbury, showed some fifty-six bulbs of what was described as a new Onion, though resembling a fine sample of Rousham Park Hero, or others of that type. This kind was raised by Mr. Neal, gr. to P. Southby, Esq., Bampton, Oxon, being the product of a cross between the Reading and imported White Spanish. The samples were all very fine and handsome.

The judges were Mr. Woodbridge, Sion House; Mr. Denning, gr., Londesborough Lodge; Mr. Breese, gr., Petworth; Mr. Miles, gr., Wycombe Abbey; and Mr. G. Bunyard, nurseryman, Maidstone.

Notts Horticultural and Botanical: *Oct.* 22.—A successful meeting was held at the Mechanics' Institute, under the presidency of Professor Blake, from the University College. Mr. C. L. Rothera, B.A., contributed a paper upon "Cross Fertilisation of Plants by Insects," illustrating it by diagrams, a large number of members being present. The display of plants, fruits, and flowers was extremely good. Mr. Anderson, Clifton Hall, brought fine examples of Pitmaston Duchess Pear (two fruits weighing 3 lb.), dishes of fine Blenheim Orange and White Transparent Apples; also a seedling white Grape, long and well shouldered, the berries oval, possessing a decided brightness, with a rich luscious flavour. The same exhibitor showed a single striped Dahlia, the centre of the petal orange, the outer segments a bright scarlet. Mr. German, Malvern House, several Orchids, including three plants of Oncidium prætextum alike in flower, but bulbs and general appearance of growth very dissimilar; O. crispum, with two spikes of thirty flowers each; O. ornithorrhynchum, well bloomed; a small piece of Cypripedium Spicerianum, with two flowers; C. Harrisianum, a cut spike with two blooms (is this usual?); a pair of Pleione lagenaria, and fine heads of Hedychium venustum. Messrs. Thacker, Minerva House, St. Ann's Well Road; Meadows, Rock House, Basford; Walker, Hardwick House, The Park; Edington, Woodthorpe Grange; Massey, Mapperley Hall, contributed choice collections of cut flowers. Mr. Collins, Elm Bank, fair examples of Queen Pines; and the Messrs Pearson, Chilwell Nurseries, a choice collection of selected Apples, fine in form and colour. Votes of thanks, which were accorded to Professor Blake and Mr. C. L. Rothera, B.A., brought the proceedings to a close. *T. E.*

TRADE MEMORANDUM.

BROMPTON COUNTY COURT.—"SMITH & LARKE *v.* W. JACKSON.—The plaintiffs in this case were Messrs. Smith & Larke, of Ashford Nursery, near Staines, who sued the defendant, Mr. William Jackson, of Blakedown Nursery, near Kidderminster, under a judgment summons for the recovery of £1 2*s.* 6*d.* for plants supplied in August, 1883. The defendant having paid 10*s.* into Court, pleaded inability to pay more, in consequence of a long illness, but promised payment of balance if time was allowed. Judgment:—Balance to be paid in thirty days."

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, OCTOBER 29, 1884.

Month and Day:	Barometer. Mean Reading Reduced to 32° Fahr.	Barometer. Departure from Average of 18 years.	Temperature of the Air. Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition. Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
23	29 75	+0.04	54.0	36.0	18.0	45 0	— 3.3	42.2	90	E. N E.	0 00
24	29.80	+0.08	52.0	35.0	17.0	43.0	— 4 9	40.8	92	E.	0.00
25	29.77	+0 05	52.5	35.5	17.0	44.9	— 2.6	40 8	75	S.S.E.	0.00
26	29.43	—0.29	53 5	43.0	10.5	48.3	+ 1.1	41.0	87	W.; N.W.	0.14
27	29 65	—0 07	52.5	40.0	12 5	47.0	+ 0.1	38.7	74	WNW	0.02
28	29.50	—0 23	60.0	43.0	17.0	50.7	+ 3.0	46.6	87	S.W.	0.13
29	29.96	+0 13	51.2	35.0	16.2	43 2	— 3.4	35 8	74	W.NW	0.00
Mean	29.69	—0 04	53 7	38.2	15.5	46.0	— 1.3	41.3	83	Variable.	0.29

Oct. 23.—Dense fog in early morning. Very fine day and night.
— 24.—Dense fog in early morning. Very fine day. Thin fog at night.
— 25.—Dense fog in early morning. Dull day and night.
— 26.—Rough morning; rain. Fine day and night; very windy.
— 27.—Very fine day and night; rough wind. The maximum temperature of this day took place at midnight.
— 28.—Rain in morning. Dull day; rough wind. Fine clear night.
— 29.—Very fine day; slightly overcast at times. Fine clear night.

LONDON: *Atmospheric Pressure.*—During the week ending October 25, the reading of the barometer at the level of the sea decreased from 30.39 inches at the beginning of the week to 30.27 inches by 3 P.M. on the 19th, increased to 30.41 inches by 9 A.M. on the 21st, decreased to 30.26 inches by 3 P.M., increased to 30.33 inches by midnight on the same day, decreased to 29.89 inches by 3 P.M. on the 23d, increased to 30.06 inches by midnight on the 24th, and was 29.88 inches by the end of the week.

The mean reading of the barometer for the week was 30.15 inches, being 0.05 inch lower than last week, and 0.26 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 60°, on the 19th, the highest on the 24th was 52°. The mean of the seven high day temperatures was 54°.5.

The lowest temperature was 35°, on the 24th; on the 19th the lowest temperature was 47°.5. The mean of the seven low night temperatures was 40°.5.

The greatest range of temperature in one day was 18°, on the 23d; the smallest was 8°.5, on the 21st. The mean of the seven daily ranges was 14°.

The mean temperatures were — on October 19, 53°.9; on the 20th, 48°; on the 21st, 47°.8; on the 22d, 49°.5; on the 23d, 45°; on the 24th, 43°; and on the 25th, 44°.9; of these the 19th and 22d were above their averages by 4°.4 and 0°.8, the rest were below by 1°.3, 1°.2, 3°.3, 4°.9, and 2°.6 respectively.

The mean temperature of the week was 47°.4, being 2°.9 lower than last week, and 1°.2 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 107°, on the 22d. The mean of the seven readings was 87°.7.

The lowest reading of a minimum thermometer with its bulb placed on grass was 28°.5, on the 25th. The mean of the seven readings was 34°.6.

Rain.—No rain fell during the week.

ENGLAND: *Temperature.*—During the week ending October 25, the highest temperatures were 62° at Truro, Bristol, Hull, and Leeds. The highest at Bolton was 54°.3, at Sheffield 58°, at Liverpool 58°.9. The general mean was 60°.

The lowest temperatures were 28°.7 at Cambridge, at Bristol 34°, at Wolverhampton 34°.5; the lowest at Plymouth was 43°.5, at Liverpool 42°.2, at Bradford 41°.4. The general mean was 38°.

The greatest ranges were 31°.3 at Cambridge, 28° at Bristol, 25°.1 at Wolverhampton; the smallest ranges were 13°.7 at Bolton, 16°.3 at Plymouth, and 16°.7 at Liverpool. The general mean was 22°.

The mean of the seven high day temperatures was highest at Truro, 60°, at Plymouth 58°.3, at Cambridge 56°.7; and was lowest at Bolton, 51°.8, at Sheffield 53°, and at Liverpool and Bradford 54°. The general mean was 55°.3.

The mean of the seven low night temperatures was highest at Truro, 48°.1, at Plymouth 47°.1, at Liverpool 46°.7; and was lowest at Cambridge, 39°.2, at Blackheath 40°.5, and at Wolverhampton 41°.2. The general mean was 43°.7.

The mean daily range was greatest at Cambridge, 17°.5, at Bristol and Blackheath 14°; and was least at Bolton 7°, at Liverpool 7°.4, and at Sheffield 8°.2. The general mean was 11°.6.

The mean temperature was highest at Truro, 53°, at Plymouth 51°.8, at Sunderland 49°.7; and was lowest at Wolverhampton 46°.8, at Cambridge 47°.1, and at Blackheath and Bolton 47°.4. The general mean was 48°.6.

Rain.—The largest falls were 0.29 inch at Bolton, 0.18 inch at Wolverhampton, 0.16 inch at Truro; the smallest falls were 0.01 inch at Plymouth and Nottingham. The general mean fall was 0.08 inch. No rain fell at Bristol, Blackheath, Bradford, or Leeds.

SCOTLAND: *Temperature.*—During the week ending October 25 the highest temperature was 60°.4, at Aberdeen; at Dundee the highest was 55°.8. The general mean was 58°.1.

The lowest temperature in the week was 35°.1, at Aberdeen; at Leith the lowest temperature was 42°.7. The general mean was 39°.6.

The mean temperature was highest at Paisley, 50°.9, and lowest at Dundee, 48°.6. The general mean was 49°.9.

Rain.—The largest fall was 1.39 inch, at Greenock, and the smallest fall was 0.01 inch, at Edinburgh and Leith. No rain fell at Glasgow or Dundee. The general mean fall was 0.28 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

CLEMATIS.—I shall feel obliged if any reader can inform me of the names of twenty-five of the best and most distinct varieties. *A.*

Answers to Correspondents.

AGAVE AMERICANA: *J. Page.* Could you send us particulars of height, length of spike, size, age, &c.?

BOOKS ON FERNS, ILLUSTRATED: *A. Hilton.* If on British Ferns, Mr. Thomas Moore's Handbook; and for exotic Ferns Mr. John Smith's *British and Foreign Ferns.*

CUCUMBERS: *C. B. Kitchen and Market Garden*, published at the *Garden* office, Southampton Street, Strand.

CYPRIPEDIUMS: *R. Crossling.* When plants have branched flower-stems it may be taken as evidence of extra vigour.

DISEASED PALM LEAVES: *F. E.* I cannot offer any explanation of these Palm leaves. When they are held up to the light the patches are transparent. We always take this as a proof of a leaf-boring larva, or something of the sort. A fungus patch is generally very opaque when held up to the light. If there is such a thing as a minute leaf-boring larva, peculiar to Palms, I should say it is that. *W. G. S.*

ENGRAVINGS: *C.* If you will look with a glass you will see that there is no outline, the effect being produced by gradations of shading. This is in accordance with Nature, and for purely artistic purposes is desirable; but in cases where definition is required the outline is essential.

ERRATUM.—Mr. G. F. Wermig writes to say that his name is not written with an *o*, as was done in our pages last week.

GODETIA: *J. S.* Pronounce as if written Godeetia.

HYACINTH AND INSECTS: *Pomologist.* The minute, white, glossy, globose mites on the diseased scales of the bulb are the same as are found commonly on decayed vegetable matter. They seem only to have attacked some portions of the outer scales, which may have been injured. Dipping the bulbs in gas tar-water, soapsuds, and quassia, would probably destroy the mites—heat certainly will.

MARKET GARDEN TENANCY: *W. S.* You should endeavour to come to some terms with the landlord and the incoming tenant. If you cannot do this consult a solicitor.

MR. BLAND'S ADDRESS.—If *Anxious Inquirer* will send hisaddress, we will forward Mr. Bland's to him privately.

NAMES OF FRUIT: *R. P. F.* 1, Yorkshire Greening; 2, Ladies' Fingers; 3, Northern Greening.—*G. H. Pears:* 1, Josephine de Malines; 2, Napoleon; 3, Passe Colmar; 4, Glou Morçeau. *Apples:* 5, Scarlet Nonpareil; 6, London Pippin; 8, Court of Wick.—*Pomologist.* 1, Lord Derby; 3, Rosemary Russet; 4, Mannington's Pearmain; 5, Gloria Mundi.—*W. Magee.* Raisin de Calabre.

NAMES OF PLANTS: *D. C., Dundee.* Phalaris canariensis; the Canary-grass grown in the Isle of Thanet as bird-seed.—*G. A. K.* 1, Plantago major; 2, Ranunculus acris. We had fourpence to pay for your parcel. The weeds are not quite so valuable.—*Jno. Trotman.* Quercus Phellos (the Willow-leaved Oak).—*C. W.* Pyrus Aria.—*H. A. H.* Phalaris arundinacea.

NATIONAL AURICULA SOCIETY: *Protest.* We have communicated with the Secretary.

ORCHID WEEVIL: *F. M.* The little black beetles bred in the stems of the Dendrobium are very similar in size, colour, and general appearance to our English weevil (Notaris acridulus); they differ from it, however, in several respects, and are most probably exotics, and inhabitants of Brazil. We should be glad to know the name and locality of the Orchid.

RED-FLOWERED CHESTNUTS: *W. S. Bisset.* These grow into fine round-headed trees, but do not reach the great height the common Horse Chestnut does.

STRAWBERRY PLANTS DYING OFF: *John Forbes.* We found neither insects nor fungus to account for the plants dying, but they appear to have been potted too deeply, and the crowns were much subdivided into a number of small ones. May the plants have got too much water? All Strawberries have not equally robust constitutions, and the Vicomtesse may not be one of the most vigorous.

THISTLE-DOWN: *M.* Doubtless the seed is carried by the down, but only for a short distance. If you will catch the next floating Thistle-down that comes in your way you will find it without seed—a balloon without its car. Since Mr. Bentham first drew attention to this, some years since, we have taken every available opportunity of examining these waifs and strays, and never once have seen the seed attached except in the near vicinity of the parent plant.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE:—*Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

W. CUTBUSH & SON, Barnet and Highgate—Stove and Greenhouse Plants, Hardy Shrubs, &c.
DICKSON & Co., Edinburgh—Forest Trees, Shrubs, &c.
EUGÈNE VERDIER FILS AINÉ, 37, Rue Clisson, Gare d'Ivray, Paris—New Varieties of Roses.
J. COCKER & SONS, Aberdeen—Roses.
SAMUEL BIDE, Farnham, Surrey—Coniferæ, Hardy Shrubs, Trees, &c.
BRUANT, Poitiers—Trees and Shrubs; Fruits.
ALEXANDER E. CAMPBELL, Cove Gardens, Gourock—Gladioli.
R. & G. CUTHBERT, Southwark—Roses, Fruit Trees, &c.
HEIENMANN, Erfurt—Novelties in Plants.
T. IMRIE & SONS, Ayr—Forest, Fruit, and Ornamental Trees, Shrubs, &c.

COMMUNICATIONS RECEIVED:—Cauliflower-fly from Faversham.—R. V. & Sons.—Apples from G. Busby, Bitterne, Hants.—Ditto from T. Mills, Loughborough.—Apple seedling from W. D., Reigate.—W. P. (next week).—Pomologist.—Ed. Tonks.—T. Haydon—A. Lyddiard.—Stuart & Mein.—Thomas Tonge.—C. Plowright.—J. Whitton.—R. P.—R. Fraser.—J. G. Baker.—H. T.—F. S.—John R. J.—R. McK.—J. S.—W. M. G.—J. D.—T. T., Colorado.—A. J.—Cornubia.—H. E.—W. E. B., Spyers Fund, £5 received.—T. C.—H. Hatch (£1 Gardeners' Benenolent, sent to the Secretary.—Dr. M.—C. M. O.—C. T.—M. Ward.—M. Massange.—W. Ross.—J. S. K.—Dr. Brandis.—T. H. R.—H. Correvon, Geneva.—A. Dubois, Paris.—Ugolino Mardelli, Florence.—R. Nixon, New Orleans.—H. C.

Markets.

COVENT GARDEN, October 30.

No alteration. Large importation of Nova Scotia and Canadian Apples at low prices. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Pine-apples, Eng., lb.	4 0-	5 0
Cobs, per 100 lb.	60 0-	62 6	Peaches, per doz.	8 0-	12 0
Grapes, per lb.	0 6-	4 0	Pears, French, doz.	1 6-	3 6
Lemons, per case	21 0-	..	Pines, St. Michael's, each	3 0-	6 0
Melons, each	1 6-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0-	4 0	Lettuces, Cabbage, per dozen	1 6-	..
Beans, French, lb.	0 6-	..	— Cos, each	0 2-	..
Beet, per doz.	1 0-	..	Marrows, each	0 2-	..
Cabbages, per doz.	1 6-	2 0	Mint, green, bunch	0 4-	..
Carrots, per bun.	0 6-	..	Mushrooms, p. baskt.	1 0-	2 0
Cauliflowers, English, dozen	1 0-	2 6	Onions, per bushel	4 0-	..
Celery, per bundle	1 6-	2 6	— Spring, per bun.	0 6-	..
Cucumbers, each	0 6-	1 0	Parsley, per bunch	0 4-	..
Endive, English, per dozen	1 0-	..	Radishes, per doz.	1 6-	..
Garlic, per lb.	0 6-	..	Seakale, per punnet	2 6-	..
Herbs, per bunch	0 2-	0 4	Small salading, per punnet	0 4-	..
Horse Radish, per bundle	3 0-	4 0	Spinach, per bushel	2 6-	..
			Tomatos, per lb.	0 6-	1 0
			Turnips, bun.	0 5-	..

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.* per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0	Lapageria, red, 12 blooms	1 0-	2 0
Arum Lilies, 12 blms.	3 0-	6 0	Marguerites, 12 bun.	3 0-	6 0
Asters, 12 bunches	4 0-	9 0	Mignonette, 12 bun.	1 0-	4 0
Azalea, 12 sprays	1 6-	2 0	Pelargoniums, per 12 sprays	0 9-	1 0
Bouvardias, per bun.	0 9-	1 0	— scarlet, 12 sprays	0 4-	0 6
Camellias, per doz.	3 0-	6 0	Primula, double, bun.	1 0-	1 6
Carnations, 12 blms.	1 0-	2 0	Roses (indoor), doz.	2 0-	6 0
Chrysanth., 12 bun.	3 0-	9 0	— (outdoor), 12 bun.	12 0-	..
— large, 12 blooms	2 0-	4 0	Stephanotis, 12 spr.	4 0-	8 0
Cyclamen, 12 blooms	0 3-	0 6	Tropæolum, 12 bun.	1 0-	2 0
Dahlias, 12 bunches	3 0-	6 0	Tuberoses, per doz.	1 0-	1 6
Eucharis, per doz.	3 0-	6 0	Violets, 12 bun.	1 0-	1 6
Forget-me-not, 12 bs.	2 0-	6 0	— French, bunch	1 0-	1 6
Gardenias, 12 blms.	3 0-	6 0	— Parme, Fr., bun.	3 0-	4 0
Gladiolus, various, 12 spikes	1 0-	..	Wallflower, 12 bun.	4 0-	6 0
Heliotropes, 12 sp.	0 6-	1 0	White Jasmine, per bunch	0 6-	1 0
Lapageria, white, 12 blooms	2 0-	3 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0	Ferns, in variety, per dozen	4 0-	18 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Ficus elastica, each	1 6-	7 0
— (common), dozen	6 0-	12 0	Foliage Plants, various, each	2 0-	10 0
Begonias, per doz.	4 0-	12 0	Fuchsias, per doz.	3 0-	6 0
Bouvardia, dozen	9 0-	18 0	Marguerite Daisy, per dozen	8 0-	15 0
Chrysanth., dozen	4 0-	9 0	Myrtles, per doz.	6 0-	12 0
Cockscombs, doz.	2 6-	4 0	Palms in variety, each	2 6-	21 0
Coleus, various, doz.	3 0-	9 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
Cyperus, per dozen	4 0-	12 0	Primula sinensis, per dozen	4 0-	6 0
Dracæna term. doz.	30 0-	60 0	Solanums, dozen	9 0-	12 0
— viridis, per doz.	12 0-	24 0			
Erica, various, doz.	9 0-	18 0			
Euonymus, various, per dozen	6 0-	18 0			
Evergreens, in var., per dozen	6 0-	24 0			

SEEDS.

WEDNESDAY: *October* 29.—There was a somewhat improved feeling on the market to-day as regards field seeds. There is a fair inquiry for fine samples of new English red Clover seed. Rathe lower quotations are received from America. A substantial advance in white Clover must be noted. For grass seeds the sale is slow. There is no animation in the trade for bird seeds. Finest blue Peas are becoming exhausted. Tares are unchanged. Feeding Linseed is firm. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday both English and foreign Wheats were unsaleable in quantity except at cheaper rates. The top price of town flour was reduced 2*s.*, or to 35*s.* per sack. Grinding descriptions of Barley were fairly steady. Beans were unchanged in value, but new Peas were offered at low rates, and the market was quoted 1*s.* down. Maize was scarce and firm. Oats were held for steady value, but the trade was slow.—On Wednesday there was very little doing in either Wheat or flour to try quotations, which remained nominally unaltered. Barley was dull. Beans and Peas sold in retail quantity at previous rates. Oats met only a moderate demand, but old corn was scarce and very firm. Round Maize was quiet, but some retail quantities of flat corn sold at irregular and fancy prices.—Average prices of corn for the week ending Oct. 25:—Wheat, 32*s.* 4*d.*; Barley, 31*s.* 9*d.*; Oats, 18*s.* 11*d.* For the corresponding period last year:—Wheat, 40*s.* 6*d.*; Barley, 35*s.*; Oats, 19*s.* 9*d.*

CATTLE.

At Copenhagen Fields on Monday trade was rather more cheerful than of late. Cattle realised firmer but not quotably higher prices. English sheep sold at full values; Swedish calves realised our top quotation, Irish selling at the lowest to rather over. Quotations:—Beasts, 4*s.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 3*s.* 9*d.* to 5*s.* 10*d.*; sheep, 4*s.* 8*d.* to 5*s.* 2*d.*, and 5*s.* 10*d.* to 6*s.* 6*d.*—Thursday's trade was quiet and steady. Both beasts and sheep realised full prices, although the demand was quiet. Calves were fully as dear as on Monday, and pigs were dull.

HAY.

Tuesday's Whitechapel Market report states that trade was very dull, especially for Clover, and hay supplies firm. Quotations:—Prime Clover, 95*s.* to 110*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 110*s.*; prime hay, 80*s.* to 92*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 36*s.* per load.—The Cumberland Market report states that there was a large supply of both Clover and meadow hay, with exceedingly dull trade at the prices stated, and not all sold. Quotations:—Clover, best, 98*s.* to 108*s.*; inferior, 50*s.* to 70*s.*; meadow hay, best, 80*s.* to 88*s.*; inferior, 50*s.* to 70*s.*; and straw, 28*s.* to 34*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that prices were steady for best samples, with fair demand, and trade otherwise dull. Quotations:—Kent Regents, 70*s.* to 80*s.*; ditto kidneys, 60*s.* to 70*s.*; Magnum Bonums, 50*s.* to 70*s.*; Victorias, 70*s.* to 80*s.*; and Champions, 50*s.* to 60*s.* per ton.

COALS.

The prices realised at market during the week were as follows:—East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 19*s.*; Hetton Lyons, 17*s.*; Lambton, 18*s.* 6*d.*; Wear, 17*s.*; Hartlepool, 18*s.*; Hulam, 17*s.* 3*d.*; East Hartlepool, 18*s.* 3*d.*; South Hartlepool, 17*s.* 3*d.*; Tees, 19*s.*

CYCLAMEN SEED—4 oz. for Sale from a selected strain. Low cash price for the lot, or per ounce, not mixed.
GOWERS AND EMBERSON, Florists, Walthamstow.

HYBRID RHODODENDRONS, fine plants, 1½ to 2 feet, all colours, 40s. per 100; Hardy AZALEAS, fine bushy, set with buds, 1 to 2 feet, 40s. per 100; CAMELLIA STOCKS, fine strong, 30s. per 100.
W. JACKSON, Blakedown, Kidderminster.

Helleborus niger—Christmas Rose.
A. RIEMSCHNEIDER, Brandenburg on Havel, near Berlin, begs to offer strong Clumps of the above at 8s. per 100, 70s. per 1000. Orders should be addressed to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

SMALL PALMS.—A few hundred splendidly grown, healthy SEAFORTHIA ELEGANS and LATANIA BORBONICA, 12 inches high, nicely furnished, 25s. per 100, 4s. per dozen.
The GARDENER, Holly Lodge, Stamford Hill, N.

TO BE SOLD, Cheap, 18 fine GARDENIA INTERMEDIA TREES, in 12-inch pots. Apply
J. W. SHEPHERD, 19, Waverley Street, Nottingham.

LILIUM AURATUM.—Magnificent Home-grown Bulbs. We are in a position to offer the above, of such grand quality as has seldom been seen, and differing altogether from the bulbs usually imported from Japan, which are always more or less depreciated by being packed for so long a time on the voyage. They are clean and plump to a degree which must be seen to be fully understood. Sizes varying from 10½ to 14½ inches in circumference. We also offer a fine lot of imported LILIUM AURATUM of first quality. Prices of the above on application to
HURST AND SON, 152, Houndsditch, London, E.

FOR SALE, for want of space, two large TREE FERNS, &c.
One DICKSONIA ANTARCTICA, in large tub; stem fully 3 feet, height 7½ feet, and about 7 feet across.
One ALSOPHILA AUSTRALIS, in large pot; stem about 2 feet, height about 7 feet. The above were placed out-of doors all summer, and fronds are a little discoloured.
One CLERODENDRON BALFOURII. Stands in pot about 5 feet, and is trained balloon-shape.
One BOUGAINVILLEA GLABRA. Stands in pot about 5 feet; trained balloon-shape.
To make room I will sell the above at half their value. For Price and further particulars apply to
E. J. JARMAN, The People's Seedsman, Chard.

CHARLES KERSHAW again offers his EARLY PARAGON RHUBARB. The Trade will oblige by inserting it in their forthcoming CATALOGUES, and he will be pleased to quote lowest Trade prices on application.
The Slead Syke Nurseries, Brighouse.

ONE HUNDRED THOUSAND Dwarf ROSES, on Manetti, fine, 23s. per 100, £10 10s. per 1000; 200,000 ASPARAGUS, Giant and Connover's, 2-yr., 10s., fine; 3-yr. very fine, 15s.; 4-yr., extra, 20s.—all at per 1000. MANETTI STOCKS, strong, for immediate working, 30s. per 1000. Cash with all orders. The best money can buy.
R. LOCKE, Royal Rose Farms, Red Hill, Surrey.

To the Trade.
TROPÆOLUM SPECIOSUM.
Seed Crop, 1884.
Price, very moderate, on application.
HOWDEN AND COMPANY, Inverness.

NEW PLANT AND BULB COMPANY
Colchester.
Special offer of NARCISSI.
Special offer of IRIS.
Special offer of GLADIOLI.
Special offer of JAPANESE LILIES.
Large, plump, and in splendid condition.

Established 1860.
J. V. REES (late Robert Parker), Hardy Herbaceous and Alpine Plants, DELPHINIUMS, IRIS GERMANICA, PHLOXES, POTENTILLAS, PÆONIES, &c. Selections of 100 showy varieties from 50s. The finest collection of Aquatics in the country
Exotic Nursery, Tooting, Surrey, S.W.

Hyacinths, Tulips, Crocuses, Narcissus, Lilies, &c.
BUDDENBORG BROS., BULB GROWERS, Hillegom, near Haarlem, Holland.
Wholesale CATALOGUE, Price Current of Dutch Bulbs, now ready, which will be mailed free on application.

CENTAUREA CANDIDISSIMA.—The most beautiful of white foliaged bedding plants—easily raised from seed, which is the cheapest way to obtain a stock. 1s. per packet (about 100 seeds), 2s 6d. per packet (about 300 seeds).
HOOPER AND CO., Covent Garden, London, W.C.

ROSES.—ROSES.—ROSES.—Forty choice Perpetuals sent on receipt of remittance for 21s.: purchaser's selection from 300 best varieties. List of names on application. Twenty choice Standards, or Half-standards, 21s.
JAS. WALTERS, Mount Radford Nursery, Exeter, Devon.

CŒLOGYNE CRISTATA ALBA.—The New Snow-white Cœlogyne. One of the most lovely of Orchids. Sizes and prices on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

FOR SALE, a large quantity of GOOSEBERRY BUSHES, LANCASHIRE LAD, 3-year-old, £5 per 1000.—Apply to J. J. NOY, Market Gardener, Clay Pond Road, Brentford, Middlesex.

For Sale.
LATANIA BORBONICA, 6 feet high and 8 feet in diameter. A fine specimen in small Oak tub. 18 inches high, and same diameter. For particulars apply to HORTUS, 34, Drapery, Northampton.

LILY OF THE VALLEY.—Clumps for forcing, the best ever offered, 18s. per dozen.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Fruit Trees, offered to the Trade by
HUGH LOW AND CO.
APRICOTS, Dwarf Maiden, 60s. per 100; £27 10s. per 1000.
,, Dwarf-trained, 24s. and 30s. per dozen; £9 per 100.
CHERRIES, Dwarf Maiden, 40s. per 100.
,, Dwarf-trained, 18s., 21s., 24s. per dozen.
,, 2-yr., feathered, 60s. per 100.
NECTARINES, Dwarf Maiden, 60s. per 100; £27 10s. per 1000.
,, Dwarf-trained, 24s., 30s. per dozen; £8 10s. per 100.
,, Standard Maiden, 36s. per dozen.
PEACHES, Dwarf Maiden, 60s. per 100; £27 10s. per 1000.
,, Dwarf-trained, 24s., 30s. per dozen; £8 10s. per 100.
,, Standard Maiden, 30s. per dozen.
PEARS, Dwarf Maiden, on Pear and Quince, 40s per 100.
,, Dwarf-trained, 21s., 24s. per dozen.
,, Pyramids on Quince, 50s, 60s. per 100.
,, 2-yr., feathered, on Pear stock, 50s. per 100.
PLUMS, Dwarf Maiden, 40s. per 100.
,, Dwarf-trained, 18s., 21s., 24s. per dozen; £7 per 100.
,, 2-yr., feathered, 50s., 60s. per 100.
The trees offered above are all of very fine quality.
Clapton Nursery, London, E.

1884—1885.

SEEDS AND PLANTS.

A. LIETZE,

Caixa 644, Rio de Janeiro, Brazil.

Wholesale Prices in German Marks.

	When Ripe.	100 Seeds.	1000 Seeds.
		Marks.	Marks.
Acrocomia cubensis	Sept.	20	..
,, sclerocarpa	Sept.	10	80
Areca lutescens	April	4	25
,, 5,000 Seeds, 100 marks			
,, 10,000 Seeds, 160 marks			
,, madagascariensis	June	4	20
,, rubra	Jan.	2	15
,, 5,000 Seeds, 50 marks			
Astrocaryum Airi	Nov.	15	120
Attalea speciosa	May	30	..
Bactris maraja	Nov.	6	40
Copernicia cerifera	Jan.	10	80
Desmoncus sp. Rio	May	10	..
Diplothemium candescens ..	March	15	130
,, maritimum	March	12	100
Elæis guineensis	May	12	100
Euterpe edulis	May	6	50
Geonoma gracilis	March	5	30
,, 5000 Seeds, 120 marks			
,, Schottiana	June	5	30
,, sp. Quéluz	June	8	60
Caryota sobolifera	irregular	6	40
,, urens	irregular	6	40
Cocos campestris	Jan	7	50
,, flexuosa	March	5	30
,, oleracea	Jan.	10	80
,, plumosa	irregular	5	30
,, 5000 Seeds, 120 marks			
Cocos procopiana	Nov.	20	180
,, Weddelliana	Dec.	7	55
,, 5,000 Seeds, 250 marks			
,, 10,000 Seeds, 450 marks			
Coffea arabica	May	2	15
,, yellow fruited variety ..	May	3	25
,, var. MARAGOGIPÉ ..	May	5	40
,, per bushel, 200 marks			
,, var. MURTA	May	5	40
,, per bushel, 160 marks			
Glaziova insignis	Dec.	8	60
Livistonia sinensis	Aug.	2	12
,, 5000 Seeds, 50 marks			
Maximiliana regia	Aug.	20	..
Oreodoxa oleracea	March	2	10
Pandanus utilis	irregular	3	20
,, 5,000 Seeds, 80 marks			
,, 10,000 Seeds, 150 marks			
Ravenala madagascariensis .	irregular	8	50
Philodendron bipinnatifidum ..	April	3	20
,, speciosum	April	3	[illegible]
,, 5,000 Seeds, 75 marks			
,, 10,000 Seeds, 120 marks			
Vriesia hieroglyphica	June	5	30

PLANTS.

ALOCASIA PORTEI, extra strong plants, a-piece, 20 to 40 marks.
,, PLUMBEA, strong plants, a-piece, 2 to 5 marks.
ALSOPHILA ELEGANS and EXCELSA, ½ to 1 yard high, each 10 marks. Stems without fronds.
ARECA LUTESCENS, 1 to 2 yards high, from the open ground, 400 marks per 100. Smaller bushy plants, 300 marks per 100. Packing and sea transit expenses increase the price from 60 per cent. to 100 per cent.
CALADIUM.—A special offer of my enormous tubers will be sent out in December.
CATTLEYA GUTTATA, fresh collected, 220 to 400 marks per 100.
,, HARRISONI, fresh collected, 220 to 400 marks per 100.
DRACÆNA TERMINALIS, stems, 2½ marks per metre.
GRIFFINIA HYACINTHINA, strong bulbs, 45 marks per 100.

The arrival of Seeds and Plants in good order cannot be guaranteed.

Above Prices are for Cash without Discount.

A. LIETZE.

Orchids a Speciality.
The stock at the Clapton Nursery is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

HUGH LOW & CO.
very cordially and respectfully solicit an inspection by all lovers of this interesting and beautiful class of plants, whether purchasers or not.
CLAPTON NURSERY, LONDON, E.

FREESIA REFRACTA ALBA.
Long white bell-shaped flower for early blooming. Very sweet scented. One of the most useful bulbs that can be grown. See our Bulb CATALOGUE, free on application.
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

SPIRÆA JAPONICA. — Splendid well-ripened crowns. Home-grown. Far superior to imported. Two and three years planted. Price on application to
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CALDWELL AND SONS are now offering the following from their unrivalled collection, and being grown in this exposed locality, and frequently transplanted, cannot fail to give satisfaction:—
AUCUBAS, fine, for Potting or Window Boxes.
CEDRUS DEODARA, handsome specimens, 2 to 6 feet.
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LARCH, stout and well rooted.
LAURELS in variety.
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AZALEAS, Indian and Ghent varieties, well budded, 18s. and 24s. per dozen.
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Single DAFFODILS.
Pheasant-eyed NARCISS.
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"Haud desinam donec perfecero."

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(Late of the THAMES BANK IRON COMPANY),

No. 4x, UPPER THAMES STREET, LONDON, E.C.

HOT-WATER PIPES	2-inch, 1*s.* 1*d.*;	3-inch, 1*s.* 7*d.*;	4-inch, 2*s.* 0*d.*	per yard.
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" " SYPHONS	2-inch, 2*s.* 0*d.*;	3-inch, 3*s.* 0*d.*;	4-inch, 4*s.* 0*d.*	each.
" " TEES	2-inch, 2*s.* 0*d.*;	3-inch, 3*s.* 0*d.*;	4-inch, 4*s.* 0*d.*	each.

A Liberal Discount for Cash to the Trade.

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NO IRON, ZINC, OR PUTTY USED.

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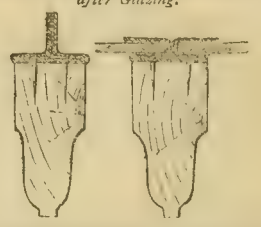
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N.B.—The Lead Strips, which are the special feature of this System, require no Skilled Labour to fix; breakages can be repaired by any one; and ALL OUTSIDE PAINTING IS DISPENSED WITH.

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UPRIGHT TUBULAR BOILER,
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The best Materials and Workmanship, at prices which, owing to their facilities, defy competition.
Three Medals awarded to Messenger & Co. by the Royal Horticultural Society, 1882. Plans and Estimates free on application.
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Price 3d., Post Free 3½d.

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COCOA-NUT FIBRE REFUSE,

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Truck-load of 2 tons 25*s.*, free on to rails; sacks, 1*s.* each; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.*; truck-load, loose, free on rail, 30*s.*; 15 sacks or more free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W. Established 1872.

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THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to
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TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included).
PEAT, best brown fibrous .. 4*s* 6*d*. per sack; 5 sacks for 20*s*.
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PEAT, extra selected Orchid 5*s*. 0*d*. ,,
LOAM, best yellow fibrous .. } 1*s*. per bush. (sacks included).
PREPARED COMPOST, best }
LEAF MOULD, best only .. }
PEAT MOULD ,, ,,
SILVER SAND, coarse, 1*s*. 3*d*. per bush., 12*s*. half-ton, 22*s*. ton
RAFFIA FIBRE, best only .. .. .. 8*d*. per lb.
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MUSHROOM SPAWN, finest Milltrack.. 5*s*. per bushel.
SPHAGNUM MOSS, all selected 2*s*. per bush., 6*s*. per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s*. each; 10 sacks, 9*s*.; 15 sacks, 13*s*.; 20 sacks, 17*s*.; 30 sacks, 25*s*.; 40 sacks, 30*s*. Truck-load, loose, free on rail, 30*s*. Limited quantities of G., special quality, granulated, in sacks only, 2*s*. each. Terms, strictly Cash with order.

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WEST FERRY ROAD, MILWALL, LONDON, E.

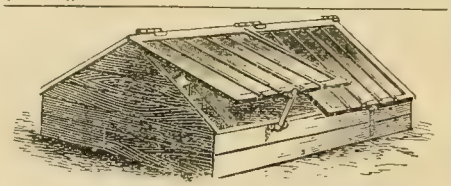
BEESON'S MANURE

Is the best for all Horticultural Purposes.
In Tins, 1s., 2s. 6d., and 10s. 6d. each; also in Sealed Bags, 1 cwt., 13s.
MANUFACTURED BY
W. H. Beeson, Carbrook Bone Mills, Sheffield.
Wholesale Agents in London: Corry, Soper, Fowler & Co., Limited, 18, Finsbury Street, E.C., and Shad Thames, London, S.E. Supplies can be obtained through all respectable Seedsmen and Florists in the Kingdom.
Pure Crushed Unboiled BONES, any size, for Vine Borders.

FINEST TOBACCO CLOTH and PAPER, at 8*d*. and 9*d*. per lb., 28 lb. 18*s*. Special quotations for the Trade.
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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s*., 3*s*., and 10*s*. 6*d*.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d*. and 1*s*. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.



PORTABLE PLANT FRAMES.

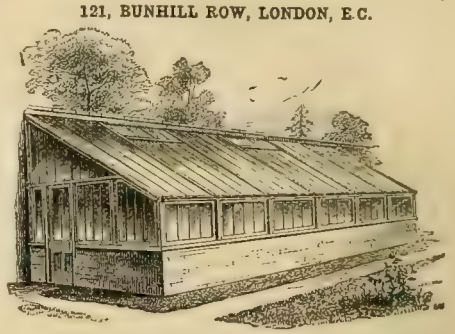
The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide, ,, ,, ,,	4	15	0
6 feet long, 5 feet wide, ,, ,, ,,	3	15	0
12 feet long, 5 feet wide, ,, ,, ,,	6	10	0

The glass is nailed and puttied in.

R. HALLIDAY & CO.,
Hothouse Builders and Engineers,
ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

W. H. LASCELLES & CO.,
HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.



W. H. LASCELLES AND CO. will give Estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.
LASCELLES' NEW ROCKWORK material in various colours.
Samples can be seen, and prices obtained at 121, Bunhill Row, and 35, Poultry, Cheapside, E.C.
Illustrated Lists of Wooden Buildings, Greenhouses and Conservatories, and Concrete Slabs for walls, paths, and stages, sent post-free on application.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of
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R. HOLLIDAY,
HORTICULTURAL IRON AND WIRE WORKS,
The "Pheasantry" Works, Beaufort Street, Chelsea, S.W.

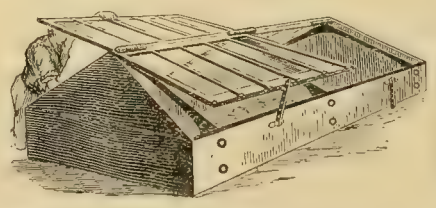
WIREWORK.	WIREWORK.	IRON and WIRE FENCING.	HOT-WATER WORK.
SUSPENDING BASKETS	ROSERIES	ORNAMENTAL GARDEN FENCING	BOILERS, VARIOUS
FLOWER STANDS	ROSE TEMPLES	STRAINED WIRE FENCING	HOT-WATER FITTINGS
WIRE TRELLIS	ROSE FENCES	BARB WIRE FENCING	FOR
VINE TRELLIS	ROSE TRAINERS	HURDLE FENCING	GREENHOUSES
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COVERED WAYS	PHEASANTRIES		
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WIRE SUMMER-HOUSES			

WINTER COVERING FOR VINE BORDERS.

Illustrated CATALOGUES on application.

BOULTON & PAUL, Norwich.
SEND FOR CATALOGUES.

No 60.—Span-roof Plant Protector.



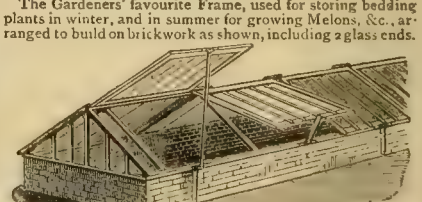
Invaluable in large gardens for protecting plants in open ground, or storing same when turned out of conservatory.

CASH PRICES, including Packing Cases.

6 feet long, 3 feet wide, including one pair of ends								£2	2	0
12 ,, ,, 3 ,, ,, ,, ,,								3	12	0
6 ,, ,, 4 ,, ,, ,, ,,								2	14	6
12 ,, ,, 4 ,, ,, ,, ,,								4	12	6
12 ,, ,, 5 ,, ,, ,, ,,								6	0	6
12 ,, ,, 6 ,, ,, ,, ,,								7	12	6

No. 64.—Span-roof Plant Frame.

The Gardeners' favourite Frame, used for storing bedding plants in winter, and in summer for growing Melons, &c., arranged to build on brickwork as shown, including 2 glass ends.



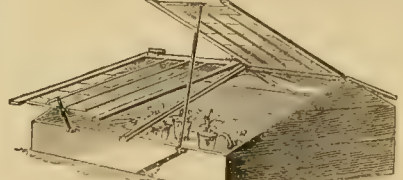
Length.	Width.	Price.	Packing Cases.
12 feet ..	5 feet ..	£5 5 0	.. 4*s*. 6*d*.
18 ,, ..	5 ,, ..	7 5 6	.. 6 0
24 ,, ..	5 ,, ..	9 2 6	.. 7 6
30 ,, ..	5 ,, ..	11 2 6	.. 9 0
12 ,, ..	6 ,, ..	6 10 0	.. 5 0
18 ,, ..	6 ,, ..	9 0 0	.. 6 6
24 ,, ..	6 ,, ..	11 10 0	.. 8 0
30 ,, ..	6 ,, ..	14 0 0	.. 9 6

Made to any length. See Catalogue for larger sizes.

Made of Best Wood and English 21-oz. Glass.

Wood for the Frames 1¼ inch thick.

No. 74.—Three-quarter Span-roof Garden Frame.

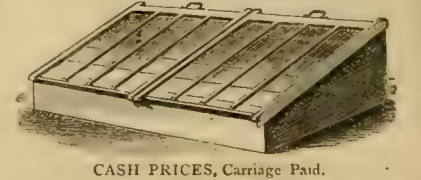


CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
No. 2 ..	8 feet ..	6 feet ..	£4 15 0	.. 5*s*. 6*d*.
No. 3 ..	12 ,, ..	6 ,, ..	6 10 0	.. 6 6
No. 4 ..	16 ,, ..	6 ,, ..	8 5 0	.. 8 0

Height in front, 11 inches, back 22 inches, centre 32 inches. Lights made to turn over. Set-opes for ventilating.

No. 75.—Melon and Cucumber Frame.



CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
No. 2 ..	8 feet ..	6 feet ..	£3 7 6	.. 3*s*. 6*d*.
No. 3 ..	12 ,, ..	6 ,, ..	4 17 6	.. 4 0
No. 4 ..	16 ,, ..	6 ,, ..	6 7 6	.. 4 6

Depth in front 13 inches, back 24 inches, lights 2 inches thick, strengthened with iron rod. One handle to each light. Lights only, 6 ft. × 4 ft., unglazed and unpainted, 6*s*. each. Glazed with 21-oz. sheet glass and painted 4 coats, 16*s*. each.

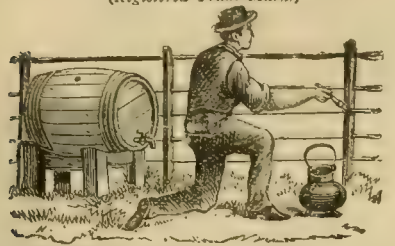
All the Frames painted four coats and glazed with best 21-oz. English Glass.

All these Frames carriage paid to any Railway Station in England and Wales, also to Edinburgh and Dublin. Packing Cases allowed for in full if returned within fourteen days in good order and duly advised.

PAINE'S PATENT VENTILATING GEAR for Greenhouses.—120 Ventilators can be opened and closed in one minute. No cords required; can be worked by a boy, and cannot get out of order. Information and references on application to
G. PAINE, Machinist, Broadwater, Worthing.

Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to
HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow.

GARDEN REQUISITES.—Cheapest house in the Trade. Every Garden Requisite kept in stock. Before purchasing elsewhere write for free Price List to W. WARREN AND CO. (late T. Hagarty), 8, Whitecross Place, Wilson Street, Finsbury, E.C.

SILVER SAND, coarse, Sussex and Bedfordshire; Sussex and Kent PEAT and LOAM of the best quality by truckload, ton, and in sacks, at moderate prices. Low rates to London and to all parts.—W. SHORT, Horticultural Company, Midhurst, Sussex.—Established 1862.

Rosher's Garden Edging Tiles.



THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.

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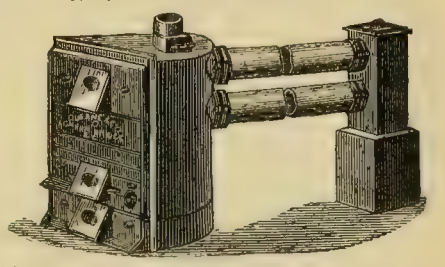
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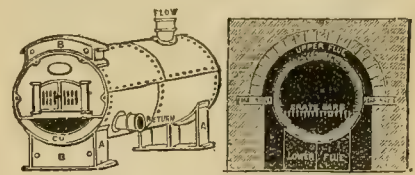
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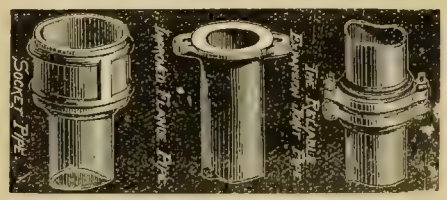
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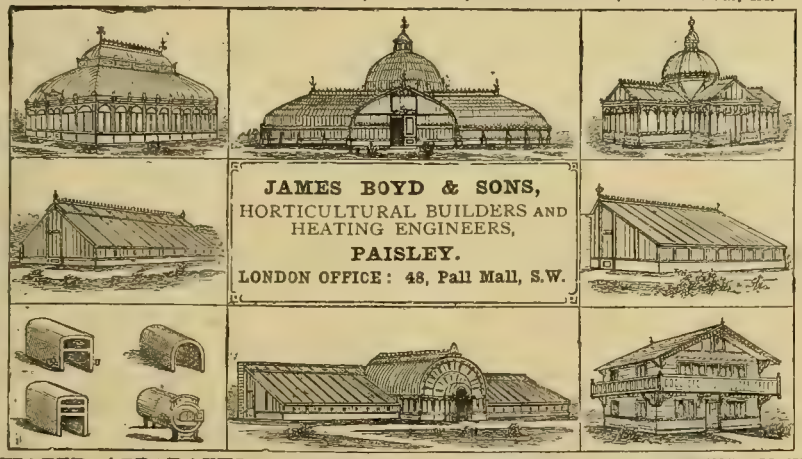


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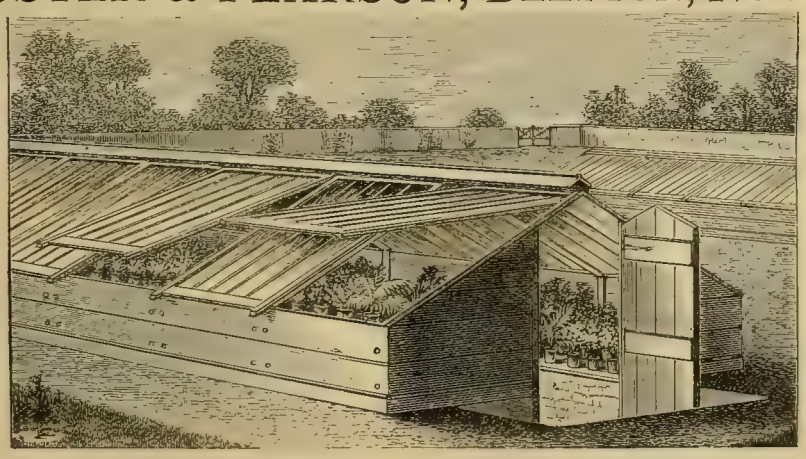
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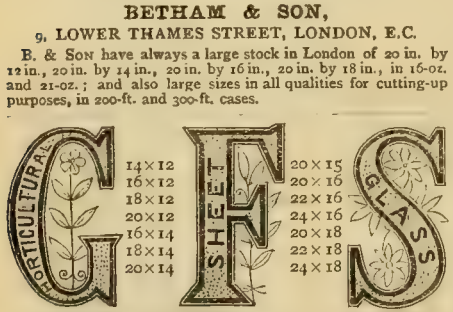
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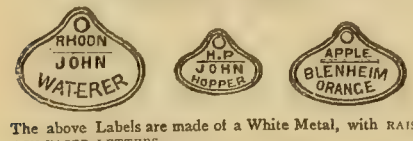
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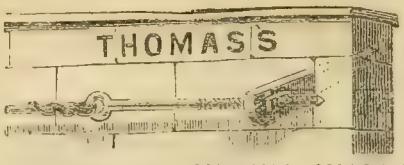


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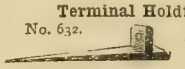
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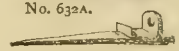
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WANTED, a PARTNER, with £3000 or £4000, to join present proprietor (who has a larger amount of capital) in an old-established and extending Nurseryman's Business. Incoming partner should have experience enabling him to undertake correspondence, finance, and office management.—For further particulars address P., James & Henry Grace, Public Accountants, Royal Insurance Buildings, Bristol.

PARTNER.—Advertiser is anxious to meet with a Gentleman who would join him in Purchasing and Working a Large and Valuable Nursery and Seed Business.—Full particulars on application to N. Q., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

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WANTED, a HEAD GARDENER, to take charge of the Gardens and Greenhouses of Kensal Green Cemetry. Must be proficient in Landscape and Carpet Gardening.—Application by letter enclosing testimonials to the CHAIRMAN, 95, Great Russell Street, Bloomsbury, W.C., on or before Thursday, November 6.—October 29.

WANTED, in Sussex, as UNDER GARDENER, a man with good experience of Hothouse and Flower Garden Work. Rising wages to a thoroughly dependable man. Testimonials, including a recent one from a Clergyman, to W. H. A. JACOBSON, 41, Finsbury Square, London, E.C.

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Form of Application may be obtained by forwarding a stamped, addressed, foolscap envelope to the undersigned, to whom applications, accompanied by copies of three testimonials of recent date, must be delivered by or before 10 A.M. on Friday, November 7 next. By Order,

JNO. H. RUTHERGLEN, Clerk to the Managers,
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 1, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 567.—Vol. XXII. { New Series. } SATURDAY, NOVEMBER 8, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. Post-free, 5½d.

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Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Chrysanthemums.
CHARLES TURNER'S ANNUAL EXHIBITION will commence on the 1st, and continue till the end of November.
The Royal Nurseries, Slough.

SPIRÆA—SPIRÆA—SPIRÆA.—100 Roots 15s. Would take 45s. for 300.
O. THOMAS, 3, Little Love Lane, Wood Street, London, E.C.

Spiræas—Spiræas.
JULES DE COCK, NURSERYMAN, Ghent, Belgium.
SPIRÆA JAPONICA, first-class clumps.
Many thousand for sale. Prices on application.

Standard, Half-Standard, and Dwarf Hybrid PERPETUAL ROSES.
HUGH LOW AND CO. offer the above, of very fine quality, grown on fresh land at their new Nursery, Bush Hill Park, near Enfield, by the 100 or 1000, at very low prices.

ADIANTUM CUNEATUM, 5-inch pots, good, 10s. per dozen, £4 per 100.
Several large PALMS and TREE FERNS for sale.
GEO. WILLIAMS AND CO., Swiss Cottage Gardens, Upton.

LARGE ARAUCARIA EXCELSA for Sale.
Also large SPECIMEN CAMELLIAS, from 3 to 12 ft.
E. COOLING, Mile Ash Nurseries, Derby.

Tea Roses.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

To the Trade.
EAST LOTHIAN STOCK.—Purple, White, Scarlet, New Crimson, and White Wallflower Leaved. All saved from the purest strains. Prices on application.
IRELAND AND THOMSON, Seed Warehouse, 20, Waterloo Place, Edinburgh.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

FREESIA REFRACTA ALBA.
Long white bell-shaped flower for early blooming. Very sweet scented. One of the most useful bulbs that can be grown.
See our Bulb CATALOGUE, free on application.
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

CŒLOGYNE CRISTATA ALBA.—The New Snow-white Cœlogyne. One of the most lovely of Orchids. Sizes and prices on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

SANGSTER'S Improved No. 1 PEAS.—Offers from the Trade requested for the produce of about 5 acres, now in rick and in splendid condition. Samples on application. JOHN STEVENS, The Nurseries, Coventry.

RUSSIA MATS.—Full Descriptive CATALOGUE has just been issued. The same will be sent post-free to any who have not received one.
JAMES T. ANDERSON 149, Commercial St., London, E.

SALES BY AUCTION.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

2000 Lilium auratum, from Japan.

4500 TUBEROSES, LILIES in variety, and other BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 11, at half-past 12 o'Clock precisely, a consignment of 2000 LILIUM AURATUM, from Messrs. Hayashi & Co., of Japan; 4500 TUBEROSES, from South Africa; Home-grown LILIES in variety; about 25 lb. of THRINAX RECLINATA SEED; 500 PRIMULA CASHMIRIANA and ROSEA; also a quantity of LILIUM SPECIOSUM, L. UMBELLATUM, L. TIGRINUM, L. THUNBERGIANUM, LILY of the VALLEY; AMARYLLIS LONGIFOLIA; IRIS KÆMPFERI, &c., from Holland.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6769.)

5000 extra fine SOUTH AFRICAN TUBEROSES.

MR. J. C. STEVENS will include the above in his SALE by AUCTION at his Great Rooms, 38, King's Street, Covent Garden, W.C., on THURSDAY NEXT, November 13.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6769.)

SOPHRONITES GRANDIFLORA.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 13, a consignment of SOPHRONITES GRANDIFLORA, in fine condition.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6769.)

ONCIDIUM MACRANTHUM, O. LOXENSE, SOBRALIA ELIZABETHÆ, SACCOLABIUM HARRISONIANUM, ODONTOGLOSSUM EDWARDI

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander on THURSDAY NEXT, November 13, at half-past 12 o'Clock precisely, a splendid importation of ONCIDIUM LOXENSE and SOBRALIA ELIZABETHÆ, two extra fine and rare ORCHIDS; also a small but superb lot of the rare SACCOLABIUM HARRISONIANUM, among them specimens of unusual size, some in flower; also AERIDES LAURENCIÆ and A. SANDERIANA (true), many CATTLEYAS, ODONTOGLOSSUMS, &c.; also a few choice ESTABLISHED ORCHIDS, many of which are in flower.
On view morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his next SALE of FLOWERING ORCHIDS will take place on THURSDAY, November 20. Gentlemen desirous of entering plants for this Sale will please send particulars not later than THURSDAY NEXT.
Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

The Clock House, Clapham Common, S.W.

CLEARANCE SALE.

MESSRS. J. McLACHLAN AND SONS have received instructions from J. Kemp Welch, Esq., to SELL by AUCTION, on the Premises, as above, on WEDNESDAY, November 12, at 12 o'Clock precisely, the GREENHOUSE PLANTS, IRON HOT-WATER PIPING, GARDEN IMPLEMENTS, LIGHTS, and FRAMES, about 4 loads of MANURE, LEAD, IRON, and SLATE CISTERNS, IRON HURDLES, and general OUTDOOR EFFECTS.
Catalogues of the Auctioneer, The Pavement, Clapham Common, S.W.

Tuesday Next.—Dutch Bulbs.

ALTERATION of DAY, in consequence of the Lord Mayor's Show.

MESSRS. PROTHEROE AND MORRIS beg to announce that their usual MONDAY'S SALE of DUTCH BULBS will be POSTPONED from Monday until TUESDAY NEXT, NOVEMBER 11, in consequence of the Lord Mayor's Show. To commence at half-past 11 o'Clock precisely.
Central Auction Rooms, 67 and 68, Cheapside, London, E.C.

Thursday and Saturday Next.—Dutch Bulbs.

UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on THURSDAY and SATURDAY NEXT, at half-past 11 o'Clock precisely, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other ROOTS, from Holland, in lots to suit the Trade and private Buyers.
On view morning of Sale, and Catalogues had.

Milford Nurseries, Godalming, near the Milford and New Godalming Railway Stations.

ANNUAL SALE of First-class NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Maurice Young to SELL by AUCTION, on the Premises, the Milford Nurseries, Godalming, on TUESDAY, November 11, and two following days, at 12 o'Clock precisely each day, several Acres of beautifully grown NURSERY STOCK, in fine condition for removal, and lotted to suit the Trade and Private Buyers, comprising 3000 specimen Evergreens and Conifers, 10,000 Laurel rotundifolium, 1 to 2½ feet; 2000 green and variegated Aucubas, 3000 ditto Box, 3000 Berberis Darwinii, 5000 Retinospora aurea and R. flavescens, 1 to 2 feet, suitable for pots; 1000 Cupressus Lawsoniana lutea, 1 to 2 feet; 1000 Euonymus radicans, 2000 fine named and hybrid Rhododendrons, 3000 Dwarf Roses, Fruit Trees, 5000 Red Currants, 3000 Ornamental Park Trees, 6 to 10 feet; 100,000 transplanted Forest Trees, 10,000 Evergreen Privet, 2 to 3 feet; 13,000 Spruce Firs, 1 to 3 feet—3000 fit for Christmas Trees; and other Stock.
May be viewed. Catalogues may be had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.
N.B.—Messrs. PROTHEROE & MORRIS beg to call the special attention of Gentlemen, Nurserymen, and others requiring well-grown stock for immediate effect, to the above highly important Sale.

Wednesday Next.

A fine assortment of Hardy English-grown LILIES and BULBS, 300 CAMELLIAS and AZALEAS from Belgium, 300 Standard ROSES of the best sorts, a selection of PALMS, FERNS, and other DECORATIVE PLANTS, and a variety of other PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 12, at half-past 12 o'Clock precisely.
On view morning of Sale, and Catalogues had.

Wednesday Next.

10,000 LILIUM AURATUM, 1000 LILIUM TENUIFOLIUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 12, at half-past 12 o'Clock precisely, 10,000 LILIUM AURATUM, just received from Japan in splendid and sound condition; and 1000 fine bulbs of the true LILIUM TENUIFOLIUM.
On view morning of Sale, and Catalogues had.

Leytonstone, Essex.

IMPORTANT SALE of a large quantity of thriving NURSERY STOCK, viz., choice Evergreen, Coniferæ, and Deciduous Shrubs, Hardy American Plants, Ornamental and Forest Trees, Selected Fruit Trees, 2000 Standard, Dwarf, and other Roses, choice Greenhouse Plants, Double Primulas, Vines, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, on the Premises, The American and Fillebrook Nurseries, adjoining the Railway Station, on THURSDAY and FRIDAY, November 13 and 14, at 12 o'Clock precisely each day.
Full particulars in Catalogues, which may be had on the Premises, and of the Auctioneers, 67 and 68 Cheapside E.C.

Thursday and Saturday Next.

DUTCH BULBS.—UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY and SATURDAY NEXT, at half-past 11 o'Clock precisely, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other ROOTS, from Holland, in lots to suit the Trade and private Buyers.
On view morning of Sale, and Catalogues had.

Friday Next.

Highly Important SALE of IMPORTED ORCHIDS.
CATTLEYA AMETHYSTOGLOSSA,
PHALÆNOPSIS SANDERIANA.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 14, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large quantity of choice Imported ORCHIDS, comprising marvellously fine specimens, probably the best hitherto offered, in grand condition, of Cattleya amethystoglossa and C. gigas imperialis Sanderiana varieties, the former seen by collector with forty to forty-five flowers on a spike; Phalænop-is Sanderiana, Cattleya labiata varieties, from Espritu Santo; C. Leopoldi, C. Loddigesi, C. Schilleriana, C. Mendeli, Odontoglossum Alexandræ, fine; O. luteo-purpureum, Oncidium varicosum Rogersi varieties, O. Krameri, O. crispum, Vanda Sanderiana, Masdevallia racemosa Crossi, Cyoripediums, Dendrobiums, and other choice Orchids. Also 3000 EUCHARIS BULBS, from the Cauca.
On view morning of Sale, and Catalogues had.

Ashford, Kent.

CLEARANCE SALE of remarkably well grown NURSERY STOCK, the land being required by the Burial Board.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. Bunyard to SELL by AUCTION on the Premises, The Barnfield Nursery, Ashford, Kent, on Tuesday, November 18 at 11 o'Clock precisely, in consequence of the large number of lots, the whole of the beautifully grown NURSERY STOCK, comprising about 20,000 Ornamental and Forest Trees, including 10,000 Chesnuts, 5000 Ash, 5000 Laurel, Conifers, and Evergreens in great variety, suitable for immediate effective planting; Standard and Pyramid Fruit Trees, 2000 Standard and Dwarf Roses, and other stock.
May now be viewed. Catalogues may be had of Mr. T. BUNYARD, Nurseryman, Ashford, Kent, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

The Fallowfield Collection of Orchids.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY, November 18, at half-past 12 o'Clock precisely, a very valuable lot of ESTABLISHED ORCHIDS, comprising many large specimen and rare Orchids, among others:—

Cypripedium vexillarium	Aërides suavissimum flavidum (Pince's original plant)
,, Swanianum	,, odoratum purpurascens
,, Chantini (in flower)	Cattleya labiata Pescatorei
,, albo marginatum	,, Skinneri alba
,, caudatum roseum	Dendrobium Ainsworthi
Vanda cristata	,, Wardianum (old variety)
,, suavis Veitchii	,, Schröderi
,, insignis (Ainsworth's variety)	,, crassinode album
,, Lowi	Saccolabium retusum
Cœlogyne cristata (Chatsworth variety.	Odontoglossum Edwardi
Aërides larpentæ	,, mulus
	,, aspersum

And many grand specimens of CATTLEYAS, &c.
On view morning of Sale, and Catalogues had.

Sutton, Surrey.

Two days' Sale of remarkably well grown NURSERY STOCK,

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. Potter to SELL by AUCTION, on the Premises, the Mid-Surrey Nurseries, Benhill Street, Sutton, close to the Sutton and Carshalton Railway Stations, on TUESDAY and WEDNESDAY, November 18 and 19, at 12 o'Clock precisely each day, a large quantity of remarkably well grown NURSERY STOCK, comprising fine specimens of Cedrus Deodara, Piceas, Cupressus, sixty Wellingtonias, splendid trees; 2000 Laurels of sorts, 2 to 4 feet; 2000 oval-leaved Privet, 2 to 3 feet; 1000 Cupressus Lawsoniana, 2 to 4 feet; 500 Chinese Arbor-vitæ, 2 to 3 feet; 2000 Standard, Half-Standard and Dwarf Roses; Standard, Weeping, and other Variegated Hollies, Yews, Aucubas; Standard Ornamental Trees, and other Shrubs. Also a variety of Greenhouse Plants, Azaleas, Camellias, Palms, Ferns; a large quantity of Ivies in pots, Window Plants, &c.
May now be viewed, and Catalogues had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Ascot.

IMPORTANT SALE.
To the Trade and other Large Buyers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Standish & Co., to SELL by AUCTION, on the Premises, The Royal Nurseries, Ascot, on WEDNESDAY and THURSDAY, November 26 and 27, at 12 o'Clock precisely each day, several acres of remarkably well-grown NURSERY STOCK, including 40,000 Pinus austriaca and 30,000 P. Laricio, 2-yr. transplanted and seedlings; 1500 ditto, 2 to 4 ft.; 6000 Spruce, 1 to 4 ft.; 15,000 seedling Scotch Fir; 12,000 ditto, 2 to 5 ft; 3500 Weymouth Pines, 6000 Ornamental Trees, 6 to 9 ft.; 3000 green Hollies, 2 ft; 15,000 common Laurels, 1 to 3 ft.; 6500 Laurus caucasicum, 1 to 3 ft.; 2000 Retinosporas, 1000 named Rhododendrons, budded; 500 Border Shrubs, 650 Cupressus Lawsoni alba and compacta, 1½ to 2½ ft.; Retinospora plumosa alba, 3000 Conifers, of sorts, 2 to 7 ft.; 1000 Standard, Pyramid, and Trained Fruit Trees; 2000 Standard, Half-standard, and Dwarf Roses, and a quantity of GREENHOUSE PLANTS in variety.
May now be viewed. Catalogues may be had on the Premises; or of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Important Sale of Stove and Greenhouse Plants.

MESSRS. HUTCHISON AND DIXON will SELL by AUCTION, on MONDAY, November 10, at the Mart, 7, West Nile Street, Glasgow, commencing at 12 o'Clock, noon, STOVE and GREENHOUSE PLANTS, ORCHIDS, FERNS, STATUARY, &c., which belonged to the late A. B. Stewart, Esq., Rawcliff Lodge, Langside, and removed for convenience of Sale.
NOTE.—The Auctioneers beg to call the special attention of intending purchasers to the above Sale. The Orchids and Odontoglossums are all the very best selected varieties, many of them being specimens of the finest order. The Ferns are all rare sorts of their kind (two of them being, perhaps, the finest and largest in Europe) selected by Mr. Stewart with the greatest care; and altogether the collection is one of the best offered in Glasgow for a considerable time.
Full particulars in Catalogues, now ready, to be had free upon application to the Auctioneers.

Great Clearance Sale of Greenhouse, Stove, and OTHER ORNAMENTAL PLANTS.

THE LAWSON SEED AND NURSERY CO. (Limited) have resolved to DISPOSE, of by PUBLIC AUCTION, without reserve, on THURSDAY and FRIDAY, November 13 and 14, at 11 o'Clock each day, the whole of the valuable contents of the extensive Plant-houses at New Golden Acre, Granton Road, comprising many thousands of the leading Ornamental Plants, such as PALMS, DRACÆNAS, FICUS, FERNS, AZALEAS, CAMELLIAS, Tea ROSES, VINES, &c., well worthy of the attention of the Trade and others.
Catalogues are in preparation, and may be had from THE LAWSON COMPANY, George IV. Bridge; or from the Auctioneer, DAVID MITCHELL, 6, Comely Bank, Edinburgh.

Isleworth, Middlesex.

SALE of EXCEEDINGLY VALUABLE FREEHOLD and COPYHOLD PROPERTIES.

MR. E. P. NEWMAN will SELL by AUCTION, at the Auction Mart, Tokenhouse Yard, London, E.C., on TUESDAY, Nov. 18, at 12 o'Clock, about 15¾ acres of exceedingly fertile FRUIT PLANTATIONS known as the Mogden House Gardens, together with two well-built detached residences thereon, Cottage, and convenient Outbuildings, situate in the Twickenham Road; also the Fruit Plantation known as Lewis' Garden, containing about 3 acres. The Land is well planted with Fruit Trees, and has extensive frontages admirably adapted for Building Purposes, being within a few minutes' walk of three Railway Stations, and which will be sold in four lots.
Particulars, with Plans, can be obtained of Messrs. TYLEE, WICKHAM AND MOBERLY, Solicitors, 14, Essex Street, Strand; of A. T. DRAPER, Esq., Surveyor, Leicester; E. D. DRAPER, Esq., Solicitor, Bromley, Kent; and of the Auctioneer and Estate Agent, 41, High Street, Uxbridge, and Hillingdon, Middlesex.

Froghall Nursery, Enfield Chase, Southgate,

1½ mile from New Barnet and Oakley Park Stations, Great Northern Railway, main line.
7000 Standard, Half-Standard, and Dwarf ROSES. The collection comprises all the leading varieties, and are remarkably healthy and well grown.

MR. J. HARLAND will SELL by AUCTION, upon the Premises, as above, by order of the proprietor, Mr. C. M. Lindsey, on FRIDAY, November 21, at 12 o'Clock precisely, on account of the number of lots. The lots are arranged to suit the trade, and also private purchasers. Ten days will be allowed to clear the ground.
Catalogues may be had seven days prior to the day of Sale at the Nursery, the usual Inns in the neighbourhood, and by post from Mr. J. HARLAND'S Auction and Estate Offices, High Barnet.

TO BE DISPOSED OF, a first-class SEED BUSINESS, in one of the largest towns in the Midland Counties.
Apply, Z. Y. X., Hurst & Son, 152, Houndsditch, London, E.

FOR SALE a NURSERY and SEED BUSINESS at the thriving Market Town of Denbigh (North Wales). Nurseries about 14 acres, with a good saleable stock of Forest, Fruit, and other Trees and Shrubs, Greenhouse, &c. Very favourably situated near to railway station. Land in good condition and on easy terms. Premises (leasehold, and rent low) for Seed Business, situated in the centre of the town in the main street, to be disposed of on favourable terms to purchaser.
All particulars on application to Mr. HUGH ROBERTS, Crypt Chambers, Chester.

FOR SALE, a NURSERY, Old-established, with many acres of Prime Stock suitable for the increasing wants of a large seaside resort. The numerous Green and Forcing Houses are in full working order. Very easy terms may be made by a responsible purchaser, as the owner is advancing in years and desirous of retiring. No agents.
Apply by letter to Mr. LAMB, 14, Thavies Inn, Holborn, London, W.C.

To Nurserymen, Landscape Gardeners and Others.

TO BE SOLD, by Private Contract, the BUSINESS of NURSERYMAN and LANDSCAPE GARDENER, carried on for nearly fifty years by the late Mr. Thomas Coudrey, and lately by his Son and Successor (who is declining the business on account of ill-health), at the Edgbaston and St. James' Nurseries, Edgbaston, Birmingham.
Apply, for particulars, at 6, Ampton Road, Edgbaston.

FOR SALE, a NURSERY, Guernsey. A rare opportunity is offered to Florists and Gardeners, in the sale of the well-known and well-connected Rohais Nursery, situate about 1 mile from the harbour, in the island of Guernsey. Established over 50 years. This Nursery is well known in England for its famous and rare collection of Camellias and Bulbs. It is now to be disposed of through the death of its late owner, Mr. B. Willis. The Nursery contains good Residence, with 2¼ acres of rare superior Land, through which runs a stream of fresh water. The whole is well laid out and stocked with Trees, Plants, Shrubs, Flowers, as well as a superior collection of Camellias. There are besides 8 Conservatories, Vineries, Camellia Houses, and over 200 feet of Forcing Frames, and Camellia Pits. The whole in good working order. The sale will take place on the Premises on Wednesday, Nov. 19, at 2 P.M.
For particulars, apply to Mr. E. QUERIPEL, Solicitor, Manor Place, Guernsey; or, to Mr. H. SOTTER, on the Premises.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

JOHN KENNARDS, HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

Hyacinths in Pots.

POTS made expressly for HYCINTHS can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Rhubarb and Seakale Forcing.

STRONG well-made POTS for the above can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

TO THE TRADE.—Special offer of SPIRÆA JAPONICA, extra strong clumps; LILY OF THE VALLEY, extra strong clumps; LILY OF THE VALLEY, finest German Crowns; GLADIOLUS BRENCHLEUENSIS, extra large; AFRICAN TUBEROSES, first quality Prices upon application to
JAMES CARTER, DUNNETT, AND BEALE, 237 and 238, High Holborn, London, W.C.

Grape Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

AQUILEGIA GLANDULOSA (Grigor's var.).—This, the most beautiful of all Columbines, should have a place in every collection (see article in *Gardeners' Chronicle* for last week). Strong flowering plants at 5s. per dozen, or 35. per half-dozen, in both cases carriage paid for Cash with Order.
JOHN GRIGOR AND CO., The Nurseries, Forres, N.B.

WILLIAM BARRON AND SON'S Descriptive CATALOGUE of Forest Trees, Conifers, and Hardy Ornamental Trees, Fruit Trees, Rhododendrons, Roses, &c., is now ready, and may be had, post-free, on application.
Elvaston Nurseries, Borrowash, near Derby.

To the Trade, and Others.

DWARF ROSES.—Several thousands to offer, really fine stuff, of all the varieties worthy of cultivation, at 6s. per dozen, or 40s. per 100, carriage paid. Cash with all orders.
WILLIAM DEEDMAN, Little Posbrooke, Titchfield, Hants.

HELLEBORUS NIGER (Chistmas Rose).—Just arriving, a large Importation of this grand Winter Flower—good roots—in good condition. Exceptionally low prices on application to
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

PHEASANT-EYED NARCISSUS.—Bulbs of this sweet-scented Narcissus 10s. per bushel, 6s. per half bushel, 3s. 6d. per peck. Terms cash with order. Package free. Post-office Orders payable Walton-on-Thames.
J. E. ALDERSON, Bell Farm, Hersham, near Walton-on-Thames, Surrey.

WHITE CHRYSANTHEMUMS (Elaine).—A large quantity of very fine blooms, at 3s. per 100. Cash with order.
R. E. CLACK, Florist, Redhill, Surrey.

LANCASHIRE LAD GOOSEBERRY BUSHES for Sale, three years old.—For particulars apply to W. MANN, Mogden, Isleworth.

CAMELLIAS.—To be Disposed of, Cheap, for want of room, one Alba plena, in tub; two Double Red, in large pots.—Apply to
E. ROGERS, The Gardens, Serlby Hall, Bawtry.

SEAKALE for FORCING.—Superior selected roots, 90s. per 1000; under 500, 10s. per 100. All orders prepaid. A sample forwarded if required.
ALFRED ATWOOD, Market Gardener, 50, Shillington Street, Battersea S.W.

READING HERO POTATO.—300 Tons of this extraordinary heavy cropping Potato, true stock, for Sale cheap, to save storing.
BRINKWORTH AND SONS, Reading.

PEACH TREES (Standard), for SALE, very large—for want of room; also two FIGS. For particulars, G. BAILEY, Abshot Road, Titchfield, Hants.

"MARY MORRIS," BORDER CARNATION.—Two First-class Certificates, 3s. a pair, 15s. a dozen. Cash with order. Direct from raiser.—H. G. SMYTH, 21, Goldsmith St., Drury Lane, W.C.

BIRMINGHAM CHRYSANTHEMUM SOCIETY.
SPECIAL NOTICE of ADDITIONAL PRIZES for Cut Blooms of CHRYSANTHEMUMS, to be given at the Show, to be held in the Town Hall, Birmingham, on WEDNESDAY and THURSDAY, November 19 and 20.
9.—48 blooms of Chrysanthemums, 24 incurved and 24 Japanese (distinct)—1st Prize, £10; 2d Prize, £7; 3d Prize, £4; 4th Prize, £2.
10.—24 blooms of Chrysanthemums, 12 incurved and 12 Japanese (distinct).—1st Prize, £4; 2d Prize, £2; 3d Prize, £1.
11.—18 blooms of Chrysanthemums, incurved (distinct).—1st Prize, £3; 2d Prize, £2; 3d Prize, £1.
12.—12 blooms of Chrysanthemums, Japanese (distinct).—1st Prize, £2; 2d Prize, £1; 3d Prize, 10s.
13.—12 blooms of Chrysanthemums, Anemone (not less than six varieties).—1st Prize, £1; 2d Prize, 15s; 3d Prize, 10s.
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A GRAND CHRYSANTHEMUM SHOW will be held in the Public Rooms, Jarratt Street, Hull, on THURSDAY and FRIDAY, November 20 and 21.
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PALMS (young), strong healthy English-grown Seaforthia elegans and Latania borbonica, 10l to 12 inches high, nicely furnished, 25s. per 100, 4s. per dozen. Carriage paid for cash with order only.
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THE BOTANIC GARDENS, Capetown, Cape of Good Hope, are now Booking Orders for Bulbs and Terrestrial ORCHIDS, deliverable about February next. Price Lists on application. ED. HUTT, Seed Manager.

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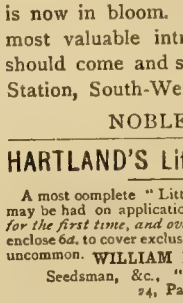
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Descriptive CATALOGUES on application.

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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 14, at half-past 12 o'Clock precisely, by order of Messrs. HUGH LOW & Co., a large quantity of choice IMPORTED ORCHIDS, comprising marvellously fine specimens, probably the best hitherto offered, in grand condition, of CATTLEYA AMETHYSTOGLOSSA and C. GIGAS, IMPERIALIS SANDERIANA VARIETIES, the former seen by Collector with forty to forty-five flowers on a spike; PHALÆNOPSIS SANDERIANA, CATTLEYA LABIATA VARIETIES, from Espritu Santo; C. LEOPOLDI, C. LODDIGESI C. SCHILLERIANA, C. MENDELI, ODONTOGLOSSUM ALEXANDRÆ, fine; O. LUTEO-PURPUREUM, ONCIDIUM VARICOSUM, ROGERSI VARIETIES; O. KRAMERI, O. CRISPUM, VANDA SANDERIANA, MASDEVALLIA RACEMOSA CROSSI, CYPRIPEDIUMS, DENDROBIUMS, and OTHER CHOICE ORCHIDS. Also

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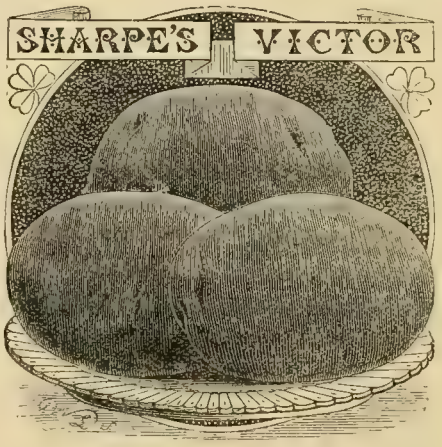
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Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top is especially suitable for frame cultivation, and there is no difficulty in **securing new Potatos for the Table every day in the year.** Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest croppers of any variety adapted for framework, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and quality of the flesh are superior to nearly every other variety at present in use.

Messrs. J. AND J. ELLETSON *write as follows, Sept.* 26, 1883:—"Mr. Usher, Gardener to C. H. Johnson, Esq., Thorgumbald Hall, planted Victor Potatos on January 26, and placed a dish on his employer's table on March 8, from planting to lifting being only SIX WEEKS."

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HYACINTHS, choice quality, 6s. per dozen.
TULIPS, the best for forcing, 1s. and 1s. 6d. per dozen, 7s. to 10s. per 100.
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CYCLAMEN, BOUVARDIAS, SOLANUMS, TREE CARNATIONS, 12s. and 18s. per dozen.
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SOFT and HARD WOODED PLANTS, in large or small quantities, at most moderate prices.
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HYACINTHS, border, separate colours, 2s. 6d. per dozen, 16s. per 100.
TULIPS, double or single, 9d. and 1s. per dozen, 5s. and 6s. per 100.
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NARCISSUS, in 35 of the finest and most distinct sorts, as per CATALOGUE.
,, ordinary varieties, 3s. 6d. to 5s. per 100.
WALLFLOWERS, red or yellow, SWEET WILLIAMS, CANTERBURY BELLS, SILENE COMPACTA, POLYANTHUS, PRIMROSES, in great variety of colours; ARABIS ALPINA, AUBRIETIAS, ALYSSUM SAXATILE, in large good plants, 1s per dozen, 7s. per 100; or in small plants drawn from seed-beds, 1s. per 100.
DAISIES, red, white or rose, 9d. per dozen, 4s. per 100.
HEPATICAS, double PRIMROSES, 3s. 6d. per dozen.
COLLECTION of 500 SPRING FLOWERING PLANTS for 25s.
CONIFERS, fine plants for Window-boxes or Winter bedding, 4s. and 6s. per dozen, 30s to 50s. per 100.
HERBACEOUS PLANTS. This is the best season to plant. 12 fine distinct kinds, 3s.; 50, 12s. 6d.; 100, 30s.
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CARNATIONS and PICOTEES, 6s. per dozen.
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LILIES, in fine variety, 3s. and 6s. per dozen.

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HYBRID PERPETUALS, 12 fine varieties, 6s.; or 45s. per 100.
TEA and NOISETTES, 12s. to 18s. per dozen.
MOSS ROSES, 7s. 6d. per dozen.
CLIMBING ROSES, quick growers, 6s. per dozen.
For prices of purchaser's selection and LIST of sorts, including the pretty single Japan Roses, &c., see CATALOGUE.

FRUIT TREES — FRUIT TREES.

In all the Best Cropping Varieties.

APPLES, PEARS and CHERRIES. Dwarf-trained, for walls, &c., good trees, 15s., 18s. and 24s. per dozen.
PEARS, Pyramid, 40s. and 50s. per 100; good fruiting trees, 75s. and 100s. per 100; Maidens, 30s per 100.
APPLES, Pyramid, 40s., 50s., and 75s. per 100.
CHERRIES, Dwarf-trained Morello and May Duke, 15s., 18s., and 24s. per dozen
CURRANTS, Red and Black, of sorts to name, 8s., 10s. and 12s. per 100.
RASPBERRIES, Fillbasket, 6s. per 100.
STRAWBERRIES in 40 best sorts, strong runners, 3s. per 100; in small pots, 12s. 6d. per 100; in pots for forcing, 25s. per 100; 500 in ten or twenty sorts for 12s. 6d.
SHRUBS, Deciduous, 12s. and 15s. per 100, good plants.
HEATHS, Hardy, of sorts to name, 15s. per 100.
THORNS, Double and Single, of sorts, Standards and Pyramids, 50s. and 75s. per 100.
SPIRÆA PALMATA, fine forcing clumps, 10s., 15s. and 20s. per 100.
AUCUBAS, well coloured, for boxes, pots, &c., 6 to 9 inches, 16s per 100; 9 to 12 inches, 20s. per 100.
THORN QUICKS, 15s. to 30s. per 1000, extra well rooted.
OVAL-LEAVED PRIVET, 4s. to 12s. per 100.
FOREST TREES, in great variety, 50s. to 100s. per 100.
CLIMBING PLANTS, many kinds, 6s., 9s. and 12s. per doz.
AMERICAN PLANTS, in beautiful variety, 6s. and 9s. per dozen.

WM. CLIBRAN & SON,

Oldfield Nurseries, Altrincham.

EIGHT MILES FROM MANCHESTER.

TO THE HORTICULTURISTS AND GARDENERS OF THE UNITED KINGDOM.

Gardeners' Royal BENEVOLENT INSTITUTION.

Augmentation of Pension Fund.

Only £420 are required to increase the Pension to £20 per year.

This amount (£420) must be collected before December 31, or the Institution will lose the £500 promised on these conditions by an anonymous donor.

An earnest appeal is therefore made to all those interested in horticultural pursuits to send their donations at once.

GARDENERS, do not be afraid to send your shillings (or your guineas), every little will help, and the smallest (and largest) donations will be thankfully received by

Dr. MASTERS, or W. RICHARDS,

41, WELLINGTON STREET, STRAND, W.C.

Donations already received:—

Mr. SHERWOOD (Hurst & Son) ...	£5	5	0
Mr. HATCH	1	0	0
Mr. W. RICHARDS	1	1	0
5 UNDER-GARDENERS, 1s. each	0	5	0
Dr. MASTERS	2	2	0

The following List of Donations has been collected by Mr. W. COLEMAN, of Eastnor Castle Gardens:—

Mr. W. COLEMAN	£1	1	0
T. ANDERSON, Esq., London	2	2	0
Dr. HENRY, Haffield	2	0	0
Mrs. RICARDO, Bromesberrow Place..	1	0	0
Rev. R. P. HILL, Bromesberrow Rectory	0	10	6
Mr. McROBIE, Gardener, Bromesberrow	0	10	0
Mr. HENDERSON, Gardener, Haffield	0	10	0
G. PIPER, Esq., Solicitor, Ledbury	0	10	6
E. WEBB, Esq, Ledbury	0	10	6
Mr. J. DAWES, Gardener, Priory, Reigate	0	10	6
Mr. FISHER, Gardener, Flixton Hall, Bungay ..	0	5	0
Mr. PARR, Ledbury	0	5	0
Mr. FRASER, Upper Hall, Ledbury	0	10	6
W. A. H. MARTIN, Esq., Upper Hall, Ledbury ..	2	0	0
JOHN HOPTON, Esq., Canon, Frome	2	0	0
Captain ARCHDALE, Ledbury	1	0	0
H. BAILLIE, Esq, Eastnor	0	10	0
C. RADCLIFFE COOKE, Esq.	0	10	0
Mr. CHARLES STEPHENS, Ledbury	0	5	0
J. E. WHEATLEY, Esq., West Bank, Ledbury ..	0	10	0

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 8, 1884.

ABBOTSFORD.

THE express train to Edinburgh whirls the traveller over the Waverley route, past Melrose and Abbotsford, and through the classic land of Scottish song and story, far too fast for those who venerate the name of Scott, and who have found their cares beguiled and their sorrows soothed by his inspiring fictions. In returning from this rapid flight I stopped at Melrose, in the midst of the country which the great magician has bewitched. The winding Tweed is there, with the home of Scott, and Dryburgh Abbey, where he lies buried amidst his "own honest grey hills." A Scotch carpenter in Ayrshire, plying his trade not far from "the banks and braes o' bonnie Doon," told an English traveller that "it seemed to him as if the country had grown more beautiful since Burns had written his bonnie little songs about it." In like manner the border country, the nursery of Scotland's pastoral poetry and the scene of Scott's earliest associations, had more charm for him than the richest landscape elsewhere. Its hills were bare in those days, before he and others had planted them, but they were beautiful. He preferred the Tweed, a naked stream without a tree or thicket on its banks, to the Thames in Berkshire.

Melrose Abbey, where the heart of Bruce is buried, and the "wizard" Michael Scott, the Friar Bacon of Scotland, lies in the midst of this enchanted land. Galashiels, Ettrick Vale, and the farm of Hogg, shepherd and poet, Gala Water, and the Braes of Yarrow, are all within a stroll. Three miles from Melrose Scott luxuriated like his own Honeysuckles—as any great loving nature can—his wife and bairns around him, in a fit cottage for a poet on the banks of the Tweed. In 1799 the Duke of Buccleuch obtained him the appointment of Sheriff of Selkirkshire, the county in which his cottage stood. Then came his publication of the *Minstrelsy of the Scottish Border*, collected by him in his native land of song from country folk who had received the verses unwritten from their predecessors. As the chief border minstrel he was asked by the Countess of Dalkeith to write a ballad on a goblin story relating to the family of Buccleuch, and the "Lay of the Last Minstrel," followed the request and with it fame and gold—fairy gold it proved—and ill-weaved though innocent ambition, and the building of Abbotsford.

Heirs male having failed, the granddaughter of Scott is, with her husband, the present owner of Abbotsford, and that gentleman, in accordance with the entail, takes the name of Scott, and is now known as Mr. Maxwell Scott. The house was improved by the late Mr. Hope Scott. It is a good house, built of substantial stone in the Scotch baronial style—a house in which, with £3000 a-year and no expensive habits, any one might be happy provided they were good, as the present owners must be, for they allow strangers to inspect the numerous personal relics of Scott, and to pass through

several rooms, including the hall and study, with its old arm-chair, in which he wrote, and the delightful drawing-room looking on the river. The residence has become a little less private than it was, owing to the erection of one or two good houses on the opposite bank of the Tweed; and if Abbotsford has gained some neighbours, that is an advantage which ought to be appreciated, for when we love our neighbours as ourselves they can hardly be too numerous.

The want of trees, which used to be a very great drawback to this part of the country, has been remedied to a large extent. During Washington Irving's visit to Abbotsford his genial host took him up to the summit of the ranges above the house, and showed him the wide landscape, including Lammermuir and Smailholme, where as a boy he resided; and Teviotdale and Ettrick stream winding along like a silver thread to throw itself into the Tweed. He showed him the country celebrated in the older Scottish songs and in his own poems and romances. It was then comparatively bare of timber, as already said. Irving had been accustomed to see hills crowned with forests, and streams breaking their way through a wilderness of trees, as they do in parts of his native country, or in the South of England, in Devonshire or Surrey, at Dorking, Wotton, and Albury, and he was disappointed. In this respect the border land has improved.

Scott was himself a capital landscape gardener and planter, and he created fairy scenes around him with spade as well as pen. He secured the privacy of Abbotsford by his skill. The high road from Melrose passes close along the rear of the domain, but the simple expedient of lowering the road 2 or 3 feet and planting a thick bank of shrubs has left the house concealed. The site consists only of the river bank; yet, narrow as it is, it does not appear cramped, and by placing the lodge some distance down the road, quite a long drive has been provided for the approach. Then the shelter is complete, for on the side opposite the river and across the road the ground begins to rise, and all the moorlands above are covered with Sir Walter's plantations.

I knew nothing of the neighbourhood, and having walked from Melrose I wished, after calling at Abbotsford, to take the train somewhere. In touring about it is the worst plan in the world to spend all your leisure time in mapping out the road: better by far know nothing. Following the road, expecting to arrive somewhere, I crossed the Tweed by a ferry close to a station on the Selkirk railway. This station is named after the far-famed residence of the great novelist, and on taking a ticket to Galashiels you pass Abbotsford, with only the river intervening, and yet Sir Walter's screen of trees, when the leaves are out, completely secures the privacy of his house.

Having mentioned these details I think we may trust the frequent rules on landscape gardening which are found in the writings of Sir Walter Scott. He says, for example, that approach roads should be made on the model of the paths which sheep form in winding their way along the hillside, that is, not too straight and formal. We may quote him, too, as follows:—"George must stick in a few wild Roses, Honeysuckles, and Sweet Briers in suitable places, so as to produce the luxuriance we see in the woods which Nature plants herself. We injure the effect of our plantings, so far as beauty is concerned, very much by neglecting underwood." He gives a good hint on the method of arranging the lines and glades of woods when you are mapping out the ground with a view to beauty of landscape. "Try," he says, "to make them come handsomely in contact with each other, which you can only do by looking at a distance on the spot, then and there shutting your eyes as you have done when a child looking at the fire, and forming an idea of the same landscape with glades of woodland crossing it."

In planting his woods he received many presents of seeds. The Duke of Buccleuch sent bushels of acorns, the Earl of Fife seeds of Norway Pine, Lord Montagu a box of acorns and a packet of Lime seed. The seeds of the Corsican Pine were forwarded to him, and a box of Chestnuts from Lisbon, so fine that the kitchen authorities seized and boiled them before they could be rescued. For the purpose of forming those shelter screens, or "verdurous walls," as Milton calls them, which the planting of exposed tracts requires, numerous hardy shrubs and trees were sent from Edinburgh, such as 3000 Laburnums, 2000 Sweet Briers, 3000 Scotch Elms, and loads of Hollies, Poplars, and Nuts, besides 100,000 Birches. He was never so happy in his life as in having a place of his own to create. He called it his Caledonian Eden, and he often laboured in it all day with his own hands. Oaks, he said, were likely to become the largest vegetables on the domain. In a letter from Edinburgh he writes of "an old quarry which, a little made up and accommodated with stone seats and some earth to grow a few Honeysuckles and Sweet Briers, would make a very sweet place." He writes to Tom Purdie, the gardener, "You must have a border of about a spade's breadth dug nicely, and made up with good earth and a little dung all along in front of the paling, and along the east end of it. She (Mrs. Scott) will bring the plants from Edinburgh, so they can be put into the ground the evening she arrives."

The evidence of Scott's gardening tastes and skill might easily be extended. He had a kind, good heart, and as he himself said, "that is the main point as to human happiness." He was full of those domestic tastes and simple habits of life which gardens foster, and every gardener and lover of gardens may claim him as one of themselves. I parted from the land of the Magician with a longing desire to revisit it, and thinking of Scott's parting with Washing Irving. He took him by the hand. "I will not say farewell," said he, "for it is always a painful word; but I will say, come again." This is what we are all saying at the decline of the year to the old favourites of our gardens who are dying down, and with whom we are parting till another season. Some very touching lines inscribed on a tombstone in Melrose Abbey on the universal law of change and decay, and the partings that arise therefrom, run as follows:—

"Earth walketh on the earth
Glistening like gold;
Earth goeth to the earth
Sooner than it wold.
Earth buildeth on the earth
Palaces and towers;
Earth sayeth to the earth
All shall be ours."

This would be a melancholy doom but for the hope of reunion—"another season." *H. E.*

New Garden Plants.

ONCIDIUM LOXENSE, *Lindl.*; *Paxt. Fl. G.*, ii., 126; *Folia O., Oncidium*, No. 20.

A VERY well executed careful sketch in colours is at hand. It was prepared by Mr. Edouard Klaboch, who addressed it to Mr. F. Sander. I had a few dried flowers, but neither a bulb nor leaves, although it was very desirable to send at least those, if not a good plant, to enable me to describe the species in a useful way. The bulbs are represented as ligulate, equally broad at both ends, with some longitudinal furrows, two-leaved. Leaves cuneate-ligulate acuminate, more than five to seven times longer than the bulbs, which are much approximate, standing in two rows. I regret I cannot say a word as to the dimensions, but I expect those organs must be very conspicuous. A broad panicle bears numerous twigs, each with three to six flowers. Those flowers are of an unusual form in the Cyrtochilian tribe, to which the plant belongs.

Sepals unguiculate, oblong acute, dull olive with cinnamon bars. Petals nearly equal, broader, shorter, with much broader stalks, nearly totally broader in all other regions. Lip with a toothlike auricle on each side of the base, a broad short stalk, and a wide reniform anterior blade, whose outer margins would appear to constantly turn inwards. There is one strong ridge in the middle of the base, three lacerate fringed keels stand before, and numerous small aculeate calli stand on each side of the ridge, the anterior ones usually very long, filiform acute. The column has very smal inconspicuous appressed three-toothed auriculæ, which are most easily overlooked. At each side of the base there is a protruded ligulate arm, emarginate on the superior margin. The flowers obtain the stamp of excellence by the fine contrast of the dark sepals and petals with the large bright orange lip, in the way of that of Oncidium diceratum, but much like that of Oncidium tigrinum, though much brighter in colour.

I believe the plant has only been seen twice before. Mr. Edouard Klaboch is, no doubt, the first collector who has met with a great number of plants; Messrs. Backhouse & Sons obtained previously a sketch in colours prepared by the late Dr. Krause. It represents the sepals and petals light ochre, the sepals tesselate inside, with sepia petals reticulate. Lip orange, with reddish veins. Whether this indicates a variety or the state of fading I do not know. The original discoverer was Theodor Hartweg, who found a single plant on the Cordillera of Loxa. Two straggling branches and a few flowers are kept in Dr. Lindley's herbarium. It would be gratifying to see this great rarity flowering in the cool house of those gentlemen who have competent growers for Cyrtochiles—not every one's task. *H. G. Rchb. f.*

ODONTOGLOSSUM VUYLSTEKEANUM MACULATUM.

This is one of the finest Odontoglots of the tribe of supposed hybrids. Beautiful as the flowers are, they may yet improve as to the petals, where the angulate teeth are not much developed, as it is the case in Mr. Vuylsteke's typical plant. Petals rather broad, lip much dilated in front. Disc of petals and base of lip lightest white-sulphur, all other parts deepest yellow. A few conspicuous cinnamon blotches are scattered over the sepals, petals, and lip. Column whitish, with a few blotches on wings of column. Messrs. Hugh Low & Co. are the lucky possessors. *H. G. Rchb. f.*

A BELGIAN LANDSCAPE GARDEN.

THIS garden, occupying an area of 61 ares (an are = 119 yards), is situated at Menin in the fertile valley of the Lys, and from its low situation is liable to be inundated. The formation of the little lake (see fig. 102) and of the narrow canals at the side supplied soil for raising the boundary and thus preventing the overflow of the river. The residence of the proprietress, Madame Dubuisson, is on the opposite bank of the river to the garden, which unfortunately involves a *détour* to the nearest bridge, or the necessity of wading the stream. This garden was commenced under favourable conditions by an amateur, whose arrangements were not such as could be allowed to remain. Many persons believe that any one can be a landscape gardener—imagine that it is sufficient to trace some curved lines on the ground whose undulations resemble the wrigglings of a mutilated earthworm, and to sprinkle some flower-beds here and there. These "chambers of horrors," as M. André calls them, are designated "*jardins Anglais!*" At the end of the garden is a mound concealing a grotto, the entrance to which is designed to resemble a mass of rock, and covered with climbing plants. From the top of the mound extensive views are obtained of the numerous windings of the Lys through the broad plain. The mound itself is planted with Conifers, which have an excellent effect, and harmonise admirably with the rockery and grotto. The planting has been very successful, except that the Lilacs and Weigelas having been killed in consequence of an inundation, it has become necessary to replace them. The triangular shrubbery in the centre of the garden to the left is planted with shrubs with coloured foliage, arranged in zones, so as to form a sort of mosaic. This arrangement, which will perhaps not find favour in the eyes of the purists, is nevertheless suitable for small gardens, and meets with general approval. It is not literally exact to say that the beautiful is that which pleases, but unquestionably there is some degree of truth in it. There are many trees and shrubs now at our disposal for such arrangements, such as the Weigelas, the Cornels, Acer Negundo, purple-leaved Nuts and Berberis, Acer Reitenbachii, the purple Peaches, the golden-leaved Spiræa opulifolia, Weigela Looymansi, Philadelphus nanus aureus, and the new Prunus Pissardi. The whole arrangement has been designed and carried out by Mr. Burvenich, of Ghent, and is a good example of the style which has been so successfully popularised by MM. Barillet and André.

HYBRIDISING POTATOS AT READING.

At the request of Earl Cathcart, Messrs. Sutton & Sons have been engaged this year in testing the merits of three of those distinct species of tuber-bearing Potatos which Mr. J. G. Baker, F.R.S., recently described and figured in the *Journal of the Linnean Society*. At Lord Cathcart's instigation Mr. Baker undertook the study of the Potato. Lord Cathcart is himself the author of an excellent article on the Potato in the April number of the *Journal of the Royal Agricultural Society*, and it seems probable that a new departure in Potato breeding may be anticipated as the result of these two papers, and of the investigations which preceded them.

It has sometimes been maintained that breeders might lose much, and could gain nothing, by using wild stocks of Potatos for the purpose of crossing them with cultivated varieties. The writers just referred to think otherwise; and Mr. Baker, after visiting Messrs. Sutton's very extensive collection of cultivated Potatos in a living state, and examining the dried specimens in various herbaria, came to the conclusion that all cultivated sorts, both in England and America, had been derived from a single species—Solanum tuberosum. English and American breeders have borrowed and bred from one another's stocks, but in so doing they have merely rung the changes between varieties having the same specific origin. True hybridisation has been hitherto unknown in Potato breeding. Messrs. Sutton, of course, are practically acquainted with the results of hybridising in the improvement of the plants of the garden and farm, and they are now engaged for the first time in the history of agriculture in hybridising Potatos. Acting under scientific advice their great object is the invigoration of a debilitated species by crossing it with another species which has not yet been cultivated and degraded. [These expressions are open to question, but it will not affect the results of the experiment. Ed.] Another point is to effect this intercrossing by the agency of a species better suited to our climate than S. tuberosum. Mr. Darwin's sagacious remark so long ago as his engagement as a naturalist on board the *Beagle*, bore particularly on this point. Observing the Potato on the wooded shore of Valparaiso, in a moist climate, and hearing of it as a plant of the interior also, at an altitude of 8000 or 9000 feet, where the air is dry, and a drop of rain does not fall for more than six months, he thought it surprising that the same plant should flourish in such different situations. Here we have what may be called a scientific suggestion, for the plants of the two sites are, in point of fact, two species. The plant of the hills is our own cultivated Potato, S. tuberosum, which has been transferred from a dry country to a damp one, and the plant of the plains is S. Maglia; and hence it seems reasonable to expect something even beyond the usual advantage of hybridising by introducing a strain of S. Maglia into our own best breeds.



Fig. 102.—Plan of a Belgian Garden. (see p. 584.)

Another distinct species besides S. Maglia was recommended to Messrs. Sutton in S. Commersoni, which, like the others, has never yet been used for the purpose of cross-breeding here or in America. S. Commersoni, known by the synonym of Ohrondii, from the name of the introducer who brought it from Grotti, an island at the mouth of the Rio de la Plata, has proved an exceedingly robust plant in M. Blanchard's garden at the Marine Hospital at Brest, and in fact it is said to have hitherto enjoyed complete immunity from disease. It produced a fair crop of tolerable quality, and seems capable of improvement under good cultivation, which at Brest it has not yet received. S. Jamesii, the other species grown this year at Reading, would hardly be recognised as a Potato except by a botanist.

It is gratifying to learn that Messrs. Sutton have succeeded in effecting a cross between S. Maglia and one of their own best Potatos. We are able to give the following details of their experiments. The tubers of S. Maglia were planted separately according to their colour, some being pale and others red-skinned. They were placed at first in pots under glass, and afterwards turned out in the open ground, and the two other sorts were treated exactly in the same way. S. Commersoni showed early signs of ripening off, as did S. Jamesii, which is a native of the mountains of Colorado, New Mexico, and Arizona. In this respect they retain their old habits probably, while S. Maglia, which continued growing and was only ready to lift on September 5, did the same. S. Jamesii attained a height of 8 or 10 inches only, coming to nothing under cultivation except in regard to the number of its tubers, one of which reproduced forty about the size of hazel nuts, and of a pale colour. In these days of luxury and fashion, it may possibly be worth while for some shrewd grower to take note of this, and to establish, if he can, such a peculiarity of flavour as shall bring the novelty into favour.

At this first trial S. Commersoni has not proved productive at Reading. It ripened in the middle of August, and it resisted every effort at cross-fertilisation in spite of repeated attempts with the pollen of English breeds in the hands of experts. All the three species produced abundance of flowers, the corollas being white instead of exhibiting the well-known purple tint of our own breeds. We now come to the last of the trials and the best of the results—to S. Maglia, which was, as already said, successfully hybridised, producing three well developed berries full of seed—the only seed of this species, according to Messrs. Sutton, ever grown in this country. As regards the growth of the pale and red tubers no difference could be recognised either in the foliage, flowers, or habit of growth of the various plants. The original tubers were about the size of Walnuts, and round in shape. Their produce, when lifted, proved to be of the usual size, red in colour, and round in shape in some cases, in others oblong. Some of the Potatos have been cooked and ascertained to be of fair quality.

Horticulturists will no doubt watch the progress of

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these experiments with great interest. The chief result at present is that a hybrid Potato has for the first time been obtained, and with it a new strain for the use of breeders. It has been remarked that "Maglia" is a name applied in parts of South America to the Potato generally, and we have heard the questions asked, "What is S. Maglia? Has it not a mixture of cultivated Potato in its constitution?" It is needless to discuss questions to which probably no very definite answers could be made. It is enough to say further that the cultivated Potato and S. Maglia are far enough apart in character to be recognised as distinct species, and that the latter grows wild in moist climates like our own, and differs from it far more than our varieties do from each other.

A GARDENING TOUR.

(*Continued from p.* 458)

FERRIBY BROOK.—I should think that many of the readers of your pages must have experienced a great sense of loss during the last year. I refer to the death of the Rev. H. Harpur-Crewe. I know it was when his favourite autumn Croci were in blossom that he was laid to his rest, and the villagers covered him all over with their purple and blue, as they thought he would have chosen for himself. And now these pretty flowers have appeared again, and they tell us that a whole year has gone since our friend was removed. It is not only because he was the Chairman of the Floral Committee of the Royal Horticultural Society that his service is missed, but he was the kind adviser and the constant correspondent of many who had the interests of their gardens at heart. I need not say here that he had a good store of botanical knowledge to fall back on, and the experience of many years —your readers know that—he had, in addition to this, the most intimate acquaintance from a gardening point of view with the needs, the preferences, the successes, the acquisitions, and even the stock-in-hand of his numerous friends in the land. I never was surprised to hear him say "This can be found only in the Island of Minorca." "That is indigenous in some out-of-the-way part of Spain." It was just the sort of thing to expect from him—he studied his plants—but it was rather out of the common to hear such announcements as the following run off from his lips:—"Two or three years ago my friend Mr. So-and-So had a bulb or two left of this, and I doubt if any one else now has it at all;" or "You can find such a plant in a garden in Wales and scarcely anywhere else." I remember this last being literally true about Pelargonium Wallichianum, and case after case of the same sort occurs to my mind. When Fuchsia lycioides was lost to sight, and no one knew where in the world it was to be found, Harpur-Crewe at once put his finger on three places where he said it existed, and he was perfectly right. It was nothing uncommon for me to get a request for a cutting of some plant of whose existence and merits I was completely oblivious, with a sentence of this sort added to it:—"I know you have it: you told me so yourself some months ago." Harpur-Crewe was a sort of living remembrancer of all that was most worth knowing about the best collections of plants all over the kingdom. I am not singular, therefore, by any means, in deploring his loss, and in thinking that his contributions to your columns were of the greatest assistance; I only rejoice that my correspondence with him was so continuous, and our exchanges of plants flowed on in such a regular stream that I have mementoes of him all over my garden, and I act upon some hint or other which he gave me, and follow his rules from day to day with unquestioning trust.

This may seem rather a long preface to the account of a very quiet day's excursion, but it has a reason, as follows:—I spent several weeks this summer in Derbyshire, my head-quarters being at Buxton, and it struck me that that an old and much valued friend of Harpur-Crewe could not be very far off. I knew that Derbyshire was his county, and I had often heard Harpur-Crewe speak of Ferriby Brook, and he had told me that Mr. Whittaker lived there, &c. So I sent off a letter on the spot, which soon brought the desired return. I promised myself in this visit a long talk about flowers, and also about their admirer, whom I could talk to no longer. But though I had got hold of the right address, I did not find it easy at all to pitch on Mr. Whittaker's home. He lives in the greatest seclusion, though he has transactions about plants all over the country. When I landed at Duffield, to which station I had been told to repair, I found that the station-master had never once heard of Mr. Whittaker's name, and his subordinates were equally in the dark about the whereabouts of Ferriby Brook; so for a moment I hardly knew what to do, and how my walk should be started. It however occurred to me that Mr. Whittaker could not be far off from where Harpur-Crewe lived when he was a boy, and I steered by this compass and made for Breadsall at once, where I hoped to be better informed. In this I was right, and soon after I had left Little Eaton one and another of the passers-by directed me where to go, and the name of the old gardener was very familiar upon the road and that of his nursery also. A nice little plain house with not a scrap of pretension about it and with no great notice-board to say anything about its owner at all, but with creepers all over it, and Tropæolum speciosum all ablaze on one side of the house, and Cistus algarvensis and C. formosus going out of blossom on another side of it made me quite certain that my destination had been reached and that I should have a great reward for my trouble.

Mr. Whittaker very quickly appeared and welcomed me in. More peaceful seclusion could not possibly be imagined than what he enjoys, and the old man and his wife are quite of a piece with it. He is a nurseryman merely because he could not help in some way or other being interested in plants, though probably he feels like another of his craft whom I have met and who left it in consequence of vexation in parting with them. With this reservation I should think his mode of life suited him thoroughly and he is wrapt up in it. A pleasanter outlook of its sort could hardly be imagined than that of Ferriby Brook; in fixing upon the spot for his nursery he hit upon one very great advantage which helps him exceedingly. I refer to a bright running stream which traverses the whole extent of his grounds. It is true that sometimes in winter it bursts its bounds and widens into a rushing force and carries havoc along with it, but as a rule, it brings fertility to Mr. Whittaker's plants, and many thrive on its banks. If I had to fix my own habitation I would ask beyond everything else that it might have a running stream near it, and be at So-and-so Brook. As I had expected would be the case when the idea of this *in memoriam* visit first came into my mind, I heard a great deal about Harpur-Crewe from the lips of his old friend; they had known each other for years and years, and had corresponded together and exchanged plants and talked over botanical subjects times without number. With anything outside of gardening I will not trouble you now—but it was curious to me to note how Harpur-Crewe's name was continually coming to the front as we were going along. "This came from Mr. Harpur-Crewe's garden." "I saw that with him for the first time when I visited him during his illness." "You must ask his sister for something else." "He told me he did not think there was another specimen of Hibiscus Hageloni besides his own in this country." These and such as these exclamations escaped Mr. Whittaker's lips at every turn of his garden, and the name of Harpur-Crewe was as good as written upon it from one end to the other. The nursery extends over six acres, or rather more, and it is in the main devoted to the cultivation of herbaceous and alpine plants. As I had so lately visited the splendid gardens at Brockhurst and at Edge Hall, I scarcely expected to find anything which I had not seen very lately; but though, of course, this was found to be so in the main, there were yet things under Mr. Whittaker's care which may have escaped me, but which I first noticed with him. Dianthus annulosus was very pretty and entirely new to me, and so also were Niven's Dianthus superbus, Nierembergia gracilis, Campanula bononiensis alba, Swertia perennis, and Hedysarum boreale. Epilobium obcordatum is a very nice alpine, but I am afraid it must be classed with some of the most "miffy" subjects of all, by which expressive term, I mean that it seems to be all right one day, and the next it goes off, and perhaps the third it is done for. I do not yet understand its requirements, but it seemed to be all right in Mr. Whittaker's garden, and I hope he will keep it for long. Tradescantia virginica alba is of the purest possible white, and all pure white flowers are good. Dianthus Atkinsoni is a hybrid of the greatest possible merit, and the colour is splendid, its only fault being that its increase is slow. Juncus spiralis is very curious, and curious plants are sure to attract. The white form of Agrostemma coronaria is worth a place in any collection. Erica coccinea is very bright and pleasing. Pentstemon humilis would adorn any rockery. Eryngium amethystinum is of a light bluish tinge, which, as its name imports, contrasts with other things. Œnothera marginata is a good border plant. Achillea ægyptiaca, when really true to its name, is not commonly met with; Prunella Webbiana is showy enough, and Craspedia Reichardi, or Reichei, is a Composite, which seems made of gold. All these, and a very great many more plants beside them, which have not found their way to my paper, were flourishing in Mr. Whittaker's grounds, and they showed that he has had a good eye to selection, and also that he has been at it for a very long time.

In addition to his mixed borders there were others which were wholly given up to particular things, thus Hepaticas, in quantity, and no doubt of many different sorts, were evidently doing well at Ferriby Brook, and so also were Hellebores and Delphiniums, and many other different things. The houses were interesting, and one especially was so arranged that all the plants could be got at with ease, and they presented a good *coup d'œil*. It should be known that Mr. Whittaker never advertises at all. No one can accuse him of any of the empty puffing of the day. He trusts entirely to the intrinsic worth of his productions, and to his work becoming known through their means. But if one were on the look-out for a plant, more especially for what is called an old-fashioned plant, by which I mean something that was often cultivated in years gone by, and has now dropped out of sight, I know of no more likely spot for it to be found in than the nursery at Ferriby Brook, and no more likely person to give its history, its rise, and its fall, than Mr. J. Whittaker. It was a most pleasant thing to listen to him through a fine summer's day, and it reminded me of the nursery at Warminster and my old friend Wheeler, who used to preside in it. All the books in the world, and I may add all the journals, too, fall short in the way of interest when compared with the *vivâ voce* explanations of a man who has passed a long life in constant companionship with his plants, and who knows their ways and their woes because he has tended them for long—who is in sympathy with all his surrounding, and has, in fact, made them what they are. Such an one is Mr. Whittaker in a very conspicuous degree. My only regret was when our inspection of his interesting garden came perforce to an end. He had treasures in the house as well as out of it to disclose. Long drawers of a herbarium which he had made himself attested the close devotion of bygone years to his favourite studies—but they all had to be left unseen. The hands of his clock and the inexorable punctuality of the train forbade the idea of looking into them at all. Watson's *Cybele* and a *Flora of Norfolk*, which he kindly produced, could not even be opened. The gig was at the door which was to save me the trouble of a return walk to the station, and though I was very glad to have had a day among his flowers and a long talk over the life and worth of our mutual friend, I was obliged to shake hands with Mr. Whittaker very much sooner than I should have liked to do, and my visit to him became a pleasant memory, as so many others are now.

The gardens I have visited this summer are by no means exhausted, but I must leave it to some one else to record their praises. Suffice it to say that I think the visitation of different gardens is the best way of self-improvement that can be imagined, and I am greatly indebted to those who gave me the chance of learning so much. One sees things in so many different lights and difficulties are cleared away and new ideas are started beyond all expectation. The inference which I have drawn from my numerous visits, and on which I set the greatest store of all, is that the chief thing to find out is for what a garden is suited. It does not answer to take up everything just as it comes. I am not referring to any one of the gardens which have been described in your columns, but disappointments and misadventures are in my mind's eye from ignoring this simple truth. There is no manner of good in trying to make plants flourish where they do not like it themselves, and effort is wasted where it would have borne good fruit if it had taken another direction. In the gardens I have seen the plants are studied which are best suited to each of them respectively, and that is one secret of the widespread success I have witnessed. Mr. Horner's dictum is unconsciously acted on by some of the best gardeners in the land:—"I follow out that to which the flower lends itself naturally" *A Wanderer*.

FLOORE HOUSE, WEEDON.

I was much pleased with the excellent illustration of Aciphylla squarrosa which appeared in the issue of the *Gardeners' Chronicle* for Sept. 13 (p. 329), especially as I had a few days previously seen its prototype in the rocky pocket at Floore, where it seems to be quite happy. Truly, as the Editor says, Mr. Loder has a "rich garden;" indeed, I suppose the collection is now unique; what with the countless alpines and border plants, to say nothing of the succulents, one is astonished. Respecting the alpines, one can only say they are in excellent order; the flowering season of the majority was past when I was there, but the healthy tufts and numerous labels were an excellent index of the brilliant gems happily accommodated. A first-class collection previously, but since so vastly enriched by the late Mr. Harpur-Crewe's collection, it is unequalled in many respects. Nowhere besides does such a varied bulb family exist; this is saying a great deal, but I believe not too much. If you wish to form an idea of the extent of this portion of the treasures at Floore the best time to visit will be in spring; for the nonce, however, the multitude of labels which meet you in almost every conceivable position will afford ample proof of something worth looking after existing beneath the soil. The collection of Crocci is extremely rich and very numerous, and must have tried the patience of Mr. Shortt, the excellent gardener, in their arrangement, even if, as has been the case, done *con amore;* each variety is separated from its neighbour by pieces of slate, the size of the compartments varying according to the number of the specific stock. Who can value the gems here accommodated? None were in bloom at that time, but some were showing signs, and the series will open in sequence until the vernal members close the display. One cannot even hint at the varieties in this genus, the collection is, perhaps, only excelled by that accumulated by that veteran Crocus collector, G. Maw, Esq. I was sorry to hear that for some unaccountable reason C. Crewei was not found at Drayton when the bulbs were removed; it is to be hoped such a gem is not lost—the number of bulbs at any time was extremely limited. The species and varieties of Colchicums are also very numerous; many of the forms approaching each other very closely, especially those of C. autumnale; some had very narrow perianth divisions, and looked extremely pretty. C. arenarium is especially charming. The rare C. byzantinum album was nicely in flower, pure white; also the large C. speciosum, and its variety atropurpureum; the latter is particularly showy, producing large flowers of a rich magenta-purple colour. It rarely occurs in batches of imported bulbs of the species. Of the Alliums in bloom special mention may be made of A. pulchellum with good-sized umbels of rose-coloured flowers, and really a good number of the large genus.

Being in the vicinity of the houses let us turn in, and make note of some varieties to be found therein. Conspicuous, as well as in some frames, is the collection of Cacti, composed of a very rich, varied, and grotesque community, many species being extremely rare, especially those in the frames, which hail from North West America; the majority were past blooming, but many of them must have been very effective. Two pretty little succulents are Crassula rubicunda and Bolusii, the former studded with crimson-pink flowers, the latter with white corollas and red calyces, both very dwarf and wondrously floriferous. Here we notice a plant much too seldom seen—Juncus zebrinus—the porcupine-quill-like leaves being well coloured. Begonia Martiana gracilis is most charming, covered with rich waxy-pink flowers. Schizanthus retusus, comparatively rare, and a very handsome species. Fuchsia exoniensis, with its long, drooping, narrow sepalled flowers, was very showy. Two plants we noticed also which Mr. Shortt prides himself upon being the first to introduce from New Zealand alive into Europe, viz., Parsonia albiflora and Olearia populnea. A most difficult plant to introduce, which hitherto had not proved amenable to the journey from New Zealand to this country, but at last it is looking happy in a corner of one of the houses—I refer to Alseusmia macrophylla, which, according to that eminent authority upon the New Zealand flora, Sir Joseph Hooker, possesses one of the most delicious perfumes possible to appreciate. Judging from evidence from its native country the plant is most difficult to manage when removed from the hills it loves to the plains, and it remains to be proven whether its conspicuous character will be sufficiently favoured under cultivation in this country, the appearance of the plants at present is most promising, and we are sure they could not be in better hands. A huge batch of the rare Myosotidium nobile is being successfully raised from imported seed; the husk of some of the seeds were removed, with a view to facilitate germination, but the result proves it to have retarded it, for those denuded are much behind those with the husk left upon the seed. The genus Nepenthes is receiving attention. N. Mastersiana is in excellent trim, with several large pitchers; N. lanata, a scarce and difficult species, is getting along nicely, as well as several others. Orchids are also encouraged, and there is an inclination to develope this section; the plants at present under treatment are the very picture of good health, and include many good and rare kinds. Next the conservatory, which, by the way, shelters many curious and showy plants, is a very charming wall fernery; I do not refer to artistic arrangement, but to the numerous species which are becoming established in the chinks of the walls; it will ultimately become a most interesting place to the Fern lover. Here is Messrs. Backhouse's beautiful Polypod, under the name of P. vulgare trichomanioides; and opposite is the much older variety, P. elegantissimum. At one time I was very sceptical as to the distinction between the two, but they are decidedly different, and P. trichomanioides is much the best, producing copiously divided fronds, with fine segments of a light green colour. Amongst other subjects thriving happily were Pteris scaberula, Davallia Novæ-Zealandiæ, Cryptogamma acrostichoides, Pellæa adiantifolia, Mohria thurifraga achilleæfolia, Gymnogramma triangularis—this was especially happy, producing larger fronds than I had ever before noted; Pellæa densa, P. ornithopus, P. ternifolia, Cheilanthes elegans, C. hirta, C. tomentosa, the very rare Nothochlæna Fendleri, &c. Supplementing the Ferns and prettily associating with them were Fragaria indica, thickly set with bright red fruit; Fuchsia procumbens, the variegated Sibthorpia, Saxifraga sarmentosa variegata, &c., the whole presenting a very attractive appearance.

The Wall Garden.—There are many species happily established upon a dwarf mural surface, and many others arranged in a few stones at the base, the entire community in good order, and certainly very interesting. Amongst those growing freely were Saxifraga longifolia, so pretty with its spreading rosettes pressing against the wall, S. cæsia major, S. aizoides, Sempervivum arachnoideum, Ramondia pyrenaica, Androsace lanuginosa, Silene maritima, Draba gigas, Opuntia Rafinesquiana, the pretty but troublesome Linaria pallida, &c.

In the long and other borders many plants of interest were still in flower, but the evidences of a very rich past display were noticeable at every point. A good plant of Cassia corymbosa was covered with its golden-orange clusters. The grand old Tupa Feuillei was flowering and seeding freely. Here also growing in the greatest luxuriance were Japanese Anemones, Gentiana asclepiadea, Senecio pulcher, Torch Lilies (Tritomas), Rudbeckia speciosa, R. intermedia, Lobelias, Zauschneria californica, Agapanthus umbellatus, Eucomis punctata, Chelone obliqua alba, Epilobium Dodonæi, Helianthus multiflorus, &c. Passing down a side walk from the long border in the woodland, we come to the hardy fernery, which although well furnished, is not up to its usual condition owing to the excessively dry season, yet masses of Adiantum pedatum, Lomaria chilensis, male and lady Ferns in great variety, make a pretty picture. Looking more for detail you drop upon a grand tuft of Asplenium fontanum, the charming New Zealand Polystichum vestitum venustum (I have never seen this better outside), Polypodium alpestre, Lastrea recurva, the Holly Fern, &c. Many other objects are striking hereabouts, the noble Tree Ferns dotted here and there, looking really well. Peeping from the soil are numerous hardy Cyclamen, forms of C. europæum and others. The home of many hardy Orchids is also here, and passing along you come upon broad patches of Primroses and Polyanthus, all evidently at home—a very fine lot of Primula rosea of unusual strength is particularly noticeable. Mr. Shortt says the way to manage it best is to divide the plants into single crowns as soon as they have done flowering. Continuing our walk, all the way rich in odds and ends, we come upon a frame of alpines collected by Mr. Loder, last season, from their native hills, and here one is inclined to break the eighth portion of the Decalogue, not because of their showiness now, but because there are many varieties and the plants are nicely established, but they will ultimately be put to good use.

The Alpine Garden.—Here we stand hard by the miniature South Downs, and get a good glimpse, and are more than ever struck as before expressed with the pretty and natural appearance of this rockery, nay, we will not use the hackneyed term, for it does not indicate the character of this beautiful spot at all, as only a few projecting boulders and ledges are to be seen—one is draped with the brilliant Tropæolum speciosum; nearly opposite, nestling beneath a projecting rock, are the happy family of hardy succulents, all in the freshest condition: I suppose they are unique in their way. The main glory of the alpine garden was of course long past, yet many beautiful things were still worth seeing; perhaps the most conspicuous features are the several dwarf bushes of Rosa alpina, crowded with bottle-shaped receptacles of a bright orange-red colour. The following, amongst other plants, are worth noting:—Linaria peloria, Coronilla iberica, Gentiana Andrewsii, Veronica corymbosa, Erodium petræum, Œnothera eximia, Primula obconica, very full of bloom, by the side of a rock; Androsace lanuginosa, Campanula pendula, a plant I have not seen before, producing white pendulous flowers—it looks like a white variety of C. Warneri, but the time of blooming is widely different, the latter being an early spring flowering plant; Æthionema grandiflora, Origanum Tourneforti, Parnassia palustris, Satureja pygmæa, a very dwarf Labiate, covered with bright purple flowers. Two reputed fastidious subjects are apparently well established in semi-shady spots amongst shrubs, viz., Gentiana bavarica and Epigæa repens.

The arrangement of half-hardy subjects is very happy. Here is one of the pictures facing the house:—Cycads, Musa Cavendishi, Phormiums, Palms, backed up by two magnificent Cedars of Lebanon, a noble Tulip tree and a variegated Platanus—the two former bordering upon a century old. Musa Ensete is quite a characteristic plant, very abundant, in different sizes, most charmingly disposed in positions where the broad waving leaves are richly associated; the larger plants have an air of naturalness about them, as the dead and dangling leaves are religiously preserved to represent, as far as possible, the appearance of such plants under natural conditions. There is none of the orthodox style of bedding-out practised at Floore, yet, with the free use of hardy blooms, Begonias, succulents, sub-tropical subjects, Roses, &c., there is no dearth of flowers and beauty. Multitudes of curious and beautiful things meet you everywhere, and as "propagate" seems to be Mr. Shortt's watchword, there will be augmented as their merits shall demand. The host of seedlings being raised, cuttings rooted, speaks much; among the former I noticed a fine batch of the Himalayan Primulas, P. obtusifolia in particular—a species with the foliage and appearance of P. Munroi, but with purple flowers. Fancy how eagerly this will be sought by the lovers of this genus; there were also good lots of P. Parryi, Stuarti, and Sikkimensis.

The following plants were found in the garden, and being comparatively rare deserve special notice:—

Lobelia Tupa, L.—This now seldom seen plant has been in the highest perfection this autumn, its fine scarlet flowers towering above make it a conspicuous object that should be seen oftener in cultivation. It requires a moist, very rich soil to bring it to perfection.

Lobelia salicifolia (Don), *L. gigantea* (*Bot. Mag.*).—Another grand species of the same order, to be found in few collections. Unfortunately it is not quite hardy; its very fine foliage and splendid orange flowers make it very interesting. Being an evergreen, attaining a height of 8 feet, and producing several spikes of flowers, it is sure to attract attention.

Anchusa callithyrsa, Webb?—This strange-looking evergreen is sure to attract notice from its beautiful symmetrical growth and gigantic thyrses of dark purple flowers, 20 or 30 inches long, continuing in flower some time. Its hard, woody stems and rosettes of hirsute leaves, so different from the generally cultivated species, as well as its variety, makes it particularly interesting.

Galanthus nivalis var. octobrensis has been in flower in the open air since September 20, a fortnight before its usual time. This useful variety commences the season of Galanthus which will be suc-

ceeded by G. nivalis corcyrenes, which are now making their appearance above-ground—and will be succeeded by others, carrying on a succession of flowers till the end of April.

Crocus zonatus, C. pulchellus, C. Boryi, C. Tourneforti, and several others, are particularly fine and early this year.

I must forbear, and not infringe further upon valuable space, but although a gardener I must not forget my friends the emus, striding with graceful step across the grass-land in front of the house; four young ones have been reared this season, and their playful pranks were most amusing. With a fervent desire that Floore and its enthusiastic owner may long be spared to enjoy each others company these rambling remarks close. *T.*

COLONIAL NOTES.

WINTER BERRY-BEARING PLANTS.—Passing through the Botanic Gardens to-day, I observed several berry-bearing plants, all more or less effective and valuable for winter decoration either in connection with ornamental planting, or cut and displayed in the dwelling house, and more especially for the dinner-table. I will, if you permit, name a few of them:—

Cotoneaster, species various (bright scarlet berries).
Cotoneaster rotundifolia (coral like pink berries).
Eucalyptus ficifolia: this is a most beautiful scarlet flowering species from W. Australia; seed-pods prominent, dark grey, on terminal shoots—filling now well for seed.
Ilex aquifolium (colours of course as with you, but berries not so abundant).
Pittosporum undulatum (olive-green and yellow berries in clusters).
Raphiolepis ovata (dark sloe-like berries, interspersed with white flowers).
Schinus molle (berries in Grape-like bunches, rosy-pink).

With these and many other berry-bearing plants Mr. Guilfoyle, the Director, is gradually effecting improvements in the appearance of the Gardens, especially in winter when flowers are scarce. "*Penrhyn*," *South Yarra, Melbourne, July* 22.

TOBACCO IN TENERIFFE.—Vice-Consul Miller, in a report on the trade and commerce of Las Palmas, Grand Canary, says the increased cultivation of the Sugar-cane, and the introduction, on an extensive scale, of machinery and other appliances for crushing the cane and the manufacture of sugar, was carried on last year with great energy and success; so much so, that sanguine expectations are entertained that before very long sugar will become an article of exportation from the island. On the cultivation of the Tobacco plant it is stated that great hopes are entertained of this product becoming also of importance to commerce. Experience and practice having taught growers to improve upon its culture, it is now found that Canary tobacco compares very favourably with some of the best qualities grown in Cuba. The encouragement also which it seems is being held out to farmers by its use in the Spanish Government factories will likewise tend greatly to develope its production. The yield of the crop last year was only some 33,000 lb., but this was chiefly by way of experiment; and it was expected that this year's yield would be far more abundant. The Vice-Consul gives it as his opinion, judging from all appearances, that the cultivation and exportation of tobacco will ultimately take the place of cochineal, which for so long a period has been the staple product of the island.

HYDNUM CORRALLOIDES.

A WEEK or two ago a correspondent forwarded us for naming an example of this rare and extremely beautiful fungus. We had never before seen a living example, and as the Hereford Fungus Meeting was then going on we sent the specimen to Dr. Bull. It was found growing on a felled Beech near Tuxford, by Newark, Nottinghamshire, by Mr. W. Gain, who informed us that the growths had a most beautiful appearance, resembling white coral (hence Fries' specific name). As the largest example was 8 inches in diameter fungologists can judge of the great beauty of these Nottinghamshire specimens. The same fungus, we are informed, grew on the same fallen Beech stump last year. *W. G. Smith.*

M. CHARLES TULASNE.—The death of this accomplished botanist and draughtsman occurred at Hyères on August 21. His illustrations of fungi and other plants, executed in conjunction with his brother, Louis René Tulasne, are well known as among the most faithful and admirably finished botanical drawings.

OLD SNEYD PARK.

OLD Sneyd Park was formerly a very large park belonging to the church of Worcester. After the dissolution of the monasteries it became part of the estate of Sir Ralph Sadler, of whom it was purchased by Joseph Jackson, and this family was settled here for 130 years. It has since passed through several hands, but has now for some years been in the occupation of the present owner, Francis Tagart, Esq. The house is over 250 years old; it was repaired in 1740, but has been lately almost entirely rebuilt, though upon the old foundations. It is now a commodious and picturesque mansion, and contains some modern statues. The windows and the terrace command charming views of the woods of Leigh, the River Avon, and some fine rocks, while from the tower a distant view of the River Severn and the Welsh mountains may be obtained. The park and grounds, about 100 acres in extent, are undulating and varied on all sides, and contain some grand old Oak, Walnut, Chestnut, Ash, and Elm trees, which form quite a feature in the landscape. The gardens are well kept, and reflect great credit upon the gardener, Mr. E. Miller. At certain times in the year they are open to the public on payment of 6*d.* each, and the money thus obtained is handed over to the charities of the neighbourhood. Sometimes as many as 500 visitors pass through the gardens in one afternoon.

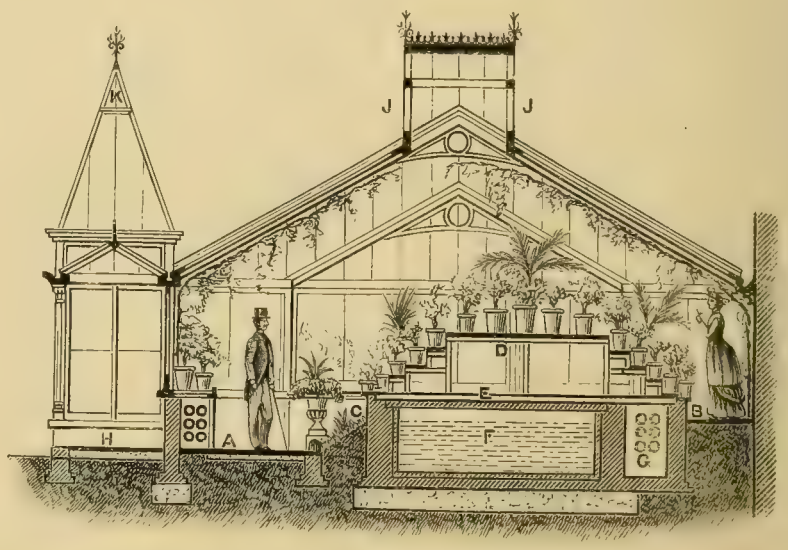


FIG. 103.—SECTION THROUGH PLANT-HOUSE, OLD SNEYD PARK.

The plant-houses, of which we give a view, form an irregular and very picturesque group of buildings; they were erected and warmed by Messrs. J. Weeks & Co. The end house with the verandah and two towers in front, has a very effective outline. As the interior arrangement of this house contains some novel and noteworthy features, we give a section (fig. 103.) It will be seen that there is a stage along the front of the house; this stage is of slate and iron, and runs round the two glass fronts of the house, which are seen in the view; the other two sides of the house are of brick, and here the path B is raised considerably higher than that marked A along the two front sides, and advantage is taken of this to form a large rain-water tank above-ground. This tank, F, is covered with stone, E, and carries a stage, D, which is thus raised nearer the glass than it would otherwise be. Between the tank and the lower paths is a sloping bed, C, of Selaginellas, with here and there a Caladium, Begonia, or other ornamental plant interspersed. This has a very novel and charming effect. Ventilation is obtained in the roofs at J, J and K. The house is well furnished with specimen plants; among them may be mentioned Latania borbonica, 10 feet in diameter; Astrocaryum argenteum, 10 feet high; Chamærops excelsa, a choice collection of twenty varieties of Croton, Anthuriums, Gardenias, &c. The walls are covered with Allamanda nobilis, Bougainvillea glabra, and other climbers. Up the rafters grow various Dipladenias. The house is warmed by means of hot-water pipes placed under the front stage, and in a channel, G, adjoining rain-water tank.

Our illustration (fig. 103) represents the plant-house only, the fruit and forcing-houses being in another portion of the garden. The principal feature here is the great crops of Peaches obtained from trees trained across the house and under each rafter, about 4 feet 6 inches apart.

THE FRUIT TRADE OF CANADA.

FRUIT raising is fast becoming an important interest in the western province of Ontario. The present dimensions of the fruit trade bring into the country an annual income of several hundred thousand dollars. The climate of Ontario, modified by proximity to the great lakes, is adapted to the cultivation of almost all fruits common to the temperate zone. The utmost diversity of soil and situation affords abundant opportunity for the growth of the different varieties, and there is an unlimited market for all the fruit that can be supplied. All the hardy fruits can be grown to perfection in any part of the province. The staple fruit of Ontario is the Apple, of which eighty-four varieties are grown, fully half of which are winter fruit. Ontario produces the best Apples in the world; they rank A 1 in the English markets, and in the large centres of consumption are preferred to home-grown fruit. The imports into the United Kingdom of Apples from Canada were, in 1882, 203,104 bushels, valued at £87,852, and in 1883, 108,113 bushels, valued at £47,000.

American Apples, and those raised in Europe, being the product of a longer season and a slower growth, lack the high colour, crispness, and flavour that are found in Canadian Apples. Winter varieties of good keeping qualities are those principally shipped abroad, and many thousands of barrels are annually exported to Great Britain, where the market value averages about £1 per barrel.

Some idea of the rapid expansion of the export trade in fruit may be had from an examination of the Colonial trade returns, which show that the value of green fruits exported from Ontario and Quebec has steadily increased year by year from £4730 in 1868 9 to £103,000 in 1880-81. Apples form the great bulk of the green fruit exported. Several varieties of Pears have attained to remarkable excellence. Plums are largely cultivated in certain sections, and Peaches grown on standard trees in the south-western counties are produced in immense numbers. Peach orchards of from 3000 to 10,000 trees are numerous. The quality of the Peaches of Southern Ontario is equal to any on the continent.

Strawberries are cultivated on a large scale, and delivered literally by shiploads in the season at the different lake ports and railway depôts, whither they are sent from the places at which they are grown.

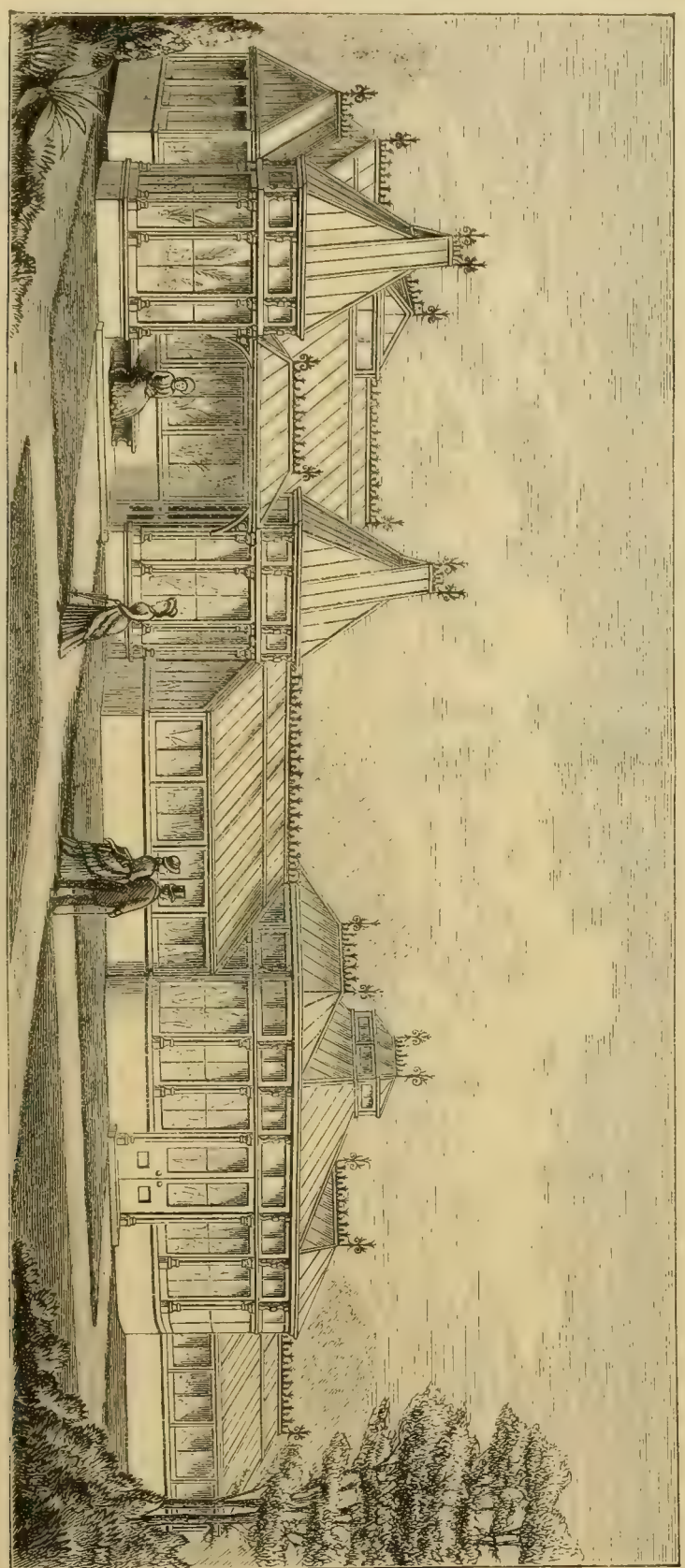


Fig. 104.—Plant houses at Old Snevd Park. (see p. 588.)

Grape culture succeeds fairly in all parts of Ontario with the hardier varieties, and is carried on extensively and with great success in the south-western part of the province for the sale of the fruit and for the manufacture of wine. Large vineyards are cultivated in the counties of Wintworth, Lincoln, Welland, Kent and Essex, and few fruit crops yield as certain a return or give as small a percentage of failures as the Grape.

It is known that Ontario, geographically, is within the latitude of the Vine growing countries of Europe, and experience is proving that under the ameliorating influence of the great lake system, Grape growing can be engaged in profitably on a large scale. The industry is growing, and promises within a few years to attain to very great importance. The total area of orchards and gardens in Ontario is 213,846 acres, and of vineyard 2098 acres. *P. L. S.* [*Apropos* of this subject, it may be worthy of note that in the cellars of the Flower Market, Covent Garden, a cargo of American Apples, consisting of 1200 barrels, were disposed of by public auction on the 5th ult. Ed.]

ORCHIDS FOR AMATEURS.

Three years ago a friend of mine who saw that I was very fond of horticulture said to me, Why not try Orchids? I had grown Pelargoniums, Fuchsias, and succulents with some success in a little greenhouse, warmed by a gas-stove outside, not inside the house, and a coil of hot-water pipes. I could keep out the frost, but I had no means of keeping up a warm temperature in winter; but the idea that it would be possible to attempt the growth of some of those which need cool treatment took possession of my mind, and nothing would do but a trial; so I set to work, and made an experiment on a very small scale. Since then the experiment has gradually grown, and now I am so successful as an amateur that I think my experiences may be both useful and entertaining to many who have attempted the same thing. I will therefore endeavour to give the readers of the *Gardeners' Chronicle* a history of my failures and successes. I have no great secret to divulge, it is true, but a vast number of details are known to me which I can find in no books, and which cannot fail to be useful to those who wish to cultivate Orchids successfully. Perhaps they are all well known to successful cultivators, but every man who tries his hand at this kind of work is not successful. This is evident to any one who attends the sales of Orchids in Covent Garden or the city. Every week or two some unfortunate man sends three or four dozen pots of dying plants to the sale. He has invested perhaps as many pounds in the purchase of the plants six or twelve months before; his gardener has failed to do anything with them, and they are sent up to be sold for what they will bring—perhaps not as many shillings as they cost pounds. I am always sorry to see them, they are signs of failure.

Every now and then too the daily papers publish an article on Orchids. They are said to be so easy to grow, why then are such disastrous failures so common? The answer is simple. Orchids, like all other plants, are perfectly easy to grow if you know how to grow them; fulfil the necessary conditions and you succeed. But the conditions must be rigorously fulfilled.

What are the conditions? is a very easy question to ask, not so easy to answer, and the reason is obvious. Orchids grow in the tropics, sometimes at the sea level in the hottest and moistest regions of our globe; they grow high up in the mountain chains close to the regions of perpetual snow; they grow on the chalk downs of England, in marshes, in woods, and are even found almost to the verge of the arctic zone. Except in the arid regions of deserts, and within the arctic and antarctic regions, they are found in every part of the world; so that the conditions depend upon the kind of Orchids which we wish to cultivate.

I need hardly say, except for the novice, that the Orchids usually cultivated are denizens of the hotter temperate and torrid zones. They are usually epiphytes—that is, they grow upon the branches of trees, or in beds of sphagnum; some, however, cling to barren rocks, and others grow in peat or sand. Many grow in close, hot forests, others on the lofty mountains. It is easy to see, therefore, that the conditions needed are very variable. Not only do the plants differ in these respects, but they possess constitutional peculiarities.

Every gardener knows how hybrids amongst Fuchsias, Pelargoniums, and other plants differ in strength and constitution. I do not hesitate to affirm that nine Orchids out of ten [in certain genera] are hybrids, I mean amongst the more beautiful and curious kinds. Scarcely two Cattleyas or two Lælias are exactly alike, except those derived from the same plant by division, or from the same seed-pod, so that even when the exact treatment is known all even of the same name do not grow equally well.

The question of treatment must depend on the nature of the locality from which the plant has been brought, and the success will often depend on indi-

vidual peculiarities inherent in the plant. Still with all these difficulties success is not hard to attain, only, to say without qualification that the culture of Orchids is easy is to mislead the unfortunate purchaser of an expensive plant and to produce a certain failure.

My experience is that any one who knows what to do with a particular plant must succeed with ever-watchful care and the strictest attention to the most insignificant details. Every plant must be tended as you would tend a bird or a child, and even with more care, as the plant cannot select for itself. A bird or a child will refuse food or water if given in too great abundance, but an Orchid cannot, without great injury, withdraw its roots from the material in which t is planted. Some, however, speak very plainly. I know that my Cattleyas do not like the compost in which they are planted if the roots shun it; under such circumstances the new roots stand out from the surface and hang over the edges of the pot without adhering to it. Much damage is done, however, when they speak so plainly, for then the roots within are usually dead or greatly damaged.

LOOK TO THE ROOTS!—I believe the best thing to do under such circumstances is to take the plant up and repot it at once. The damage done by such treatment will probably be very slight, for Orchids are very difficult to kill, and great liberties may be taken with them. A golden rule with me has been to look well to the roots, for if the roots do well the plants seldom fail, and although a plant without roots will often look very well for a time it will not succeed in the end. My own feeling is that all amateurs are too much afraid of turning their plants out of the pots when they are not succeeding, and so lose many valuable specimens.

Success, or want of success, will depend in a great measure on the species which are selected by the beginner. I believe that many may be grown with great success even in cities; others will not succeed, in my opinion, except in the pure air of the country. All those species which require a free circulation of air—Odontoglossums especially—are very unlikely to do well except in the country, but those from hot, moist, tropical forests do well in the suburbs of London, and I should not hesitate to try them even in the city itself. The reason is, they need far less air, and do not resent being shut up close in dark, foggy weather if they are not kept too wet or too hot.

When I first commenced the cultivation of Orchids I was advised to try those which require cool treatment. They are plants which come from lofty mountain regions, and my success was not encouraging. I spent a great deal of money in Odontoglossums, and my advice is, Do not try them except in pure air. I believe from what I have seen that they are easy to grow in the country, but they must have a free circulation of air about them. All they appear to need then is judicious watering and protection from great heat and cold. They are certainly ill-adapted for city life. *B. T. L.*

(To be continued.)

A HORTICULTURAL SHOW AT GEORGETOWN, DEMERARA.

IN whatever part of the world the Englishman is located, if the social surroundings admit of it, he inaugurates a show for plants, fruits, and vegetables, and introduces some of the national games for out-of-door recreation, appropriate or not as they may be to the climate.

We are reminded of this by receiving from a correspondent at the above-mentioned place a newspaper, the *Argosy*, a well-printed, ably conducted journal, in which is a full account of a horticultural show held there on September 10 ult. The building where the productions were shown was of an octagon shape, of 40 feet in diameter, having a span-roofed projection 30 feet long. The sides were lightly thatched to afford protection from sun and wind, while admitting the amount of light the more delicate plants would bear. This is an idea worthy of the attention of some of our horticultural friends here, who hold shows in ill-ventilated tents during July and August, where the heat is unbearable both for man and plants alike. As Sugar is king in this colony, a prominent point was occupied by about two dozen plants of Sugar in as many varieties, introduced from Singapore, Queensland, and the Sandwich Islands. Then there were exotic Palms and the native Palms of Guiana, gorgeous Crotons, and native and exotic Ferns. The floral section appears to have been meagrely represented, this being due entirely to the hot weather that had prevailed for the previous six weeks, for flowers are only abundant at Georgetown during the rainy seasons. Ladies competed, as here, in the cut flower and vase sections, and each under the stress of that keen rivalry which ladies alone feel to the same degree, produced some pretty arrangements in table decorations.

The collections of fruits and vegetables were about equal, and both small, and with few exceptions decidedly poor. The Orange was the best represented fruit, and there were good baskets of Shaddocks (Forbidden Fruit), sweet, bitter, and Tangierine Oranges, Citrons, Lemons and Limes. No Pine-apples were staged, and Bananas were not largely shown. The staple fruit of the West Indies, the Mango, was only seen in two instances, one of these being from a grafted tree, and said to be of very good quality. Of the delicious Avocado Pear there were a few. On the vegetable side only one or two things deserve mention—viz., a fine sample of white Yam from the neighbourhood of the Demerara River, and a yellow Yam from Berbice, which showed how well these can be grown in the colony, and if their cultivation were taken in hand would save much importation. Peppers in variety, and English Cucumbers, were shown, and we notice in the schedule of prizes the following items, some of which will seem strange to English readers:—Green Plantains, white and yellow Yams, Indian Yams, sweet Cassava, bitter Cassava, Tannias and Eddoes, sweet Potatos, Garden Eggs, Affa Yams, Creole Cucumbers, assortments of Peppers, green corn, Calalu, Ochros and European Beans, saladings, Cabbages, Carrots, Pumpkins, and Tomatos. Among fruits Bananas, Melons, Oranges in variety, Cocoa-nuts, Cocoa, Simitos, Soursops, Custard-apples and Cherimoyas.

Plants and their Culture.

GREENHOUSE FINE-FOLIAGED PLANTS.—In all probability some of the hardier genera from among these most useful subjects will have had to do duty in some position or other in the open air during the summer months. Generally speaking, when such is the case the majority will be found to require a thorough cleansing, as the closer inspection which they will get when under cover will reveal accumulations of dust and soot when the garden is in proximity to populous places; to these may also be added some insect pests, especially the white-scale, which is very partial to this section of plants. For this and other parasites reference to former Calendars will give the needful information as to the manner of dealing with them (see number for October 25, p. 527). Where there are no such insects a sponging with a weak solution of soft-soap and water will be sufficient to cleanse the plants and leave the foliage at the same time bright and glossy. It will be well to see to this work as soon as possible; the houses will thus look all the more cheerful when filled with a cleanly lot of plants. For the winter months we consider this to be even more essential than during the summer season, when vegetation out-of-doors is far more attractive. A little extra time and labour spent in attaining to a higher standard of cleanliness both in the structure itself, as well as in the plants themselves, will be well repaid. When placing the plants in the house have an eye to arranging them for effect, making prominent objects of well-grown examples and noteworthy plants of extra merit.

No doubt many such plants will be required for conservatory decoration, the more so if that building be large. The best only should be used for this purpose, bearing in mind not to overcrowd the house, which generally is lofty, and therefore far from being suited for many plants, especially those of dwarf habit. Any of the stock, therefore, that is not in the best of health had better be kept in a more favourable place. Some of the greenhouse section of Palms may be in need of a shift. Should this be the case, we would not fear to perform the operation at once, rather than run the risk of their suffering in the least from drought at the roots, which should be carefully avoided, and which in the case of those severely pot-bound ought never to be allowed. In the case of pot-bound plants the soil becomes a compact mass of roots, which, when dry, requires a large amount of water to thoroughly moisten it. If peat is the chief component in the soil, the difficulty of wetting the ball will be even greater. When this is the case, it will be a good plan to place the plant in a tub of water till it has become saturated. It will be well to follow out the same advice when a fresh shift is contemplated, assuming that the plant has well filled its pot with healthy roots. Where this is not the case it will be better not to shift the plant, but carefully remove some of the sour and inert soil. A good sound fibrous loam should form the staple in making up a mixture of soil for the hardier kinds of Palms; some ½-inch bones and small knobs of charcoal would, however, be a useful addition. Should the loam not be all that is desired, some tough fibrous peat might be rather more freely used in quantity sufficient for the roots to lay well hold of before any decomposition in its fibrous texture takes place. In repotting large specimens of these and similar plants, allowance should be made to have at least a fair amount of fresh soil to cover the top of the old ball besides allowing sufficient space for the necessary amount of water to be applied. We have a pair of Seaforthia elegans of good proportions that were repotted last year, and the usual amount of room was left when these were last potted for them to receive water. Since then we have watched their progress with some interest, the soil at the present time being nearly level with the top of the pots in each case; this has been brought about by the increased size of the roots having forced the soil upwards. These plants and all such, need shifting or careful daily attention in respect to watering. When shifting is performed at this season of the year, the plants if of convenient size will be greatly benefited by being kept in a temperate-house for a few weeks to encourage rooting. Chrysanthemums now being an important feature in the conservatory, more ventilation than usual will be needed to retain them in a fresh state, and this would not be favourable to freshly potted plants nor indeed to some others that are injured by a sharp current of air. In the case of succulent and semi-succulent plants, such as Echeverias, Agaves, and Aloes, among the former, and Yuccas, Bonaparteas, and Dasylirions of the latter, much less water will now suffice to keep the plants in a healthy state. We do not, however, advise such an extreme course of treatment for any of these plants as some cultivators pursue, believing in a moderate supply being more congenial to their well-being, even when the plants are comparatively inactive in growth. If allowed to become excessively dry at the root, the plant must of a necessity suffer more or less to the injury and loss, perhaps, of its lower leaves; we have noticed this in particular with the greenhouse section of the Yuccas, which when well cared for retain their foliage for a great length of time. If any of the Aralias are become too tall it will be well to cut them down as soon as the soil in which they are growing can be got into a dryish state, so as to reduce any chance of their bleeding. Aralia Sieboldi makes excellent decorative stuff when raised from seed, and should there be any possible chance of a plant of this species flowering and ripening its seed, it would be well to take advantage of the opportunity to thus increase the stock. Araucaria excelsa makes a beautiful plant for the conservatory; and even when small it is useful. This species can be struck from cuttings; we have not, however, had the opportunity of late to experiment in this direction, but imagine there would not be any great difficulty if the ordinary course of treatment accorded to New Holland plants be followed out. Any stock of the greenhouse Dracænas that have reached their limit in height should be cut partially through at the required length, and then have a fair-sized pot (that has been sawn asunder) placed in position over the incision; when the first pot has become well filled with roots, take another of larger size, in order to get an extra amount of roots before being finally taken off its old stem. This, though a somewhat more lengthy process, will greatly enhance the safety of retaining the greater part of the foliage intact when quite dependent on its new set of roots. *James Hudson, Gunnersbury House Gardens, Acton, W.*

Fruits Under Glass.

Peaches and Nectarines.—The importance of early planting and root lifting is generally recognised, and where these operations remain unfinished no further delay should be permitted. Where the wants of the future can be foreseen, considerable advantage can be derived by obtaining young trees, and growing them on open walls for a season or two previous to placing them into permanent situations. We adopt this plan, and recommend it to those who do not. In replanting trees thus at hand it is perfectly safe—indeed, it is the correct course to follow—to replant immediately previous to the commencement of the fall of the leaf, before the roots become inactive; such a practice is, however, impracticable where trees have to be brought from a distance. We have recently moved a fine young tree of Barrington Peach (which had been trained upon an open wall) into a late house before any of its foliage was ready to fall, and by keeping it syringed several times daily the shift has had little if any effect upon it. Some trees that we planted in a similar manner last autumn have this season made exceedingly satisfactory progress, and have carried good crops of fruit. Although the best results invariably attend early autumn planting, the operation can be safely enacted any time during winter or early spring provided the weather is favourable; indeed, some cultivators have with good results planted trees even when at the point of bursting their blossom-buds. This system does not, however, commend itself in a general way, and certainly should not be pursued from choice. The trees in the early house having been made ready for forcing, the house may be closed at the end of this month or beginning of next: we usually close ours on December 1. If the night temperature can be kept up to from 40° to 45°, and that for the day to between 50° and 55° without fire-heat it should not be applied, for the trees will proceed more safely without it, until there is a perceptible swelling of the buds; the day temperature may, however, advantageously reach 60° with the aid of the sun. Any borders that are at all dry should be thoroughly soaked with tepid water, and a moderately moist atmosphere must be preserved by damping the walls and floors of the house, while the trees should be syringed with tepid rain-water at about 9 A.M. and again at 2 P.M., if they become sufficiently dry to require it, this is a matter that calls for good judgment, as a too free use of the syringe, by keeping the buds almost constantly wet, or a very dry atmosphere, will occasion serious injury; an error is, however, particularly before fire-heat is used, more likely to be committed by bringing the syringe too often rather than seldom into employment. Where the trees have roots in outside borders a firm covering of leaves should be afforded, from which much benefit will be derived, provided it is kept dry by being covered. The process of cleansing successional houses, and pruning, cleaning, and tying the trees in them, should be performed in rotation, as they become ready, while the borders should be kept moist, and be top-dressed. It is always advisable to accomplish this kind of work as soon as practicable, especially the use of insecticides, as they can be more safely and strongly applied, and therefore be more efficacious early in the resting period than after the buds commence to swell.

Melons.—Those who, like ourselves, have to supply late Melons, will have found the task this season a comparatively easy one. The weather has been so exceptionally favourable that it has enabled ripe fruits to be produced throughout October, surpassing in quality many of those that ripen during August in ordinary seasons. Such encouraging results ought to instigate the more general cultivation of this fruit for late consumption. The latest plants should have by this date netted and swelled their crops, and the fruit at this close approach to maturity must be surrounded by a high, dry, and circulating atmosphere—conditions favourable to enrichment of flavour. Our latest plants, which this autumn consist of Best of All, Hendre Seedling, and Read's Scarlet-flesh, are grown upon a well firmed narrow ridge of soil, with a bed of leaves for affording bottom-heat, in which the roots freely ramify without any injurious effect, in fact, we are inclined to think an advantage is thus gained by its admitting of the ridge of soil being left unwatered from the time the fruits are netted, thus considerably lessening the probability of canker in the stems and splitting of the fruits, which the latest crop is most subject to.

Vines.—Under the influence of the sunny weather which prevailed when the general crops of Muscats were ripening, they have coloured and matured remarkably well this year with considerably less assistance from the heating apparatus than is usually requisite in order to bring them to perfection; this satisfactory condition is gratifying, not only when looked at from the point of flavour, but also on account of the excellent keeping properties such fruit possesses, which so far has precluded cause for anxiety. A critical time—the fall of the leaf—is, however, nearing, when very careful attention will be called for to keep the bunches in good preservation; for this end they should be closely looked over, at least every other day, when decaying berries should be removed with as little injury as possible to sound ones, the leaves should be gathered up as they fall and a dry circulating atmosphere maintained, by opening the ventilators more or less as external conditions admit of. Sufficient fire-heat must be employed to keep the temperature of the house from falling below 50° during severe weather, and a few degrees above that outside when it is mild, while cutting draughts must be avoided. If the directions already given respecting covering internal borders with dry non-conducting material, and protecting external ones from rain, after being well moistened, have not been carried out, no time should be lost in doing it. The above remarks apply likewise to all varieties of late Grapes, the latest of which should have been together with their wood perfectly ripe some weeks since, and for that reason had fire-heat diminished. The bunches still remaining in the late Hamburgh-house, may now be gathered with their lateral growths attached, to be inserted in bottles of water in the customary way and placed in a late house where fruit is hanging. Here they will keep well, and as long as upon the Vines; we are treating ours in this manner, for the twofold object of giving the Vines the benefit of liberal ventilation, complete rest, and saving of fuel. This practice is especially applicable where the inside borders are unsatisfactory, as it permits of the accomplishment of their renewal before the foliage falls and the roots are dormant. We find Alnwick Seedling keeping well with Alicantes, and the cultural treatment suitable to the latter appears to suit the Seedling admirably, with the exception that extra pains (with us at any rate) is needed in setting its fruit. The flavour of its fruit, which was well coloured early in September, is at the present time deliciously brisk and piquant, and far preferable to our taste to Hamburghs ripened about the same time; and we think this old variety, although a general favourite and indispensable as a forcer, might generally be made to give more room to this noble-looking kind, and the highly flavoured Madresfield Court, at least for late summer and autumn use, particularly where the soil is found to suit them. *Thomas Coomber, Hendre Gardens.*

The Hardy Fruit Garden.

What to Plant, and How to Do It.—Now is the proper time to plant all kinds of fruit trees and bushes in the orchard. After many years of experience and much consideration I unhesitatingly say that fruit trees ought to be grown by themselves, and not in the kitchen garden, as one frequently sees them; therefore set apart a piece of ground according to the requirements of the family for their cultivation. But when the importance of a plentiful supply of fruit at the table is considered, it deserves more than a passing thought being given to the formation of a good orchard, and the maintenance of the same. The situation should not be on the top of a hill, where the autumn winds will blow the fruit from off the trees before it is ripe; nor in a valley, where the spring frosts will injure the blossom; but, if possible, on the slope towards the south, and a point or two to the east or west is of no importance, provided there is or can be planted plenty of shelter, and this we would wish to say is indispensably necessary. The Crab, Sloe, White Thorn, or Mountain Ash will grow and bear fruit in exposed situations; but our choice edible fruits, brought from all quarters of the globe, must be cared for in soil, situation, and shelter; the former should be at least 18 inches deep, and trenched previous to planting. A plantation of forest trees round the orchard should then be made—the Scotch and Austrian Pines are the best for that purpose. The following twelve Pears begin to ripen the middle of July, and will yield a regular supply for as many weeks, when those which we recommended a fortnight ago for the east wall will be found to succeed them. The season of most Pears is of short duration; with a few exceptions they only last fourteen days, therefore it is not wise to have very large trees, consequently the pyramidal form worked on the Quince is best; they bear directly, and can be kept fruitful. The first ripe is St. Swithin's, then Doyenné d'Ete, Citron des Carmes, Beurré Giffard, Jargonelle, Bon Chrétien, Beurré d'Amanlis, Souvenir du Congrès, Beurré Bosc, Count de Lamy, Seckle, Fondante d'Automne, Belle Julie. The Apple requires much the same treatment as the Pear; if the orchard is small the trees will be best grafted on the Paradise stock, when they will bear the same season and occupy but little room; but if the orchard is a good size they should be ordered from the nursery on the free stock, and from 3 to 6 feet of a clear stem. This plan has many advantages, inasmuch as the bush fruit can be grown under them, or ultimately when well established, if desired, the orchard can be laid down in grass and stock can be fed amongst them; but unless the soil is very good we do not recommend this because the grass has a tendency to rob the trees of their nourishment and the fruit becomes small and wanting in size and juiciness. The following is a list of two dozen excellent dessert kinds, arranged in the order of their ripening, and that will keep up a supply eight or ten months in succession. I begin first with Mr. Gladstone, which comes into season in July; Oslin, Red Astrachan, Kerry Pippin, July Pippin, Summer Pippin, Irish Peach, Worcester Pearmain, King of the Pippins, Fearn's Pippin, Blenheim Pippin, Scarlet Nonpareil, Gascoyne's Scarlet, Ashmead's Kernel, Ribston Pippin, Cox's Orange Pippin, Winter Queening, Golden Harvey, Reinette du Canada, Redleaf Russet, Sam Young, Golden Knob, Sturmer Pippin. I shall give the names of two dozen kitchen Apples:—Keswick Codlin, Duchess of Oldenberg, Lord Suffield, Stone's Golden Noble, Warner's King, Stirling Castle, Peasgood's Nonsuch, Tower of Glamis, Lane's Prince Albert, Beauty of Kent, Northern Greening, Lord Derby, Winter Hawthornden, Wellington, Winter Coleman, Waltham Abbey Seedling, Mère de Ménage, Alfriston, Rymer, Smart's Prince Arthur, Annie Elizabeth, Bess Pool, Norfolk Beaufin. I may add that Wellington or Dumelow's Seedling is the favourite here for mincemeat, while Lemon Pippin is for Apple jelly. Oftentimes many of our tender Apples are improved by being trained cordon fashion, or better still, in the old espalier. A substantial strained wire fence in a sheltered part of the garden or orchard makes the best framework whereon to train the trees. Pitmaston Pine-apple, Ribston, Golden Harvey, Gravenstein, Cox's Orange Pippin, Adam's Pearmain, Northern Spy, Hughes' Golden Pippin, Washington, Redleaf Russet, Melon Apple, all do well when trained thus. Plums do exceedingly well either as pyramids or standards, depending on the situation; if it is high and exposed of course the dwarfs have the advantage. It is well to plant them for succession—they are better thus in every way: their period of use is generally August and September. Rivers' Early Prolific, Czar, New Orleans, Deniston's Superb, Green Gage, the Sultan, Belgian Purple, Pershore, Prince Englebert, Transparent Gage, Victoria, Wydale, Autumn Compote, Belle de Septembre. When the trees arrive from the nursery not an hour should be lost in getting them planted and securely staked, and as soon as possible afterwards carefully named with the "Acme" label, which is the best I have yet seen for fruit trees, and they are very reasonable in price. If this is attended to, the fruit will be doubly interesting when the name is found attached to the tree in after years. *J. Rust, Eridge Castle, Sussex.*

Huge bunches of Hyacinthus candicans in the market show that summer is loth to go, and we have further evidence of the same fact in the presence on our table of a bunch of flowers from Mr. Ware, of Tottenham, including such pretty things as Polygonum vaccinifolium, whose slender spikes of pink are so showy on a rockery; Scabiosa caucasica, with its large plate-like flower discs of delicate lavender; Armeria cephalotes rubra, with deep rosy-pink flower-heads, and Armeria plantaginea rosea, very similar to the last, but larger and paler.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov 10	Stoke Newington Chrysanthemum Show (two days) Sale of 1000 lots of First-class Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Nov. 11	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Brighton Chrysanthemum Show (two days) Kingston and Surbiton Chrysanthemum Show (two days). Reading, Lambeth, Croydon, and Putney Chrysanthemum Shows. Sale of Bulbs, at Protheroe & Morris' Rooms. Sale of Nursery Stock, at the Millord Nurseries, Godalming, by Protheroe & Morris (three days). Sale of 2000 Lilium auratum and 4000 Tuberoses (African), at Stevens' Rooms.
WEDNESDAY,	Nov 12	Colchester and East Essex Chrysanthemum Show (two days) National Chrysanthemum Society's Show, at the Aquarium, Westminster (two days). Bath Chrysanthemum Show (two days). Sale of Lilium auratum Bulbs, at Protheroe & Morris' Rooms. Sale of Roses and Bulbs, at Stevens' Rooms.
THURSDAY,	Nov 13	Richmond Chrysanthemum Show (two days) Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Nursery Stock, at Leytonstone Nursery, by Protheroe & Morris (two days). Sale of Imported Orchids, and 5000 Tuberoses (African), at Stevens' Rooms.
FRIDAY,	Nov. 14	Chrysanthemum Show, at the Crystal Palace (two days). Huddersfield Chrysanthemum Show (two days). Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 15	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

IN few particulars is there a greater apparent antagonism between physiologists and practical men than in the matter of PRUNING, and as that operation is now in active progress a few remarks upon it may not be out of season. In the first place the practice is the outcome of the accumulated experience, not of years, but of ages, and there is no sort of doubt possible that the practice, if judiciously carried out with the consideration of the nature of the particular tree operated on and the requirements of each individual case, is fraught with advantage from the pruner's point of view. The objections raised by the physiologists are irrelevant, because they do not sufficiently remember that the pruner is seeking his own advantage, not that of the plant. Hence, the objections raised by the conservative surgeons of the present day as to the barbarous mutilation, the waste of force and of stored material, the loss of time, and so forth. Objections reasonable enough when raised by the surgeon in the operating room, are of no moment in the forest or garden. Granted that the practice is from one point of view barbarous, from another the sacrifice is not only justifiable, but even beneficial. The immediate advantages outweigh what ill effects may be consequent on possible disease, decay and shortening of life. There are plenty more plants to be had, and it is easy to keep up a succession to supply the losses occasioned by the essentially unscientific treatment of the pruner. Indeed, it is only unscientific when looked at from one point of view, and that not the one of the forester or fruit grower. From their point of view the process is a strictly scientific one, arrived at by a long period of induction, and competent to bring about certain definite and foreknown results.

One reason why the physiologists and the practitioners are at issue in this matter is that neither understands the language of the other. The practice may be right—of that the physiologist feels his incompetence to speak, the explanation of it he knows must certainly be wrong. The astonishing things that the sap is said to do, rushing hither and thither, turned by the art of the gardener in this direction or in that, stopped on the main line, sent on with extra speed on the branch lines, stimulated here, checked there—these and similar statements, the heritage of past times, still encumber our gardening books, even the best and most recent of them, although they have long since been exploded by the more exact knowledge gained by the vegetable physiologists. Successive generations of gardeners learn these modes of expression, and look upon them as dogmas to be accepted without dispute. Successive generations of physiologists are in different case. There is no finality in physiology, but constant progress—very inconvenient, no doubt, because the teaching accepted as true last year by no means represents the state of science this year. But however inconvenient this progress may be, it tends always in one direction — that of improvement, and diverges more and more widely from the dogmas that passed muster in the middle ages, and which are still looked on as gospel by the practical man. But while this progress enables us to say definitely and without doubt that much (not all) of the explanation afforded by the pruner is essentially false, yet it must be admitted that in too many cases the physiologist has not yet substituted anything better. In many points he has successfully overthrown, but he has not so successfully built up. Such phrases as "morphological force," "negative geotropism," "*vis a tergo*," "*vis a fronte*," and a host of similar expressions in modern physiological text-books, are confessions of ignorance, expressive perhaps of observed phenomena, but not explanations of those phenomena. They are mere negations, and if not recognised as such, will prove as destructive to scientific progress as the worn-out dogmas of past ages. Hence, if the physiologists complain of the language used by the practitioners, they are not entirely free from reproach on similar grounds. The importance of correct practice no one will deny, but the perfection of theory is at least as important, as upon it depend the more rapid progress in the future, and the power of coping with new and unforeseen circumstances. Theory based on actual experiment affords, as is stated in the preface to Lord BACON'S *Silva Silvarum*, the best way to "unloose men's minds, being bound, and, as it were, maleficiate, by the charms of deceiving notions and theories, and thereby made impotent for generation of works; but only nowhere to depart from the sense and clear experience, but to keep close to it."

In trying to come to some understanding as to the why and wherefore of pruning, we must therefore modify our notions as to what the sap is and what it does. We must not look on it as a fluid of uniform, or at most a twofold, composition, running a definite course in definite channels. All this is false, as has been told over and over again in these columns, and may be studied at length in physiological books. It must suffice here to say that it is not the rush of sap to this or to that bud which produces the phenomena we witness, but this or that bud or growing point being favoured by position, exposure to the heat or light, or both, grows sooner, faster, or more strongly than others not so favourably placed, and consequently consumes more food, which food it gets mainly from the supplies already stored up, not from any immediate supply. It is not the sap which is alive and does this or that; the sap is a mere solution of various substances, concocted by living organs, and to some extent not to be made otherwise, but it is not living in the sense that the blood of an animal is living. The living part of the blood resides in its corpuscles which float in the liquid part of the blood and are carried to all parts of the body. There are no such corpuscles in the sap. It is therefore not the sap which is alive but the living matter, the "protoplasm," in the bud and the growing point. Food is required to enable it to maintain its life and grow, and that food is supplied from the reserve stores by the agency of the sap.

In dealing with this question of pruning and the rational explanation of its advantages we may look upon a plant as the possessor of so much capital, part of which is "floating" or in immediate use, part of which is in reserve to meet future needs and contingencies. The capital is derived from water, air, soil, &c., with the co-operation of so much sunlight and sun-heat; it is laid out or expended in the maintenance of old, in the growth of new tissues, and, as already said, it is partly carried to the reserve. The processes of growth and of reserve are inseparable, but one may predominate over the other at any particular time, according to the hereditary tendencies of particular species, and the circumstances of seasons, &c. Some plants, especially those of cold countries, and where a period of prolonged drought occurs, have a marked tendency to reserve a large part of their capital in such banks of deposit as tubers, fruit-spurs, &c. All plants do this more or less—even annuals store up food in their seeds—and the process is often associated with, or rather followed by, a period of comparative rest brought about, not by the action of storage, but by external causes. In this manner we see flowers expand and fruit formed on the wood of last season's growth. In other cases, as in annuals, growth is more rapid and continuous, the tendency to store up capital is less marked, and in such cases we see flowers and fruit rapidly perfected on the wood of this season's growth. The rational explanation of pruning, then, may be elicited from an examination of the nature and mode of growth of the plant operated on, the ascertained effects of pruning, and of the practical objects it is desired to attain—points which we propose to consider on a future occasion.

—— ABIES CEPHALONICA.—It was curious to read the little that was known of this fine tree at the time the *Pinetum Woburnense* was published, and to find oneself beneath a stately specimen in Mr. WATERER'S nursery lately. When the book mentioned was written, it was not known whether the cones grew upright or point downwards, but there is no doubt at all about the matter now, and the top of the Knap Hill specimen was covered with cones growing as the cones of Silver Firs should. At Pampesford the finest specimen in 1883 had a height of some 50 feet. The particular specimen we figure (fig. 105), however, came from North Wales, and when Mr. WEBSTER first forwarded the cones they were singularly beautiful, the scales being of a rich velvety brown-fawn colour, set off by the recurved tips of the bracts, which were golden-brown. The stiff bristle-like, dark green leaves also are a characteristic of this fine species. They come off on all sides of the branches but are turned all in one direction. There is a thick layer of strengthening cells immediately above, while on the lower part of the leaf are two resin canals. It is a native of the mountains of Greece, and is for the most part hardy throughout Britain, but when young it is apt to be "spring tender," a quality it loses as it grows older. A. panachaica and A. apollinis are mere synonyms for this species, which is by some considered as only a variety of the common Silver Fir, but which for garden purposes is abundantly distinct.

—— THE APPLE CONGRESS AT CHISWICK, 1883.—We are requested to state that the report on the Apple Congress, which was held at Chiswick in 1883, is now ready, and that nurserymen and seedsmen who desire to purchase it in large quantities can have it on special terms on application to Mr. J. D. DICK at the offices of the Royal Horticultural Society at South Kensington.

—— DR. G. HABERLANDT.—This well known botanist has recently been appointed to the office of Professor of Botany Extraordinary at the University of Graz, and holds likewise the post of a supplementary Professorship at the High School of the same town.

—— UNDERGROUND FUNGI OF DENMARK.—A volume on this subject by Mr. E. ROSTROP is being published by the house of JÖRGENSEN, in Copenhagen. The author gives the results of his own and other persons' observation and researches in Denmark. After first explaining the meaning of the phrase, "Underground fungi," and carefully reviewing the literature bearing on the subject, examples of many

rare species are given, as an Amylocarpus encephaloides, Curr., that was found at a depth of 10 inches upon a root of Fagus sylvatica, destitute of rind. Finds on the roots of Clover, Vitis, Daucus carota, &c., are also noted.

—— Mushroom Growing.—To meet the assumed want of a little work on the cultivation of the Mushroom artificially by amateurs in town or country, Messrs. Hurst & Son, of Houndsditch, London, have issued a pamphlet of about ten pages, which contains almost everything in the way of instruction that a person—even one totally ignorant of anything pertaining to the growing of this esculent—could need.

——. "The Prince of Palms."—A popular account of the Cocoa-nut Palm and its products, with incidental reference to other Palms. It is illustrated with excellent woodcuts, and is altogether well got up. It is, however, to be regretted that the compiler did not submit the proof-sheets to the scrutiny of some competent botanist. The account of the rise and progress of the manufacture of "Coir" will be read with interest. In 1882 no fewer than 11,590 tons of raw material were introduced, whereas in 1866 only 5246 tons were imported. One mat made by Messrs. Treloar for the principal entries to the Health Exhibition measured more than 400 square feet. The details of the collection of the raw material and its manufacture will be novel to most readers, and of interest to all,



Fig. 105.—Abies cephalonica. (see p. 592)

—— The Royal Gardens, Kew.—A new proof of the increasing popularity of the Royal Gardens, Kew, is given in the appearance of a new penny Guide which is so far superior to those which have hitherto been sold in the neighbourhood of the gardens that we have pleasure in drawing attention to it. It is called a *Popular Guide to Kew Gardens*, and consists of a brief historical sketch of the gardens, followed by a short description of the principal houses and other features, which are all accurately described, their position being indicated by a capital letter, referred to on a whole page plan. Space in this Guide has been economised by the omission of the scientific names of the plants, which to the general public are perhaps of little use so long as the common names are rightly given, and they appear to be so in this case. The use of block letters mixed with the general type draws attention at once to the house or object referred to. The Guide consists of fifteen pages, and is illustrated with six woodcuts—views of the Pagoda, Palm-house, Pagoda Vista, Ruined Arch, Museum, and Sun Temple. Good type and paper are used, and the whole is printed in chocolate-coloured ink. The publishers are Henry Good & Son, 12, Moorgate Street, and it is on sale at the railway bookstalls.

—— Diseased Leeks. — Some badly infested foliage of Leeks was forwarded for our inspection a few days since, and the annexed observations of Mr. Worthington G. Smith on this and other species of minute funguses allied to it may be of interest to our readers, the more so as Chives and other of the Onion tribe are annually attacked, causing the decay of the leaves ; but gardeners do not as a rule attribute this to anything more than the effects of natural decay,

occurring as they do at the end of the summer :—"The orange fungus so badly infesting Leeks at Coldstream is Uromyces alliorum, sometimes called Uredo or Trichobasis. It is not new, but is local and erratic in its appearance. We have never seen a case so bad as yours, although we believe there was an unusually bad case at Edinburgh a few years ago which led to a lawsuit, the grower believing his crops had been injured by a neighbouring factory. It is possible that this fungus is one form of the pest named Puccinia mixta, which attacked Chives so badly near Shrewsbury a year or two ago; it was reported on in this paper by Mr. WILLIAM PHILLIPS, F.L.S."

—— THE JHAND TREE (PROSOPIS SPICIGERA).—Amongst the specimens recently received at the Kew Museum from the Forestry Exhibition at Edinburgh is the remarkable tap-root of the Jhand tree (Prosopis spicigera). The tree, it seems, was grown on the bar of land between the rivers Beas and Ravi. The specimen was sent from India, to illustrate the depth to which this tree sends its tap-root to seek for water. The following description accompanied the specimen :—The length of the tap-root is 62 feet altogether, and it is probable that 5 or 6 feet more might have been left in the ground. The root descended vertically for 11 feet, where it reached the sand and found sufficient moisture to exist : here it twisted in a most curious manner, and taking a direction at right angles to its previous one, spread along the sand; at about 10 feet further along the root turned to the left, and making rather a wide loop, crossed itself at the same level. It is thus that probably 5 or 6 feet have been cut off from the end of the root by the workmen digging it out. The root crossed itself at about 8 feet from the place where it began to take a horizontal direction.

—— RICHARDIA ÆTHIOPICA.—A group of these at Gunnersbury Park is deserving of notice because of their dwarf sturdy growth, and deep green leathery leaves. They are growing in 32 and 24-sized pots, and flowering freely; but their hardy growth is due to Mr. ROBERTS having potted them in the stiffest soil he could find. They are in a house where they have plenty of air and light, and as the heavy soil was pressed down firmly about the roots they do not require so much water as might have been expected. In the case of the Gunnersbury plants this method of treatment answers admirably.

—— SALVIA BETHELLI.—Of the batch of Salvias introduced by Mr. CANNELL a few years ago S. Bethelli appears to be the most useful. The others have, no doubt, failed, to a great extent, to answer the expectations formed of them, and they are not frequently met with in gardens, while the old Salvia splendens, with its rich vermilion flowers, remains a favourite to this day. At Gunnersbury Park Mr. ROBERTS grows S. splendens and S. Bethelli rather largely; the latter, in the form of vigorous plants of large size, is flowering freely in one of the vineries, and if the spikes of flower are cut when nearly developed, the pale purple glow of the flowers is very pleasing. Mr. ROBERTS raises a batch of plants every year by means of cuttings taken in the spring.

—— CHRISTMAS ROSES.—Probably owing to the warm dry season these appear to be getting very active at an unusually early period. The giant-flowered H. maximus, or H. altifolius, is already throwing up its blossoms in a heavy loam under a west wall near London, and the ordinary H. niger is already thrusting its flower-buds above the surface, and if established plants be lifted and potted, using pots only just large enough to take the roots, with the addition of a little soil, which should be pressed firmly about them, the plants will flower well in a cold frame or cold house, unless the weather should prove very severe and frosty, and then the help of a little warmth is needful. The risks which Christmas Roses run upon blooming in the open air at mid-winter are great, unless a light or frame can be placed over the plants, which it is not always convenient to do. In a cold house, with as much light as can be given, the flowers open of the purest white, and they are very useful at Christmas. Plants that are lifted in this way are not materially checked if as soon as they have done flowering they are planted out-of-doors in rich loam. But it is well to let them rest for a season, and therefore the collection should be divided into two batches, lifting one in alternate years. When planted out it should be in a deep loam, deeply stirred, and enriched by the help of some manure. A surface mulching of leaves and dung during winter greatly helps the plants.

—— NERINES AT GUNNERSBURY PARK.—Mr. ROBERTS has these in very fine form just now. There are a large number of plants growing in 48-pots in a cold frame plunged up to their rims in tan, and they appear to consist of two species, viz., N. coruscans, with large heads of brilliant vermilion-scarlet, very handsome, bold, and showy; and N. Fothergilli, with equally fine heads of crimson flowers flushed with purple. The former, if the true N. coruscans, throws off very freely side growths, which soon become flowering bulbs. When they have done blooming the plants are put into a gentle bottom-heat for the winter, then repotted, only giving just such a shift as is necessary, and then gradually allowing them to die off and go to rest. That this system of treatment answers well is abundantly shown by the fine specimens Mr. ROBERTS is now flowering with such conspicuous success.

—— PINE LADY BEATRICE LAMBTON.—This appears to be a free growing variety of the Pine-apple; but notwithstanding that the fruits attain a large size Mr. ROBERTS, of Gunnersbury Park, states he has not been successful in ripening it; it reaches a certain stage, and then decay sets in near the base of the fruit. It is said that eminent cultivator, Mr. DAVID THOMSON, of Drumlanrig Gardens, experiences the same difficulty. Mr. ROBERTS has at the present time some fine fruit, and he is hopeful by means of a change of treatment to thoroughly and successfully ripen them. Let us hope he will not fail to secure this end.

—— HYDRANGEA PANICULATA GRANDIFLORA.—When we published our illustration of this plant it was received in some quarters with polite incredulity, in others with the assertion that the artist had "embroidered" his subject, and so on. The real truth is that the artist, though he doubtless faithfully—reproduced the specimen before him at the time, considerably understated the potential size and magnificence of the plant. A quarter of this plant in Mr. WATERER'S nursery at Knap Hill, perhaps one-eighth of an acre, at the end of September afforded a sight the magnificence of which can hardly be exaggerated.

—— ODONTOGLOSSUM ALEXANDRÆ.—A magnificent bloom of this charming autumn bloomer was sent us by Messrs. IRELAND & THOMSON of Edinburgh, which was of remarkable substance, and good regular form, the crest being prominent and of a beautiful bright tint. The width of the flower in its widest spread was a trifle over 4 inches. The spike from which it was taken is said to have thirteen flowers on it.

—— PELLIONIA PULCHRA.—For general horticultural purposes this plant may be inferior, in point of usefulness, to the older and better known P. Daveauana, on account of its slower growth, but in point of beauty or neatness it is far superior to that species. P. Daveauana is described in the *Gardeners' Chronicle*, vol. xxii., n. s., p. 262, and the species under notice differs in the proportionately shorter, broader, and blunter leaves, which are of an intense green colour, and irregularly blotched all over with grey on the upper surface. The flowers are of the same uninteresting and inconspicuous character as most others of the Nettle family, but as a foliage plant it is a decided acquisition. It may be grown in pans or allowed to ramble over a piece of tree Fern stem, into which it will root and prove itself very attractive. It has flowered in the Begonia-house at Kew.

—— AGAVE AMERICANA FLOWERING.—The fact of this plant flowering but very rarely in this country under the ordinary treatment given it seldom fails to make the happy possessor of a specimen in bloom place the fact on record. If the Agaves were treated more in accordance with their requirements, and which, being natives of the warm temperate zone, are those of more heat during the period of growth, and less cold quarters than stables and outhouse in winter, these plants would grow quickly to flowering dimensions, and would make much finer specimens in a short time than we usually see them. The following is from a correspondent at Cherkley Court, Leatherhead :—"Replying to your enquiry regarding the plant of Agave americana, I beg to say it is, as near as I can tell from information from the previous owner, about ninety-six years old. We have a pair of them, only one flowering. I anticipate the other plant may flower next season. They have been in my charge about thirty-three years, but have been much knocked about in that time, owing to change of residence and accidents, a large Elm falling on them and breaking the leaves, &c. Both are in tubs. The leaves are about 6 feet across, the length in stem is about 14 feet; altogether about 16 feet 6 inches. There are seventeen fascicles, or trusses, of flowers, besides the top one, which has now just opened."

—— CHRYSANTHEMUMS AT THE TEMPLE GARDENS.—These exhibitions continue to be visited by large numbers, who appear greatly to appreciate the fine displays at both places. Both Mr. WRIGHT and Mr. NEWTON deserve great credit for the perfection to which they have brought their collections. In Mr. WRIGHT'S (Middle Temple) we noticed some very handsome blooms of Lord Wolseley, also Mr. W. H. Morgan, a fine straw-coloured incurved, and some fine blooms of Elaine. Amongst the newer varieties the following were most to be admired :—Boule d'Or, a fine yellowish-bronze Japanese, distinct; Salteri, a fine carmine-red, shaded with scarlet, Japanese flower; Gloria solis, a large bright golden-yellow flower, having the outer florets shaded with orange; Comet, a showy Japanese flower, with bronze centre, red and brown changing to yellow; Mrs. Townsend, a fine crimson Japanese; Roseum superbum, a fine distinct Japanese, having a rosy-lilac shaded with chamois flower; Souvenir d'Amsterdam, another very fine large Japanese of a rich violet-crimson tint; and Brunette, a fine light brown flower belonging to the pompon class. Mr. NEWTON (Inner Temple) had some good blooms of Prince Alfred; Madame Closs, a large Anemone flower, rosy-violet in colour, with white-tipped yellow centre; Angèle, a rose-lilac Japanese with twisted florets; Margot, a rose-chamois Japanese flower; Alexandre Dufour, another Japanese variety, with rosy-purplish blooms; La Joyeuse, a large rosy-purple free bloomer; Bacchus, a fine Japanese flower having rich velvety-crimson, reverse white petals; and Thomas Todman, a quilled golden-yellow variety, distinct.

—— BUDDLEIA CRISPA.—Specimens of this may be seen in the open air at Kew, both in the collection and against the wall of the Economic-house, in which latter place it has flowered. It is a Himalayan species, originally introduced to this country by Major MADDEN, and again collected in Afghanistan by Dr. AITCHISON in 1879, at elevations ranging from 4000 to 8000 feet, and must therefore be possessed of a considerable degree of hardiness. It is No. 444 of his collection, and is described as a shrub growing to the height of 12 feet in its native habitats. The pale purple flowers are collected in terminal cymes, and the whole plant, with the exception of the corollas, is covered with a white felted tomentum. This is especially so on the underside of the narrowly ovate, bluntly serrate leaves, and gives to the whole shrub a very hoary appearance. There is a figure of it in the *Botanical Magazine*, t. 4793.

—— RUNNER BEANS.—There are just now many growers of this serviceable and favourite vegetable who are lamenting that they did not take the precaution to sow a few rather later than usual, and in a spot where the plants could obtain some small amount of protection from early autumn frosts. Even in market gardens we have recently seen large breadths in the open fields quite destroyed by early October frosts, whilst a few sown beneath trees have not only escaped, but are still fruiting abundantly. Almost more than Peas, the runner Bean is a vegetable that we do not soon tire of, and no gardener finds the season too long. If, therefore, by taking the simple precaution of sowing a few rows rather late and beneath overhanging trees, a supply may continue till the end of October—or, if frost be mild, even into November—the gain is great. Even large Beans, that in summer would prove tough and stringy, are now quite soft and succulent. Some gardeners may, perhaps, smile at the suggestion, but we can affirm much useful fruit may be obtained by sowing some half-dozen seed in large pots or tubs late in July, staking them and standing in a fairly cool place, then,

early in October turning them into an early vinery, where they may stand and fruit freely for a month longer than other runners will in the open air. We are not very great enthusiasts for big Beans, though good large straight samples look handsome enough on the exhibition table, but gardeners rather want very free bearers and pods of a good green colour. Many of our market growers favour the White Dutch in preference to the scarlet kinds, because the pods do not purple or colour like those of the latter, but keep a bright green hue, and are thus more saleable. A grower of some 10 or 12 acres of Runners said the other day that he rather preferred the Painted Lady, believing it to be the most prolific kind.

—— NATIONAL CARNATION AND AURICULA SOCIETIES.—We are informed that the Executive Committee will arrange for a general meeting to be held at South Kensington, December 9. The principal business will be the adoption of a code of rules for the management of the Societies, there having hitherto been no such necessary basis of operations. In respect of the hour of the meeting, &c., the members will have due notice.

—— PHACELIA CAMPANULARIA.—It will be remembered that in 1882 this interesting new annual was exhibited at one of the meetings of the Royal Horticultural Society at South Kensington, and awarded a First-class Certificate of Merit. Mr. W. THOMPSON, seedsman, of Ipswich, who then exhibited it, now announces it for distribution, and it will be a very fine addition to our blue-flowered hardy annuals. In habit it resembles the well known Whitlavia grandiflora, which is now placed by botanists in the genus Phacelia, but which has a much more spreading and bushy habit of growth, and is, therefore, more floriferous; an average plant will cover 9 inches of ground. Its great attractiveness consists in its large and numerous flowers, which are of the finest deep Gentian satiny-blue, of a shade rivalling that of Salvia patens, produced in terminal racemes of from twelve to twenty blossoms, which are developed in succession. Each flower is about three-fourths of an inch across, of an erect campanulate form, with a spreading five-lobed limb, and short funnel-shaped tube, marked in the throat with fine oblong white spots. There are two forms of Phacelia already among our hardy annuals, viz., P. congesta, bearing light blue flowers, and growing about 1 foot in height; and P. tanacetifolia, taller in growth, and of a darker shade of blue. Both are very pretty, though, unlike some other annuals, of comparatively short duration. Blue being a favourite colour among flowers, these pretty annuals are acceptable on that account, but this new one, announced by Mr. THOMPSON, appears to far transcend the old type, and it will, no doubt, become a favourite.

—— CLEMATISES.—In answer to "A. M.'s" enquiry in a recent number of our journal, we have received the following list from a lady correspondent, which, if it do not contain some quite recent additions to this beautiful class of summer and autumn climbers and general decorative plants, still has many of the favourites of former years.

Alexandra	.. .. ..	Single. Large pale reddish-violet.
Beauty of Surrey	.. ..	,, Light greyish blue.
Blue Gem	.. .. ..	,, Pale cerulean-blue, changing to a satiny-mauve.
Cærulea odorata	.. ..	,, Reddish-violet; fragrant.
Candidissima flore-pleno	..	Double. White.
Duchess of Edinburgh	.. ..	,, White.
Fair Rosamond	.. ..	Single. Blush-white.
Gipsy Queen	.. .. ..	,, Dark velvety-purple.
Jackmanni	.. .. ..	,, Intense violet purple.
Jeanne d'Arc	.. .. ..	,, French-white, bluish veins.
John Gould Veitch	.. ..	Double. Soft lavender-blue.
Lady Alice Neville	.. ..	Single. Delicate mauve.
Lady Bovill	.. .. ..	,, Pure mauve
Lanuginosa	.. .. ..	,, Pale lavender.
Lanuginosa candida	..	Semi-double. Greyish-white.
Lanuginosa nivea	.. ..	Single. Pure white.
Lord Londesborough	..	,, Deep mauve, purplish-red bar.
Louis van Houtte	.. ..	,, Rich violet.
Lucy Lemoine	.. ..	Double. Pure white.
Miss Bateman	.. ..	Single. Pure white, somewhat fragrant.
Nigricans	.. .. ..	,, Deep purple, almost black.
Princess of Wales	.. ..	,, Deep bluish-mauve.
Sir Garnet Wolseley	.. ..	,, Slaty-blue, plum-red bar.
The Shah	.. .. ..	,, Lilac.
William Kennett	.. ..	,, Deep bluish-lavender.

—— THE LAMBETH AMATEUR CHRYSANTHEMUM SOCIETY announce their tenth exhibition for Tuesday and Wednesday, the 11th and 12th inst., at Hawkstone Hall (the Rev. NEWMAN HALL's), Westminster Bridge Road. This spacious hall is a great improvement upon their old quarters in the Borough Road, and we understand a grand display is anticipated. The Hon. Sec. is Mr. GEORGE S. ADDISON, 22, Peckham Grove, S.E.

—— LINNEAN SOCIETY.—The following is a list of the dates of meeting of this Society for 1884—5:—November 20, December 4 and 18. 1885: January 15, February 5 and 19; March 5 and 19; April 2 and 16; May 7 and (Anniversary) 25; June 4 and 18. The chair will be taken at 8 o'clock in the evening precisely, at every meeting, excepting on May 25, the day appointed for the Anniversary elections, when the chair will be taken at 3 o'clock in the afternoon precisely.

—— NEW CHRYSANTHEMUMS AT MESSRS. J. VEITCH & SONS, CHELSEA.—A great many novelties of the Japanese section are yet to bloom at this nursery, and of the many in flower at the present time we select the following as being amongst the finest and most distinct:—W. Robinson, bronzy-yellow, received a First-class Certificate from the National Chrysanthemum Society; L'Incomparable, very large flat bloom of a dull golden colour; Fremy, a bright crimson-chestnut, very fine; Rosa Mignonne, gold and chestnut, early; Mons. J. C. d'Equilior, a deep crimson, tipped with gold; M. Astorg, a large white, fine; Helvetie, a rosy-lilac, with twisted petals; Mr. Richard Lariss, a rosy-lilac, white centre; Talfourd Salter, a fine variety, not yet sent out, and judging from its present appearance likely to be a really good acquisition of dwarf robust habit, with pyramidal-formed flowers, somewhat flattish fine overlapping petals of good substance, and of a deep scarlet colour, tipped and bordered with gold. We think this variety, which has been raised by Mr. SALTER, to be one of the finest of its particular class, the colour being striking and very pleasing, and the form somewhat apart. Another year we may hope to see this in yet better form.

—— THE WEATHER.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Nov. 3, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been in a changeable, unsettled condition generally; some heavy falls of rain have occurred in the extreme western and northern parts of the kingdom, but in the south and east several bright intervals have been experienced and the rainfall has been slight. The temperature has fluctuated considerably, but, on the whole, has been a little below the mean in "Scotland, N.," and between 1° and 3° above it in all other districts. The maxima, which were recorded on different dates in the various localities, ranged from 62° over central, southern, and north-western England, and in the south of Ireland, to 58° in the north of Scotland. The minima were registered at most stations on October 29 or November 3, and varied from 25° in "England, S." (at Strathfield Turgiss on October 30), and 28° in "England, S.W.," to 34° in "England, N.E." "Scotland, W.," and "Ireland, N.," and to 44° in the "Channel Islands." The rainfall has been more than the mean in the north and west of Scotland and over Ireland, but rather less elsewhere. Bright sunshine shows little change from that recorded last week, the percentages of possible duration varying from 18 in "England, N.E.," and 19 in "Ireland, N.," to 31 in "England, E.," and 40 in the "Channel Islands." Depressions observed:—At the commencement of the period the centre of a deep depression was lying off the east coast of Scotland, producing fresh or strong westerly gales on all our coasts. By the following morning, however, this disturbance had disappeared to the eastward of Sweden, the gales had gradually subsided, and an area of high pressure was extending over France from the southward. During the next two days (the barometer being highest over France and Germany) depressions moved in a north-north-easterly direction outside our western coasts, the wind consequently backing to the southward or south-westward, and increasing in force. At many of the Irish and Scotch stations (on the 31st) a strong southerly gale prevailed. By 8 A.M. on November 2 the conditions had again changed; the high-pressure area had receded eastwards, and some "V"-shaped depressions advanced over our islands from the westward, causing the wind to vary greatly in direction, but by the end of the period these had moved from our neighbourhood, and the barometer, after recovering briskly, was again falling in Ireland, with increasing south or south-easterly winds.

GARDEN PALMS.

(*Continued from p.* 523)

Bactris, Jacq.—Although but sparsely represented in the gardens of this country, the majority of the hundred species of which the genus Bactris is comprised are particularly handsome when young, and, with few exceptions, grow freely under ordinary stove treatment. Twelve species are grown at Kew. When old these plants are not handsome in a garden sense, their thin straggling stems, and the fewness of the leaves which compose the head, being rather too ragged to be considered ornamental. All the species inhabit the woods of tropical America, and especially the forests of the Amazon, where, according to Dr. Spruce, they are "almost as numerous as the Geonomas, and, along with them, form no inconsiderable portion of the undergrowth. They are found in all kinds of situations, wet and dry, but prefer recent forests to primitive." Most of the species have thin whipstock-like stems, the exceptions being B. major (Gulielma speciosa), B. Plumeriana, and one or two others. The stems, foliage, and spathes are covered more or less thickly with spines, and the leaves are in most of the species more or less pinnate, the segments being acuminate. The seeds are generally round, as large as Grapes, very hard, and are marked at one end with three punctures or depressions, as in the Cocoa-nut. The rind or sarcocarp is generally thin, brown, and scaly, and in a few of the species, *i.e.*, B. acanthocarpa, clothed with spiny hairs. The thick, succulent rind of the fruits of B. major, the "Peach Palm," forms an important article of food to the natives of various parts of South America. These fruits are borne in large bunches, and are about the size of an Apricot, are Turnip-shaped, and in colour vary from yellow to scarlet. In some cases the seeds are absent, and the fruit is then a solid farinaceous mass. These fruits are eaten either boiled or roasted, and in flavour are said to resemble Spanish Chestnuts.

The cotyledon of Bactris is bipartite, as also are the leaves for the first year or two, after which the foliage becomes pinnate, except when belonging to the species with simple leaves.

B. bacutifera, Hort.—Hab.?
B. Binoti, Hort.—Hab.?
B. Caraja, Hort.—Hab.?
B. elatior, Wallace.—Amazons River.
B. elegans, Hook.—Brazil.
B. Maraja, Mart.—North Brazil.
B. major, Jacq., "Peach Palm" (Gulielma speciosa), Mart.).—Brazil and West Indies.
B. mitis, Hort.—Guiana.
B. obovata, Wendl.—Hab.?
B. Plumeriana, Mart., "Prickly Pole."—West Indies.
B. simplicifrons, Mart.—Trinidad to Brazil.
B. trichospatha, Hort.—Guiana.

Bacularia, F. Muell.—A small genus of Australian Palms, there being but two species, one of which, B. monostachya, is a well known and handsome garden Palm. It is known by the name of "Walking-stick Palm" in allusion to its slender stem, which attains 6 to 8 and even 12 feet high, with a thickness rarely exceeding that of the thumb. From the summit of the stem rises a plume of deep green leaves 3 to 5 feet in diameter, and mixed with these are the slender whip-like spadices. Both at Kew, and in the nurseries of Messrs. Henderson, this Palm proves hardy enough to be grown in a greenhouse, in fact it is healthier when thus treated than in a tropical house. The leaves are pinnate, some of the segments being broader than others, with lips truncate and incised. I have not seen seeds of this Palm. A most useful decorative plant.

B. monostachya, F. Muell., *Bot. Mag.*, t. 6644.—"Walking-stick Palm" (Areca monostachya, Mart.; Linospadix monostachya, Wendl.; Kentia monostachya, Hort.)—New South Wales and Queensland.

Bentinckia, Berry.—Young plants of the only species are now in the Kew collection, having been obtained from seeds collected in Travancore and sent to Kew by Colonel Beddome. The largest of these is about 5 feet high, measuring the young undeveloped leaf; the stem formed by the sheathing bases of the petioles being 1 foot long and 3½ inches wide at the base. The leaves are nearly 5 feet in length and 3 feet wide, with a very graceful, arching curve in the smooth yellow rachis; the segments are broad, with a long, tapering apex, narrowed to a hair-like point, and are bright green, with the prin-

cipal nerves almost white. In general appearance this plant resembles a young Cocoa-nut Palm, than which it is, however, much more graceful. Full-sized specimens are described as being very elegant. 20 feet high, with a smooth, ringed, Bamboo-like stem, 2 inches in diameter. The mountains of Travancore are the home of this Palm; it thrives well at Kew in a tropical, moist house, and enjoys an abundance of water. The seeds are perfectly globose, smooth, shining, bright purple in colour when fresh, and in size are a little larger than Peas. When dry, they are furrowed longitudinally; the albumen is solid, white and horny. The cotyledon and the leaves of the first year are bi-partite, becoming gradually pinnate, until on large plants the foliage is very like that of Cocos nucifera. B. Conda-panna is one of the most distinct and handsome of the Palms at Kew.

B. Conda-panna, Berry.—Travancore.

Bismarckia, Hildeb. and Wendl.—A single species, of coarse appearance when young, like the Hyphænes and Borassus, to which genera it is very nearly allied. Like these genera, too, the Bismarckia is very difficult to cultivate in Europe. There are young plants of it in the Kew collection. Seeds of this Palm were brought to Europe from Madagascar several years ago by M. Hildebrandt.

B. nobilis, Hildeb. and Wendl.—Madagascar.

Borassus, Linn.—Although amongst the most useful, the best known, and the most interesting of Palms, yet this genus appears to be unknown in European gardens. Young plants of B. flabelliformis have been again and again obtained from imported seeds, but these have never lived beyond the seedling stage. At Kew there are several seedlings of it now, but if one may be guided by past experience there is small hope of their ever becoming large plants. As a garden Palm therefore this species is of little value. Of its uses as a source of food, and of clothing, shelter, &c., for the people of the countries where it is found, both wild and cultivated, much has been written by Seemann, Ferguson, and others, to whose works the reader is referred for information on this subject. Full sized specimens of B. flabelliformis have thick trunks 70 feet high, supporting an immense head of large palmate leaves. The seeds are large, flattened, and are covered with short projecting brown fibres. Cotyledon a long simple, stout blade. In the museum at Kew may be seen mats, baskets, umbrellas, books made of leaves, sugar, spirits, wooden boxes, and various other articles all made from different portions of the "Palmyra."

B. flabelliformis, Linn.; "Palmyra Palm."—Tropical Africa (cultivated in India). *W. W.*

CHRYSANTHEMUMS AT SLOUGH.

THIS nursery, which has been so long famous for florists' flowers, is, judging from the display just now submitted for public inspection, as justly entitled to be noted for Chrysanthemums. Over 950 varieties are grown, principally in 8 and 9-inch pots, the plants being the very picture of health, and not in any degree leggy. Three large houses are devoted to them, so that the visitor has an excellent opportunity of comparing the various different sorts and observing their various good points or otherwise. Large quantities are also grown for cutting from, principally Elaine and a few other popular sorts; but we were informed that in future Lady Selbourne—the fine white sport from James Salter—will supersede in a greater measure those now used. White blooms are now much inquired for, but coloured varieties are rapidly rising into favour. The collection is hardly yet in full bloom and perfection, many of the varieties having still blooms to open, consequently, for some weeks to come a visit to Slough will afford a great treat to any one inerested.

In the first house we entered, amongst others, we noticed the following as being in beautiful condition: —Le Nègre, deep maroon; L'Incomparable, crimson and bronze; Hiver Fleur, a soft silvery rose; Bismarck, a bright orange; Hero of Magdala, of a blood-red colour, the reverse of the petals an orange-buff; To Kio, reddish-crimson petals, tipped with gold, being charming; Constance, much resembling the last, but without the reddish tinge; Madame Brum, a quilled lilac flower; La Charmeuse, purple, tipped with white; Orphée, a rich crimson and gold flower, having twisted petals; Lord Beaconsfield, a dull golden-red bloom, which seemed very distinct; Mons. Lemoine, chestnut, the petals beautifully tipped with gold; Alfonso XII., deep chestnut-red, a fine full flower, and distinct; Mons. Castel, a deep crimson and gold bloom; and Flambeau. It will be seen the above were all of the Japanese section, or hybrids from it, these being now the most admired of any. In the next show-house were some thousands of large flowering varieties, presenting a display very pleasing to the eye, the numerous colours being most harmoniously blended; the most conspicuous were:—Mr. Bunn, Chevalier Domage, Refulgens, Jeanne d'Arc, very fine; Beethoven, Mons. Eli, amaranth; Mrs. Dixon, very fine blooms; Dr. Sharpe, Georges Sand, Lord Wolseley, White Globe, Beauty, the large incurved blush-pink flowers were very pretty; Comte de Morny, Annie Salter, Mount Etna, fine reflexed chestnut-red; Lord Alcester, the fine primrose sport from Empress of India; Prince Alfred, Sir Stafford Carey, Her Majesty, Vesta, Lady Hardinge, delicate rose incurved; Enamel, large; and Barbara. In the last house was a collection of the finest of the different types, and a finer sight a Chrysanthemum fancier could not wish to see, some of the flowers being enormous; for instance, Comte de Germiny, having flowers 19 inches in circumference and full 6 inches in depth; White Globe, about the same size; and many more very large and fine, notably L'Ile des Plaisirs, crimson tipped yellow, Japanese; Mons. Henri Jacotot, a large reflexed flower, having a yellow centre with the outer florets red; Mons. Desbreux, F. A. Davies, another fine sort of a maroon-colour; Criterion, Triomphe du Nord, a bronze-chestnut flower; Mons. Richard Larios, a bloom of a rosy-violet colour, with white tipped florets; Duchesse de Gerolstein and Lady Selborne were very fine; Curiosity, the lemon-tipped brown petals of which were very striking; Mdlle. Blanche Pigny is a pretty creamy-white. These Japanese hybrids, and a few of the large incurved, such as Prince Alfred, Dr. Sharpe, Bendigo, bright canary, incurved sport from Mrs. Heale, of exquisite shape and finish. There were likewise many other varieties that have been noticed in the other houses, but all having fine large blooms well finished, and on plants beautifully clean and healthy, the foliage of which in no small degree shows off to better effect the lovely flowers.

HOME CORRESPONDENCE.

Autumn Flowers.—It is not often we see these in such abundance as they are this year, which is owing to the glorious weather, as during the greater part of this month we have had it both sunny and warm, and Dahlias, Michaelmas Daisies, Chrysanthemums, and other things, have felt this, and are now quite gay with their flowers. Dahlias have long been favourites for the autumn, but this year they have shown their value for that season more than ever, especially the single kinds, as with these you may cut and come again, and most beautiful they are for dressing, the only fault with them being that they do not last many days; but as they are produced in such abundance that does not matter much, for there are always plenty to follow, and it is only the little trouble of gathering and putting them up. Those who wish to save seed should pick the ripe heads at once and lay them in pans or on paper in some airy place to dry, when, after a week or two, the seed will be forward enough to rub out, and may then be put into packets and stored away till it is wanted for sowing. Although the tops of Dahlias are very tender, frost does not hurt them low down, and when the heads get killed it will be quite time enough for taking the plants up, as the crowns of the tubers will be safe beneath the soil for weeks yet to come. When they are lifted they should be laid on the floor of some dry shed or cellar, as they will keep well under the same conditions as those that suit a Potato. It would appear that we shall soon have Chrysanthemums all the year round, as there are plenty of summer flowering kinds; and yet one feels almost sorry to see them, as they seem out of season; but no doubt we shall get reconciled to them after a while, and look on them with the same favour as we now do the Marguerite. By the way, could not this be used for breeding from? For if so we should soon have some perpetual bloomers. Late sorts must now be got under glass, as the buds are not safe after this; but though housed, the plants should have plenty of air, or mildew will soon appear on the leaves, and not only that, but the flowers will not be half so good as they will if they come on slowly and naturally, without the temperature being raised, as they are very impatient of warmth. Liquid manure will be of great service in helping the production of fine blooms, and may be given with advantage to the plants whenever they require water, provided it is not over-strong. *J. S.*

The Profits of Woodlands.—There are some statements in Mr. Michie's article on forests not paying, which I think cannot be allowed to have a universal application. Certainly it is not always true that a plantation of one kind of tree only will pay better than a mixed one. Take, for instance, the Oak. I consider that nothing can be worse management or worse economy than to plant an Oak wood of Oak alone, because for a great number of years the necessary thinnings will be absolutely valueless (except for the bark); and the same thing is true of the Sycamore, which is one of the most valuable of trees when it has attained a large size—18 inches or 2 feet in diameter, and is clean grown from standing sufficiently thick on the ground to have few small side branches, but which is of very small value indeed when it is less than 6 inches in diameter, whereas Larch is valuable from the time that it is of the size of a hedge stake, and therefore it must be better economy to plant Oak or Sycamore only at such a distance (say 6 or 8 yards apart) as they will need to be when they attain such a size as to be valuable, and to fill in between them with Larch. I am also surprised at his statement that in a case which he quotes, Spruce of (I suppose) thirty or thirty-five years' growth were worth 5*s.* a tree, whilst Larch of the same age were worth only 3*s.* In many parts of the country these figures would certainly be reversed. The comparative value of young Scotch would, I should think, be nearly the same even on land which suited Scotch, as it is only the heartwood of old Scotch that is good for anything. To lay down the rule that only trees of the same kind should be planted together is, in fact, equivalent to saying that no tree whose timber is only valuable when it is old ought ever to be planted at all for profit. *C. W. Strickland, Hildenley, Oct.* 27.

Uredo, Puccinia and Æcidium.—I am indeed pleased to read Mr. Smith's vindication of his views on this matter at p. 534 of the *Gardeners' Chronicle*, and to find that he had been misrepresented in the report of his Chingford address. I fear, however, that he will never become convinced of the genetic relationship of Æcidium with the other spore forms of the heterœcismal Uredines, for Wheat-mildew is not very likely to be ever found upon Barley, nor are Cluster-cups likely to appear on Wheat plants. One thing I am very glad of, namely, Mr. Smith only discredits "the so-called heterœcismal laboratory experiments with the spores of Puccinia graminis and Æcidium berberidis." My cultures have not been made in a laboratory, but out-of-doors in my garden! Mr. Smith will pardon me if I draw his attention to the fact that Professor De Bary has figured an Æcidium and a Puccinia springing from the same mycelium in his paper on "Æcidium Abietinum," in *Botanische Zeitung*, 1879, pl. x., fig. 9. *Charles B. Plowright.*

Impatiens Sultani.—Allow me to add a few words in praise of this plant as a decorative flowering subject; also, as to its easy management. The end of last May I placed an old plant, that had been flowering through the winter, out-of doors under a north wall. I was surprised to see it break into growth low down. I then cut it back, still letting it remain where it was: in about a month it grew into a nice bushy plant, and began to flower quite freely. Thinking at the same time it might possibly grow in the open border, I planted out some small seedlings in 60's as an experiment; the result was, that they grew quite freely, very dwarf, and each plant was covered with bloom-buds. About three weeks ago I lifted them, shook the loose earth from them, potted them in 32's, and now they are nice compact plants, some 2 feet through, and 18 inches in height. After lifting I kept them shaded and cool for a few days, then placed them in a gentle heat, and now they are one blaze of bloom. *W. H. Stephens, The Gardens, Ham Manor, Worthing.*

Garnishing Plants.—What are the various forms of garnishing plants which find most favour? In this country Parsley takes the highest place for meat dressing, but there are other objects requiring garnishing besides meat, amongst which fruit takes high rank. Fern, though the most favoured of garnishing material for flowers, is not employed in dishes, but Vine leaves,

Mallow, coloured Kale, Bramble, and Mahonia foliage are often largely employed. Plants of these are, however, not easily exhibited in pots. Parsley is found in two distinct forms, although the fancy Fern-leaved kind is not much grown. Kales are in exceeding variety, but do not now enjoy the favour they once possessed. The foliage of the Oak and other pretty cut-leaved Pelargoniums make elegant garnishing material, and so also does the finely formed growth of Asparagus, especially of plumosus. Probably few regard the foliage of the garden Anemone as suitable for garnishing, and yet much of it is singularly pretty and elegantly laciniated. Some of the curled Cabbage Lettuces might be found useful, so also may be the leafage of the Horned Poppy, or of the various kinds of Centaurea and Cineraria maritima, once so favoured in bedding displays. Probably there is no plant that has pleasing curled, cut, or prettily laciniated foliage that may not be included in the list of garnishing plants. Why, even the leaves of the Bay tree and the Oak are sometimes used, though these may hardly be shown in pots. There are, too, the pretty Japan Acers, with their truly elegant leafage; will they be admitted into the garnishing division? Truly, when we begin with the section there seems at the first glance to be only Parsley, and presently it is found that their name is legion. *D. B.*

The Gardeners' Royal Benevolent.—In my letter of the 29th ult. I stated that I had written to my old men, who are either non-subscribers or more or less indebted to me for their present position. Of their response I shall have to write hereafter. My present object is to make known to others what I have done, and what they also may accomplish if they will only put their shoulders to the wheel. I commenced a personal application to the owners of gardens and their gardeners yesterday evening, and, although I have only been out a few hours, I have received enough cash to purchase a life membership. As yet I have only been to a few places, but have not met with a single refusal, subscriptions varying from 2 guineas down to 5*s.* This good fortune, I need not say, will encourage me to wait upon every garden-loving lady and gentleman within driving distance of Eastnor, and, although this is not a horticultural district, I am sanguine that there are yet a few good sums in store for me. To-morrow is our magistrates' meeting, and, although I have never been before those gentlemen, I intend to be there, and to plead, too, not for myself, but for my less fortunate brethren, whom, I am grieved to say, do not come forward in a voluntary manner to help themselves. If every man in receipt of 25*s.* a week and upwards would give 1*s.*, the £420 would be raised, the generous offer of a cheque for £500 would be secured, and our craft would be saved from everlasting disgrace. But if they will not do this—if their manly pride will not force them to look beyond the workhouse—let me, through the columns of the gardening papers, beg of the old-established family gardeners to put their horses to their traps and make a personal application to the most likely owners in their own immediate districts. If they have never been out on this errand before, let me inform them that they will be received with kindness and courtesy by hundreds of ladies and gentlemen who are ready and willing to give to an excellent institution like ours. Let me urge them to set about the work at once, and I have no hesitation in saying the Augmentation Fund will be made up in a week, and many permanent subscribers will be added to our list. I say this advisedly, two of the gentlemen who have subscribed to my fund having given me permission to send in their names as annual subscribers. *W. Coleman.*

—— A short time since, in conversation with my foreman, I enquired of him if he had seen Mr. Cutler's appeal to gardeners respecting the Benevolent Institute. He said he had read something about it, but understood very little of what it meant. Well, I said, I will enlighten you as far as I am able. The facts of the present appeal are these:—The committee of the Institute have long wished to raise the annuity to £20 per annum, instead of £16, as at present, but in order to obtain this additional £4 per annum the committee find it desirable to raise the reserve fund to £20,000. To obtain the required sum an anonymous friend promises £500, the deficiency, which now does not exceed £400, to be made up by gardeners by the end of the present year, if not the promised £500 will be withdrawn. The foreman said it would be a shame to lose such a munificent offer, and said he would name it in the bothy, and in small sums he collected 5*s.*, which is four times the amount needed if each of the 13,000 gardeners in England would give only 1*s.* *R. Westcott, The Gardens, Raby Castle.*

Sportive Chrysanthemums.—It is worthy of record that of the new incurved Chrysanthemums to be sent out this autumn nearly every one is the result of sports. There are two sports from the white Empress of India, one named Bruce Findlay, the colour pale canary-yellow, and having all the large size, fine form, and other good qualities of the varieties from which it is obtained; the other is Lord Alcester syn. Princess Imperial, the colour primrose—very fine also. Another is President Sanderson. This is a sport from the soft lilac-pink Lady Slade, but is of a purple-tinted buff colour; the form is fine, the flowers large, and the florets elegantly incurved. Bendigo is a sport from the creamy-white Mrs. Heale, the colour clear yellow—fine in form and full in substance. It is noticeable that those with whom these sports originated claim them as flowers raised by themselves. But it cannot be said that a grower raises a sport. Another new incurved variety is Carmen; in reference to this no particulars of origin are furnished. It is simply said to be a large, dark red, incurved flower, brilliant gold in the centre, and in all respects a very fine variety. Not a few of our leading varieties of incurved Chrysanthemums are the result of sports. *R. D.*

Fawkes' Improved Slow-Combustion Boiler.—Several improvements have been recently introduced into hot-water boilers by Mr. Fawkes, of the firm of Crompton & Fawkes (formerly T. H. P. Dennis & Co.), of Chelmsford. The annexed section (fig. 106) will illustrate very clearly of what these improvements consist. The boiler has a flat front, so that it can be easily built into a wall of a greenhouse similar to some other boilers; in this way the feed-door, door for regulating draught, and smoke-flue, are all outside the

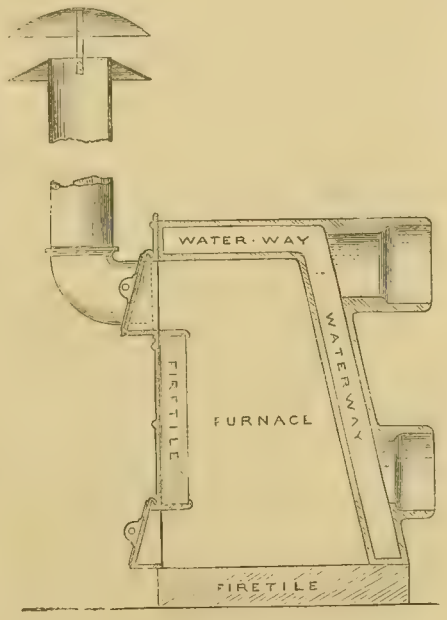


Fig. 106.—Fawkes' boiler.

house, and consequently no fumes can injure the plants. The front is backed by a fire tile, by which means excessive radiation of heat into the open air is prevented. The boiler stands on a flat fire-tile, in order that the true slow combustion result may be obtained, as the air which is required to maintain combustion is only admitted in front of the fuel instead of underneath, so that complete control is maintained over the rate and manner of combustion. Not only so, but in consequence of no ash-pit being required, a boiler occupying the same space as other ordinary boilers will, of course, contain a much larger furnace area and heating capacity. As will be seen the back of the boiler is inclined so that there is a greater tendency for the hot gases to impinge upon the waterway than if the back was parallel with the front. In addition to this, by a very slight modification of the ordinary smoke-flue cap, Mr. Fawkes prevents all possibility of down-draught.

Ornithogalum gracile.—I see in the *Gardeners' Chronicle* for September 20 and 27 two letters from Mr. C. Wolley Dod, and Mr. J. Woodford respectively, asking if any one has been able to grow Ornithogalum gracile. I am surprised that there should have been so many failures to grow these bulbs, and I think that in most cases it is due to their having been thrown away before sufficient time had been allowed them to start. I planted some of the bulbs in a box, at the beginning of last march, and left them in the cold greenhouse with only an occasional watering, and they began to develope leaves about a month ago. They look very healthy now, and I am going to shift some of them to the hothouse, to force them into bloom. I should like to hear if any one else has been able to grow them, if only in justice to the importers. *F. Brown, Florence Villa, West Dulwich.* [Those shown to us at our office were extremely healthy little plants, growing in a potful of ordinary garden mould mixed with a small portion of silver-sand. The bulbs we found well rooted in this soil, which was not apparently the best for them or any plant. Ed.]

Ripening of the Wood of Fruit Trees.—Every gardener of experience knows how important it is that the wood of fruit trees be well ripened, as it is only when in that state that the blossom-buds become fully organised, and if they do not reach that stage it is impossible for them to remain on and set. If they do not do this next spring, it will be entirely owing to the weather then, as never do I before remember so good a promise, for though trees were a little distressed after the great heat of the summer, they have recovered wonderfully since the heavy rain early in September, and are now studded with big fat buds that look almost ready to burst, and these are still being fed by the healthy fresh-looking leaves, many of which are only just changing colour. Truly it has been a beautiful season, and such an one as rarely occurs, and the memory of the oldest inhabitant seems taxed and must go very far back to recall the date of one anything like it. Some persons in their anxiety to hasten maturity sweep off the foliage; but in my opinion that does much more harm than good, as trees part with it readily enough when the buds no longer require its aid, and frost often robs them full soon. To anticipate the natural fall and strip them is ill-directed zeal, and few who denude their trees would be found doing the same to their Vines, but if it is right in the one case it must be in the other. Instead of brushing the leaves off, it is far better to thin out the wood directly the fruit is gathered, when most of the pruning may be done with satisfactory results to the shoots left, as they then get full exposure, and assume that hard, nutty-brown hue we all like to see. *J. S.*

The Potato Disease.—"A. D.," at p. 459, in some interesting remarks upon this subject—to which, owing to the advent of the Woolhope week, when all mycologists are in a state of morbid worry and excitement, I have not had an opportunity of replying before—points out very correctly that tubers may be affected on their lower sides as well as upon their upper. To a great extent "A. D.'s" explanation of the rain washing the spores to the under as well as to the upper side of the tubers is true, but this is also undoubted if brought about by the activity of the ciliated zoospores. I have many times tried to infect tubers at a given point, but although I have succeeded in doing so in a few instances, yet as a general rule I have found the zoospores too active for me—they are all over the surface of the tubers in no time. "A. D." will I trust pardon me if I correct him in one little point. He speaks of the "Jensenian theory of the external operation of the Peronospora spores on the Potato tubers." This point in the physiology of the Potato disease is not due to Mr. Jensen at all, and he lays no claim to it. Let us give honour to whom honour is due. It was the discovery of Professor De Bary, of Strasburg, many years ago. All Mr. Jensen lays claim to is the discovery of the spore-retaining power of the soil, especially of sandy soils. "A. D." has apparently encountered the peculiar affection of the tubers at Chiswick, which appears first inside them. This affection closely resembles in appearance the brown spots caused by the Phytophthora mycelium, it is, however, not due to this cause; but upon this matter I shall have more to say by-and-bye. *Charles B. Plowright.*

Curious Incidents in Tree Growth.—During the past summer I came across two curious examples of tree-growing in places, at first sight, decidedly adverse to such. By those who delight in studying Nature, as seen in wood and forest, an occasional seedling plant of alien kind is often seen nestling in clefts of large trees, &c., to wit, Gooseberries, Currants, even Sycamores, &c., in such manner as to cause no surprise. The two incidents I now note are, however, somewhat removed from anything of this kind, both as regards age, size, and position. Lately I had occasion to visit the very fine display of Orchids which has now become an annual treat given by Mr. William Bull, of the King's Road, Chelsea, and at the further end of the walk which leads through his conservatory on the left-hand side of the doorway, I noticed a curious instance of the above kind, showing at a glance what strange places seeds fall into, or are placed by various agencies, how well they grow in such unfamiliar sites, and the remarkable contrast such a commingling of the varied aspects affords. The plant which carries the strange burden is a tree Fern some few feet in height, with a thick, aged bole, but a very scanty crown of fronds, and it is from the side of the stem that a tall spreading tree has grown, which is probably more

than 20 feet in height. A root has projected from the base of the tree and has grown downwards, entering the stem of the tree Fern lower down. This root has become at once a root and a branch, and a support to the parent plant. My second incident is a native one and consists of two exceptionally large and vigorous trees of the Mountain Ash, growing out of the thatch of, and over an old summer-house. This summer-house is hidden away from public view upon an elevation in a wood, now rented by Mr. Saville, between Woodford and Ilford, and which used to be a part of the beautiful old Hainault Forest, now desecrated and destroyed, unfortunately, excepting in such minor portions as this one. This summer-house is a very old one, certainly, and no doubt consists of a new thatch placed upon the old. The two trees which grow upon the thatch are large, probably from 12 to 15 feet in height, spreading, and so thick as to lead one to suppose their roots found nourishment in the ground below. After careful scrutiny no doubt could exist of their having their roots in the thatch alone. When it is considered what a very dry season we have just passed through it is a matter of wonder how the trees have thriven so well on such a site. *William Earley, Ilford.*

Eriobotrya japonica.—We have just now in flower a plant raised from seed eighteen or nineteen years since. There are over fifty trusses of flower now open, the scent being very fine, and from which I hope we may get a crop of fruit. I have at the same time another plant of it flowering out-of-doors, and have flowered it before, but not fruited it. *F. Page.*

Meconopsis nepalensis.—I enclose a flower-stem of this handsome plant, all the flowers (as yet in blossom) having six petals. The long drought seems to have hurried some plants of it into blossom before they have gained strength to attain their usual height, or else it is too late in the season for them to do so. *C. M. Owen.*

Tubular Boilers.—"Yorkshireman," on p. 536 of your issue for October 25, asks information regarding horizontal tubular boilers. I would not recommend him to try one, nor would I recommend the upright tubular, unless he has abundance of coal, or is residing where fuel is no object. The tubulars are very good, but for durability and economy no boiler can take the place of the Chatsworth saddle as placed by the Messrs. Pearson, of Beeston, and "Yorkshireman" will not require a boiler 8 feet long to heat 2500 feet of 4-inch pipe. I do not consider the boiler is the main agent unless it is put down by some one of great experience. Some boilers have entirely failed, and after having been reset have done their work well. The employment of an experienced hot-water engineer generally makes any boiler work, although some require four times as much coal as others. *Thrumpton.*

Gumming Roses.—We read with surprise, in your issue of the 1st inst., that the National Rose Society had decided that an exhibitor of gummed Roses should not be disqualified! As we see in the *Leek Times* that several members of that Society hold a different opinion, it would be interesting to learn how the decision was arrived at, and who were the members that pronounced it. As members of that Society, if we had known that such a case was under discussion, we should certainly have used what privileges we might have on the side of disqualification, and we believe if a general meeting of the Society were called the present decision would be reversed. *Wm. Paul & Son, Waltham Cross.*

Hot-water Pipes.—I was much interested in reading Mr. Christy's letter in your issue of November 1 on hot-water pipes. I have no doubt whatever but it is a step in the right direction. Heating surface is the desideratum, and if it can be obtained and the quantity of water reduced, boiler power and consumption of fuel can be reduced in proportion. But is not Mr. Christy going to the opposite extreme? He says that a 7-feet length of 6-inch annular pipe will hold 8½ gallons of water, while a similar length of his semi-annular pipe will hold but 5 pints. Is not that too small a quantity? and must not the space be so small as to create a fear of stopping up entirely by corrosion of the iron? I think nothing less than an inch space would be safe, and that would then require a much larger quantity of water than 5 pints for that length of pipe. I think the idea of using them as evaporating troughs good and practical, and I should be pleased to see the system put into practice by some manufacturer, and I for one will give them a trial. *John Charlton, Summer Vale Nursery, Tunbridge Wells.*

The Gladiolus.—Now that the season for these flowering bulbs is over, and the time for lifting and storing the bulbs at hand, I should be glad if your correspondent, Mr. Murphy, of Clonmel, would give, in the columns of the *Gardeners' Chronicle*, his method of storing, which he promised to do in his article on Gladioli that appeared in the issue for March 29 this year, p. 408. *W. McL., Glasgow.*

Mildness of the Season.—As evidence of the unusually mild autumn this year we may mention that Strawberry plants are again in flower, and that a ripe Strawberry was gathered at St. Albans during the third week of October; also that a standard Pear tree in the garden of Dr. J. H. Gilbert, at Harpenden, is in full bloom. *W.*

National Carnation, Picotee, and Auricula Societies (Southern Section).—I had not intended to send any communication to the papers in answer to Mr. Dodwell's letters. It seemed better to avoid any controversy, and I will try to do so now as far as it may be personal to myself. Since that decision I have been advised that Mr. Dodwell is taking steps to resist the action of the committee; it is, therefore, I think, but fair that I should thus publicly justify my own action and that of the committee. As soon as I had finally decided to resign my office as co-secretary, I believe amongst the first persons I made acquainted with my decision was Mr. Dodwell. I ultimately wrote to him, asking that he would be good enough to summon a meeting for October 14. He could have called a general meeting or a committee meeting, I did not care which, but he refused to do so. I say this to show that the manner of summoning the meeting was left in the first place in Mr. Dodwell's hands. The next step I took was to summon a committee meeting for the 14th, and Mr. Dodwell was invited to attend; he knew quite well why the meeting was called, the members of the committee I think did not. I ultimately, as I thought, wrote to all the members, with the exception of two, who I knew could not attend, but I copied from a wrong list and omitted Mr. Dean. To him I have written to apologise, and he has accepted my apology in good faith. Mr. Dodwell says he was elected by the general meeting, held on February 12 last. A meeting of members was called for that date, but as usual they did not choose to attend. Mr. Dodwell knows well that the business has always been practically transacted by the committee. All the members of the committee present at that meeting (Feb. 12) were invited by me to attend on October 14 last. I may say there was one member of the Society present on February 12, a Mr. Rowan, but neither rules nor precedent could constitute one man a quorum to elect officers. Further it was well known to all the members of committee that Mr. Dodwell had not resigned. He had not sent in his resignation. Mr. Dodwell and I have recently been so frequently at issue in transacting the affairs of these societies, that I am amazed he should think any explanation necessary. Indeed he had apprised me by letter that the "dual secretaryship had added to, not diminished, the work." It is impossible that my resignation can have taken Mr. Dodwell by surprise. The committee had to decide on the spur of the moment between Mr. Dodwell and myself. There were no rules, and no precedent to guide them, consequently they acted as any business men would have done. They reconstituted the societies on a different basis. Office bearers were elected for the year 1885. I was appointed sole secretary without a dissentient voice. Mr. Whitbourn, of Great Gearies, Ilford, to be President for the Auricula Society, and Mr. Llewelyn, of Penllergare, Swansea, who had sent in his resignation, was asked to reconsider it, and at the urgent request of the committee he has accepted the office of President of the Carnation and Picotee Society for next year; Mr. Shirley Hibberd, of Kew, and Mr. Harry J. Veitch, of Chelsea, were appointed auditors; Mr. H. A. Rolt, of Wimbledon, Treasurer; while Mr. Charles Turner, of Slough, and Mr. Hibberd were appointed to draw up a code of rules for the future guidance of the Societies. I am advised that they will not be ready for November 11. It will, therefore, be necessary to postpone the meeting until December 9, when a general meeting will be called, at which the committee will, no doubt, be prepared to justify their proceedings. Surely Mr. Dodwell cannot believe that the gentlemen present on October 14 would knowingly transact any business that was not fair and open, or that they were animated by any personal animosity to him. *J. Douglas.*

Saxifraga aquatica.—This plant when well grown is, without doubt, "a stately Pyrenean species," but is it not a mistake to say "it is also found on the mountains of Corsica"? Two years ago I saw it in the Pyrenees in all its glory and stateliness; in fact, sheets of it yards across, growing in the icy streams. I have, however, no recollection of seeing it on Mont Rotundo, or on any of the mountains in Corsica. There are, however, two closely allied species, viz., Saxifraga corsica and S. pedemontana. They are equally as large as to the flower, but the former species is very dwarf, while S. pedemontana is a close rival with S. aquatica. If the last-named species has been discovered in Corsica, it would be most interesting to know the exact locality. *R. Potter.*

A Caution.—The Shoddy-man—*i.e.*, the traveller from Dundee—has recently been in this locality. He still quotes the nearest good Scotch gardener as his uncle; still has large quantities of canvas netting and shalloon aprons at half price "in the cart;" and still has his last piece of Scotch tweed to dispose of. Let our young gardeners beware. He is very canny. It is high time his trade among us was put a stop to. *G. W., Uxbridge.*

Reports of Societies.

Exhibition of Apples and Pears (Exeter): *October 30 and 31.*—"An Apple fair" was the appellation with which the above exhibition was announced in the local papers, schedules, &c., but as buyers and sellers and produce for sale were entirely absent, the heading above given is more appropriate. This is the first time an exhibition of fruit only has been held in this part of the country, and considering the short time which had elapsed since it was determined to hold one, the promoters are to be congratulated on the successful result. The Mayor of Exeter (Alderman Wilkinson) originated the idea and formed a committee, composed of several gentlemen interested in fruit culture, who must with his Worship have worked very energetically to get together such a grand display and at such short notice. Altogether more than 2000 dishes were staged, competitors contesting from Hereford, Kent, and most parts of Devonshire. The schedule comprised thirty-eight classes, with money prizes ranging from 2 guineas to 2*s.* in value, all subscribed by citizens of Exeter.

Devonshire has long been associated with the Apple, and it certainly is not at all to the credit of the pomologists of Devonshire that something of this kind has not been in operation long before. It is a fact that in many districts Apple orchards are fast disappearing, and those that do exist present in the majority of cases a very wretched and neglected appearance; rarely are the trees thinned and pruned, but left entirely to Nature. Trees covered with lichen are frequently seen, and, as may be expected, producing but little foliage or fruit.

The objects of an exhibition of this kind are to stimulate the cultivators of the Apple, to improve its culture, to enable them to select the best varieties, and to eschew those that are worthless. The home county held her own in the lists, as seen by the awards. Hereford fruit was remarkable for its cleanliness and fine colour, but Devonshire vied with them for size, and took the lead in several classes. Kent was represented by Messrs. Bunyard, who staged good fruit but had to give way to the other two counties.

Pears were not very largely exhibited, the crop being a very scanty one this year in most parts of the country, but such as were shown were good. The dish of Pitmaston Duchess show by Mr. Garland, gr. to Sir T. D. Ackland, Killerton, were remarkable for their size, the six fruit weighing 6 lb. 10 oz. The two largest weighed 1 lb. 9 oz. each; these were grown on pyramids on the Quince stock. Another dish of six, shown by the same exhibitor, of Doyenné du Comice, weighed 5 lb. 2 oz. In some of the classes of fruit there was evidently a tendency on the part of the adjudicators to favour size and coarseness to uniformity, cleanliness and colour. Conspicuous in the class for twelve dessert fruit, the 2d prize highly deserved 1st honours. The efforts put forth on this occasion being crowned with such satisfactory results, it is contemplated to make it an annual thing, with every prospect of continued support. It may here be remarked that the market place in which the exhibition was held was very nicely decorated with evergreens, flags, &c., in a very effective and tasty manner. Plants were kindly lent for decorating the tables by Lady Hotham, Messrs. Lucombe, Pince & Co., and others.

Apples.—Collection of Apples, twenty-five distinct varieties.—Unfortunately for Mr. Watkin, Pomona Farm, Hereford, he had staged one dish less than the required number, and was disqualified; but his collection being quite a great feature of the exhibition, it was intended to award him an extra prize. Mr. Berwick, Sidmouth, was awarded 1st honours with a splendid collection also—having Royal Russet, very fine; Hollandbury, Alexander Russet, large and good; Humbleden, Deux Ans, Waltham Abbey Seedling, Mère de Ménage, Blenheim Pippin, Beauty of Kent, Cox's Orange Pippin, King of the Pippins, Court Pendu Plat, Mannington's Pearmain, Fearn's Pippin, and Syke House Russet. The 2d prize was awarded to Mr. Sclater, Heavitree, with very fine fruit of the following varieties—Golden Noble, fine golden colour; Scarlet Pearmain, very handsome; Golden Pippin, Gravenstein, Winter Warden, Cornish Gillyflower, Blenheim Orange, Dr. Harvey, an excellent dish; Court Pendu Plat, very fine, and shown in first-class condition by same exhibitor in several other classes; Norfolk Beefing, fine; King of the Pippins, Ross' Nonpareil, and Golden Ball. 3d, Messrs. Bunyard & Son, Maidstone, who had Lord Derby and Warner's King, very fine; also the New Hawthornden. Twelve dishes culinary.—1st, Mr. J. Ham, Broadclyst, who staged an excellent collection comprising such kinds as Dumelow's Seedling, Warner's King, Tom Putt, fine crimson colour; Blenheim Pippin, Hoary Morning, Beauty of Wilts, Mère de Ménage, Sharpe's Apple, Golden Ball, Gravenstein, and Madame

Clark. 2d, Mr. J. Watkin, who also put up fruit in splendid condition, his principal varieties being Loddington, very fine; Warner's King, Costard, Catshead, Beauty of Kent, Winter Greening, Mère de Ménage, Blenheim Pippin, and others equally fine. 3d, Messrs. Bunyard & Co., whose collection too was very good, and included a fine and well coloured dish of Cox's Pomona, Lady Henniker, Beauty of Kent, Mère de Ménage, and Blenheim Pippin, &c. For the best six dishes.—1st, Mr. Blackmore, Duryard, Exeter: fine dishes of such varieties as Warner's King, Knot's Seedling, Prince of Wales, Hanwell Souring, Hoary Morning, and Alfriston, were staged by this exhibitor; 2d, Mr. W. J. Sweetland, Southernhay, Exeter, with Brabant Bellefleur, Waltham Abbey Seedling, Norfolk Beefing, Gravenstein, Warner's King, and Dumelow's, all good fruit; 3d, Mr. Truman (Countess Weir, Topsham). Twelve dessert, distinct.—1st, Mr. Sclater, his best dishes being Court Pendu Plat, Winter Warden, Lord Burghley, Blenheim Pippin, Cox's Orange Pippin, and Ross' Nonpareil. 2d, Mr. Watkins, Hereford, with a very handsome, clean, and superb collection. Each dish was perfect, his varieties being Adams' Pearmain, Blenheim Pippin, not too large, but perfect; Ross' Nonpareil, Boston Russet, Ribston Pippin, Cox's Orange—splendid colour; Mannington's Pearmain—good; Duke of Devonshire, Scarlet Crofton, very dark crimson; Orange Pearmain, Fair's Nonpareil, and King of the Pippins. 3d, Mr. J. Ham, Broadclyst. Six dessert, distinct.—1st, Mr. Sclater, with Blenheim Pippin, Buffcoat (a Devonshire Apple), Winter Warden, Court Pendu Plat, Cox's Orange Pippin, and Cornish Gillyflower; 2d, Mr. H. Bewick, who had Sturmer Pippin, Winter Pearmain, Royal Russet, Cox's Orange; 3d, Mr. W. J. Sweetland. The 3d prize fruit in this class was decidedly better than those in the 1st prize lot, and nearly equal to the 2d. Heaviest dish.—1st, Mr. R. Dennis, Silverton, with Warner's King; 2d, Mrs. C. Smith, Cullompton, also with the same kind. Best-flavoured variety.—Mr. J. Watkin, Hereford, with Ribston Pippin; 2d, Mr. Sclater, with Cox's Orange Pippin. Six dishes, three culinary and three dessert.—1st, Rev. T. Yarde, Chudleigh; 2d, Mr. J. Stevens, Exminster; 3d, Captain Levett, Bovey Tracey (gr., Mr. Underdown). Single dish of Blenheim Pippin.—This brought out a great number of competitors, Mr. Watkins taking 1st honours, with a very fine and beautifully coloured dish; 2d, Mr. Partridge, Tenbury, Wilts. Single dish, Braddick's Nonpareil.—1st, Mr. J. Enstone, gr. to Sir J. Duckworth, Topsham; 2d, Mr. G. Pullen, Exmouth. Buffcoat, single dish. — 1st, Mr. Hainsworth, Crediton; 2d, Miss Matthews, also of Crediton. Cellini, single dish.—1st, Messrs. Bunyard & Son; 2d, Mr. Lang, gr. to Lord Poltimore, Exeter. Cornish Gillyflower, single dish.—1st, Mr. Manley, Heavitree; 2d, Mr. F. Dymond, Exeter, with a beautiful dish. Cox's Orange Pippin, single dish. — 1st, Miss A. Matthews, Crediton; 2d, J. Edgell Searle, Esq., Crediton, who staged a very handsome dish of fruit; Commended, Messrs. Bunyard & Son. Court Pendu Plat.—1st, Mr. Slater, very fine indeed; 2d, Mr. B. C. Gidley, Exeter. Gloria Mundi.—1st, Mr. Sclater, Heavitree; 2d, Rev. T. Yarde, Chudleigh, with a very handsome and the best dish. Gravenstein.—1st, Mr. Garland, excellent dish; 2d, Mr. Enstone, good. King of the Pippins.—1st, Messrs. Bunyard & Son, with a very handsome dish of this well-known variety; 2d, Mr. Garland. Red-ribbed Greening.—1st, Mr. C. Salter, Whimple; 2d, Mr. J. Stevens, Exminster. Ribston Pippin.—1st, Messrs. Bunyard, with fine fruit, but not so clean or with the colour of the 2d prize dish of Mr. J. Hains. Dumelow's Seedling.—1st, Sir B. Samuelson, M.P., Broxham; 2d, Rev. Preb. Ackland, Broadclyst. One dish, dessert, any sort.—1st, Mr. B. C. Gidley, with G. Gidley's Pearmain, a nice dish, evidently a local fruit. One dish, culinary, any sort.—1st, Col. White-Thomson, with a fine dish of Golden Noble; 2d, Mr. J. Cox, Exeter, with Beauty of Wilts.

Pears.—Six varieties.—1st, Mr. Garland with the fine fruit of Pitmaston Duchess and Doyenné du Comice referred to above, and Josephine de Malines, Winter Nelis, very fine Easter Beurré, and Glou Morceau, all in excellent condition; 2d, Mr. H. Bewick with Catillac, Uvedale's St. Germains, Van Mons' Leon le Clerc, Beurré Diel, and Beurré Clairgeau, good fruit. Three culinary (distinct).—1st, Sir B. Samuelson; 2d, P. Edgell Searle, Esq.; 3d, G. B. Carlile, Exeter. Beurré Diel (single dish).—1st, Rev. T. Yarde; 2d, Mr. G. Shell, Exeter; 3d, J. E. Searle, Esq. Beurré Rance.—1st, Mr. Garland; 2d, Rev. T. Yarde. Chaumontel.—1st, J. E. Searle, Esq. Doyenné du Comice.—1st, Mr. Garland; 2d, Mr. Underdown, gr. to Sir J. Kennaway, Escot. Duchesse d'Angoulême.—1st, Rev. T. Yarde, with a very fine dish; 2d, Mrs. Manley. Glou Morceau.—1st, Rev. T. Yarde; 2d, Mr. Garland. Marie Louise.—1st, Rev. P. Williams, Rewe; 2d, Rev. T. Yarde. Passe Colmar.—1st, Rev. T. Yarde. Winter Nelis.—1st, Mr. Garland; 2d, J. E. Searle, Esq., both excellent dishes. Any other sort (dessert).—1st, Mr. J. Smith, Heavitree, with a fine dish of Louise Bonne of Jersey; 2d, Mr. Jame, gr. to Sir J. Walrond, Bradfield. Any other sort (stewing).—1st, Sir B. Samuelson, with a very fine dish of Catillac; equal 2d, Mr. J. Blyth, Ide, with Gros Calabasse, and Mr. F. Hussey, Lympstone, with Uvedale's St. Germains.

Extra Prizes and Miscellaneous.—Messrs. R. T. Veitch & Son, Exeter, contributed, not for competition, 120 dishes of distinct varieties, gathered principally from trees grown in their own nurseries. Messrs. Lucombe, Pince & Co., too, staged a large collection, comprising 110 dishes, gathered from trees growing in their nurseries. Messrs. Bunyard & Son put up a nice collection, not for competition; Cox's Pomona were very fine, and splendidly coloured; the same with every dish of this kind they exhibited. In the various classes they competed in, Colonel Vaughan was of fine colour; and Queen Caroline and Warner's King were very good.

National Chrysanthemum.—A most interesting and very full meeting of the Floral Committee was held on Thursday last week at the "Old Four Swans," Bishopsgate, at 7 o'clock. Many exhibits were staged, and the following awards were made:—First-class Certificate to Mr. Wermig, for Golden sport from Madame Desgrange, named G. Wermig. First-class Certificate to Mr. Sullivan for large-flowered Anemone Chrysanthemum, named Sœur Dorothée Souville. Cultural Certificate to Mr. Harmand Payne for Japanese Chrysanthemum, François Delaux. First-class Certificate to Messrs. J. Veitch & Sons for Souvenir de Japon, as a Japanese decorative variety, and for W. Robinson as an exhibition Japanese variety; also to two varieties of tree Carnation, viz., Mrs. Keen and Pride of Penshurst, each first-class varieties. A special Vote of Thanks was accorded to Mr. G. Stevens, of Putney, for his exhibits, and also a First-class Certificate for single Chrysanthemum White Perfection. This variety bids fair to prove a very great acquisition to this class of Chrysanthemums. First-class Certificates were also awarded to Mr. N. Davis, Camberwell, for the following varieties:—Lord Wolseley, incurved sport from Prince Alfred; Madame Cabrol, large Anemone variety; Beauté de Jardin, Japanese variety; Fernand Ferrol, Japanese variety; Madame de Sevin, Japanese variety; Nellie Rainford, very pretty buff sport from the old pompon Rosinante. First-class Certificate to Mr. Galton, Winchester, for sport of a rosy-peach colour from Bouquet Fait, a very telling and useful variety—only wants a good name. First-class Certificate to Messrs. H. Cannell & Sons, for Miss Rose, single Chrysanthemum; and Mrs. Gladstone, a semi-single variety. The next meetings of the Floral Committee will be held on November 12 at the Westminster Aquarium, and again at the "Four Swans" on Nov. 27, at 7 o'clock in the evening.

Ealing, Acton, and Hanwell Horticultural.—The usual autumn exhibition of Chrysanthemums and other flowers, with fruits and vegetables, was held in the large and convenient rooms of the Lyric Hall, Ealing, on Wednesday last, and was thus one of the very first of autumn shows. The arrangement of the show and the general display was singularly effective and beautiful, and throughout the day the local residents showed their interest in the exhibition by crowding it to the utmost capacity of the building. A very interesting and most attractive feature of these Ealing shows is always found in the number of miscellaneous exhibits, and amongst these a word of special praise is due to the exceedingly beautiful groups of flowering and foliage plants with which Mr. Roberts, of Gunnersbury Park Gardens, had faced the elegant stage from which later in the day Lady C. Hamilton was to present the cottagers' prizes. Calanthes, Nerines, Tree Carnations, Pelargoniums dressed with Ferns, Crotons, &c., made up very beautiful groups. Mr. Fountain, gr. to Miss Wood, Hanger Hill, Ealing, staged a bank of Ferns, Tree Gymnograumas, and Adiantums, faced with various Selaginellas, that was very fresh and pleasing. Mr. Smith, gr. to T. Nye, Esq., Ealing, set up two huge groups of elegant decorative plants, including fine Dracænas, Crotons, Ferns, Palms, and other admirably grown plants well lit up with Chrysanthemums. Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, Ealing, also arranged on either side of the stage charming groups of flowering and foliage plants. Mr. J. Hudson, gr. to H. J. Atkinson, Esq., Gunnersbury House, furnished a large number of beautiful foliage plants for dressing the cut flower tables, and also staged a very pleasing arrangement for the dinner-table, in which a richly dressed epergne, surrounded by tiny Ferns and Palms, stood in finger glasses, and dressed with moss, gained exceeding admiration. In the epergne, flowers of Eucharis, Ixias, and the pendent Solanum jasminoides told with good effect. Mr. Elliott, gr. to J. Moore, Esq., Shelborne Lodge, Ealing, staged a large and showy group of Chrysanthemums in bloom; and one of superb quality, that naturally excited immense admiration, came from Messrs. C. Lee & Sons, having been sent up by Mr. G. Cannon from their Ealing nursery. The group merited the highest praise. Mr. H. Cannell sent from Swanley three boxes of his beautiful zonal Pelargoniums, including a fine mass of the pure white Queen of the Belgians, also some superbly flowered Chinese Primroses. Mr. H. B. Smith, Ealing Dean, sent a number of his excellent Cyclamens, though yet early in the season for these charming winter flowers. Mr. J. Odell, Willow Nursery, sent some useful groups of flowering and foliage plants. And besides a superb lot of cut blooms of Chrysanthemums from Messrs. C. Lee & Son, of Hammersmith, there were several boxes of fine blooms set up by Mr. J. Harman, gr. to F. A. Capps, Esq., Crown Point, Ealing, who had in fine form F. A. Davis, Madame Desbreaux, reddish-chestnut; Duchess of Albany, clear yellow; Madam Lacroix, clear elegant white; and one with an awful name—Triomphe de la Rue de Châtelet, of bronzy-salmon colour. These were all Japanese varieties.

Fruit and Vegetables.—These were most extensively shown, a striking exhibit being eight bunches of Grapes sent by Mr. Hudson, comprising superb Muscat of Alexandria, West's St. Peter's, and Black Alicante; also some capital dishes of Apples and Pears. Mr. R. Dean staged a big collection of pedigree Potatos. The best three bunches of Grapes were Black Alicantes, and came from Mr. Wright, gr. to G. P. Greenfield, Esq., Hanwell; Mr. Wildsmith, gr. to Jas. Heith, Esq., Ealing, having the 2d best in good Muscats; Mr. Baird coming 3d, with large but rather loose Alicantes. Mr. Chadwick had the only lot of six dishes in good kinds; and Mr. Garlandbury, gr. to C. B. Bingley, Esq., Greenford, sent, but not for competition, some grand Belle Angevine and Beurré Bachelier Pears. Mr. Chadwick had the best three dishes of dessert Apples, and Mr. Wright the best kitchen Apples. The prizes offered by Messrs. Sutton & Sons, Reading, for four dishes of Potatos brought immense competition, Mr. Chadwick, coming 1st with good Cosmopolitan, Duke of Albany, Surprise, and Beauty of Hebron. In another class for three dishes Mr. Wright was 1st, with Early Rose, Schoolmaster, and Magnum Bonum. There was a good competition in the open class for six vegetables, a cottager, Wm. Peasey, coming 1st. One exhibitor, with other capital exhibits, threw over his chance by putting up bad Tomatos. There were classes for Celery, both for gardeners and cottagers, the samples being excellent. Parsnips, Turnips, Onions, Carrots, and single dishes of Potatos were largely shown, indeed no better display of these, especially from cottagers, will be seen this autumn, the quality being first-rate. There was a large competition in the classes for cooked Potatos; the best kidney, splendidly cooked, was Magnum Bonum, and the best round, white and floury, was Vicar of Laleham. The show throughout was a great success, and by far the best, for the season, yet held in Ealing.

Chrysanthemums.—For the best twenty-four cut blooms, sixteen incurved and eight Japenese, Mr. W. R. Strong, Wellington College, Berks, was 1st, with a fine even lot; M. C. Andiguier, Meg Merrilies, and Tarantula were his finest Japanese; and Lord Wolseley, Golden Empress, and Queen of England his best incurved. Mr. C. Herrin, Chalfont Park, Gerrard's Cross, Slough, was 2d, and but very little behind Mr. Strong's lot, Baron de Prailly and Oracle being the best of the Japanese kinds, and Lord Wolseley, Refulgens (very fine), and G. Glenny the best of the incurved. Mr. J. Beesley, gr. to A. Frazer, Esthoria House, Ealing, was 3d; and Mr. R. Wood, gr. to Mrs. Sanderson, Duke's Avenue, Chiswick, the 4th.—Mr. E. Berry, The Gardens, Roehampton House, Roehampton, being awarded an extra prize. The quality of exhibits in this class was exceptionally fine, and the prizes were closely contested, there being nine stands in all. For the best twelve blooms of large-flowering varieties (distinct) six competitors came forward, Mr. J. Beesley being 1st, with F. A. Davies, White and Yellow Empress of India, Baron Beust, Lady Hardinge, and others; Mr. H. Collyer, gr. to Mrs. Murell, The Elms, Uxbridge Road, was 2d; Mr. E. Chadwick, Hanger Hill House, Ealing, was 3d; and Mr. E. Smith, gr. to T. Nye, Esq., Oakville, Castle Hill, Ealing, 4th. Seven exhibitors contested for the best six Japanese blooms. Mr. J. Beesley was again 1st with Boule d'Or, F. A. Davies, Peter the Great, Mons. Ardene, Hiver Fleur, and Comtesse de Beauregard; Mr. E. Smith was a good 2d; Mr. J. Baird, gr. to C. A. Daw, Esq., was 3d; and Mr. H. Collyer received an extra prize. For the best six blooms, large flowering, seven competed.—Mr. F. Nilson, gr. to W. Lindell, Esq., Manor House, Drayton Green, was 1st with Nil Desperandum, Mrs. G. Rundle, White Venus, Mrs Dixon, Geo. Glenny, and Baron Beust; Mrs. Tillyer, Craven House, Ealing, being 2d; C. Atie, Esq., 1, Ealing Road, South Ealing, was 3d; Mr. J. Sweet, gr. to J. J. Cobby, Esq., Castle Bar Lodge, Ealing, was 4th. In the class for three blooms of large flowering varieties, Mr. G. Fulford, gr. to J. Boosey, Esq., Hill House, Acton, was 1st with three fine blooms of Madame Bertier Rendatler, Elaine, and Comte de Germiny; Mr. J. Bard was 2d; Mr. E. Chadwick was 3d, and Mr. J. Beesley was 4th. Eight competed for the best single bloom of large flowering varieties: Mr. J. Baird was 1st with a fine white Empress of India; Mr. G. Fulford 2d, with Madame B. Rendatler; Mr. J. Beesley 3d, with Beethoven; and E. Smith 4th, with White Empress of India. The class for twelve bunches of pompons, three in a bunch, and not less than six varieties, was well contested. Mr. E. Smith was 1st, with a choice lot, including Marie Steward, Madame Marthe, Marchant, Prince Victor, and others; Mr. H. Collyer was 2d, Mr. E. Chadwick was 3d, and Mr. E. Fountain 4th. For the best six bunches Mr. F. Nilson was 1st, with Charles Dickens, President, Antonius, and others; Mr. J. Beesley 2d, Mr. J. Baird was 3d, and Mr. W. Walton, gr. to C. L. Gart, Esq., Twyford Abbey, Acton, 4th. For the best bouquet of Chrysanthemums, Mr. E. Chadwick, was 1st, Mr. J. Baird 2d, and Mr. W. Slade, Mount Avenue, Ealing, 3d. For the best specimen plant, Japanese, Mr. E. Smith was 1st, with Fair Maid of Guernsey; Mr. E. Chadwick 2d, with John Salter; and Mr. W. Wright 3d, with Elaine. For the best four plants, large flowering varieties, Mr. Chadwick was 1st, with Hiver Fleur, Prince of Wales, Adèle Presetta, and Prince Victor; Mr. E. Smith 2d; Mr. W. Wright was 3d; and Mr. G. Elliott, gr. to J. Moore, Esq., Melbourne Lodge, Ealing, was 4th. For the best single specimen plant, large-flowering variety, Mr. E. Chadwick was 1st, with Fair Maid of Guernsey; and Mr. G. Elliott was 2d. For the best four plants of pompons Mr. Chadwick was 1st. For the best specimen pompon Mr. Chadwick was 1st. For the best four Chinese Primroses in pots Mr. J. Beesley was 1st.

The Scottish Horticultural Association.—A meeting of this Association was held on Tuesday, Nov. 4—Mr. Hugh Fraser in the chair. Mr. M. Chapman, Easter Duddingston Lodge, read a paper on "Herbaceous Plants and Borders." In selecting from over 6000 species of hardy plants, which might be estimated

as about the number now in cultivation, a very fine collection could easily be got up. In naming a few of the leading plants that flowered through the course of the season, before the year was at its close, they had the Hellebores blooming profusely all spring, Hepaticas, Orobus vernus, Primulas (many varieties), and many other species of favourite spring flowering plants. In the summer months they had the Columbines, Pyrethrums, Irises, Pæonies, Spiræas, and Campanulas, or Blue Bells. In the autumn months came the Delphiniums, Potentillas, Phloxes, and early flowering Chrysanthemums, while the Michaelmas Daisies made a fine display in October if the weather was moderate. In the course of a discussion which followed it was pointed out by Mr. Mackenzie that while in his opinion the "ribbon border" had served its day, the herbaceous border became at times rather shabby looking. He accordingly advocated an admixtnre of bedding-out and herbaceous plants. Mr. Robertson Munro spoke of the excellent effects which might be secured by the admixture of herbaceous plants with clumps of dwarf shrubs. The general opinion of the speakers seemed to be that the natural over what might be styled the artificial style of gardening, with its blaze of colour, was to be preferred. Mr. Chapman, it should be said exhibited over twenty varieties of herbaceous plants growing at present in the open air. Dr. Paterson, Bridge of Allan, sent for exhibition two fruited spikes of Tritomia Uvaria, over 6 feet in height. Mr. Hugh Fraser exhibited a curious protuberance, which he had found growing from the roots of a Taxodium distichum in the grounds of Mr. Raphael, Castle Hill, Staines, Surrey. He was aware, he said, from books, that in their native swamps of Florida such protuberances sent up from the roots of this tree were common. In size they were 1 to 1½ foot above-ground, and occasionally 2 feet in breadth. When full-sized they were hollow, and were made into beehives by the negroes and planters. The tree in question, which grew on the margin of a lake, was 65 feet in height, and girthed 9 feet 6 inches at 4 feet up. The protuberances extended outwards from 30 to 45 feet from the trunk of the tree. The only use which he could think of for such growths was that Nature intended them as shafts for admitting air to the root of the tree.

Mr. T. S. Ware, London, exhibited Nerine crispa, N. filifolia, and Iris alata. Mr. McKinnon, Kylemore Gardens, Ireland, exhibited a species of creeping Fig in fruit. Messrs. Dickson & Turnbull, nurserymen, Perth, exhibited a new seedling Apple.

The Chairman, before closing the meeting, alluded in suitable terms to the death of an old and valued horticulturist, Mr. A. Shearer, who had been for about thirty-eight years gardener to the Marquis of Tweeddale at Yester. It was agreed that a suitable minute should be drawn up, and a copy sent to Mr. Shearer's representatives.

FRUIT GROWING IN COLORADO.

KNOWING the extent to which your paper circulates among those who are practically connected with horticulture in Great Britain, the following may be interesting as the result of the writer's personal observations. While California monopolises attention, especially at a distance, as a great fruit-growing State, very little has been heard of Colorado, where, however, the question of successful fruit culture has been solved within the last few years, entirely owing to the unflagging perseverance of a mere handful of ardent gardeners. The writer left England in August, 1883, and since his arrival in this State, now over twelve months, has had occasion to visit many parts of it, thus seeing the fruit-growing districts, but the recent Exposition held in Denver afforded such a splendid pomological exhibit as to call for special mention, especially as most of the successful exhibitors were Englishmen or Scotchmen, of whom more anon.

Be it remembered that Colorado as a State has an altitude from 5000 to 10,000 feet above sea level, that it has a torrid summer and a frigid winter, relieved and moderated only by the extreme dryness of the air, as this is a comparatively rainless region. The great mountain chains of the Rockies run north and south, enclosing within their spurs vast mountain plateaus called parks, while on the fringe of the plain, from where the foot-hills rise abruptly, exist many sheltered nooks of hundreds of acres in extent, eminently adapted for fruit growing. Twenty-five years ago Colorado was uninhabited save by Arapahoe and Ute Indians, but the discovery of gold near Pike's Peak and in Cherry Creek, and the subsequent development of the vast silver deposits of Leadville, caused an immense rush of people from all over the Union and Europe, and as the mining excitement subsided the population became gradually settled, towns sprang up, and to supply the needs of the growing community agriculture and horticulture followed in due course. The comparative absence of rain necessitated artificial irrigation from the never-failing mountain streams, and in the loose, deep soil engineering was not difficult. Denver, the capital of the State, the "Queen City of the Plains," or "The "Parlour City," has now nearly 70,000 inhabitants, the State itself is intersected and opened up by numerous lines of railroad, populous mining towns and camps exist throughout the mountains; hundreds of miles of irrigating canals have been constructed, converting hundreds of thousands of acres of Cactus and Sage brush lands into vast fields of magnificent crops, while at long intervals extensive orchards are to be found, planted mostly within the last few years.

Many and various have been the difficulties with which the pioneer fruit growers have had to contend, the conditions being so very different to past experience. Once devastations by grasshoppers in the early years proved most disastrous, want of knowledge as to the best method of protecting the young trees from the biting frosts and piercing winds of the winter resulted in the loss of many valuable plants, and above all the discouragements experienced in ascertaining the kinds best adapted for this climate and altitude, constituted a series of trials which nothing but the indomitable energy of the Colorado fruit growers would have overcome. Suffice it to say that patience and perseverance have surmounted all obstacles, and by years of experimental work fruit growing here has been reduced to a science, and the question has been satisfactorily solved. As nearly half of the successful competitors at the recent horticultural exhibition at the Denver State Exhibiton were either Englishmen or Scotchmen, their cases only will be taken as illustrating the capabilities of this State in this direction.

At present the oldest and most successful fruit district in Colorado is the neighbourhood of Cañon City, where the River Arkansas emerges on to the plain from the rocky chasm through which it has flowed for nearly 50 miles, the walls of which run between 2000 and 3000 feet high, while only from 50—100 feet apart in many places. Situated on the plain under the lee of the adjacent hills, the location is necessarily somewhat sheltered, and as the result is shown eminently adapted for fruit culture. Here Mr. Jesse Frazier commenced fruit growing sixteen years ago at Florence, near Cañon City, to the great amusement of his neighbours, who regarded the experiment as simply absurd. He imported his trees from beyond the Missouri river, 600 miles distant, conveying them in ox-teams over the plains as the first railroad was not made until years afterwards. The first three years after planting he fought grasshoppers, which were evidently attracted by the green oasis Mr. Frazier was establishing. Moreover, he lost many trees by the severity of the winters, which he had not then learned to provide against. Undaunted, he replaced his losses by fresh trees, and tried fresh plans, and the result to-day is that he has an orchard of 2000 trees, 1000 of which are bearing, while 1000 are two, three, or four years old. Last year he sold 9000 dollars worth of fruit, chiefly among the adjoining mining camps, his Apple crop alone being 4500 bushels. He makes Apples a speciality and is a great cider maker. The following list of the Apples he grows may be interesting to your readers, the specimens on exhibition being especially fine :—Red Astrachan, Duchess of Oldenburg, Red June, Sweet Pear, Cole's Quince, Maiden's Blush, Lowell, Keswick Codlin, Summer Pearmain, Cooper's Early White, Jeffrey's (extra fine), Autumn Strawberry, Summer Harvest, Early Harvest, Early Rambeau, Late Rambeau, Fameuse, Rall's Jeannette, Vandevir Pippin, Bailey's Sweet, Jonathan, Perry Russet, Golden Russet, Missouri Pippin, Winesop, King of Tompkins County, Striped Gillyflower, Ladyfinger, Northern Sweet, Sweet Romanite, Large Romanite, Ben Davis, Benoni, sixteen varieties of Russian Apple, Waggoner, Walbridge, Huntsman's Favourite, Yellow Bellefleur, and eleven seedlings, all grown and fruited in his orchard during the present season, embracing the best dessert and culinary varieties. He had also on exhibition seven varieties of Pears, such as Duchess, Louise Bonne, Steven's Genessee, &c., and a similar variety of Crabs. It is needless to say that Mr. Frazier is the best authority on fruit growing in Colorado, particularly on Apples, and is eminently a practical man.

W. C. Gatling, also of Cañon City, is an Englishman, and has a fine orchard of trees mostly purchased from Mr. Frazier. He exhibited a number of very fine fruits, among which were some splendid varieties of autumn Apples, and the best plate of Ben Davis. Mr. and Mrs. Gatling recently visited England, but are so in love with their home under the shadow of the Rockies, that Mrs. Gatling says she would not return to have all England. John Gravestock, another Englishman, also settled at Cañon City, is a good instance of what a man of limited means may do here. He came to Colorado comparatively poor, and by industry and enterprise is fast improving his worldly position. Selecting a nook of about 60 acres at the foot of the mountains, partially surrounded by high precipitous cliffs, he at great labour cleared the ground from loose rocks and boulders, and converted it into an orchard and vineyard, growing Apples, Pears, Plums, Peaches, and also the small fruits, with great success. He exhibited three varieties of Grapes, viz., Brighton, Catawba, and Chasselas, the former being the best in quality grown in this State. He is a professional fruit grower, and is eminently adapted to be a successful one. He has a farm in addition to the land above referred to. George McRay, also of Cañon City, had eleven varieties of Grapes on exhibition, consisting of the following :—Delaware, Agawam, Salem, Concord, Charbonboup, Sweetwater, Isabella, Iona, Duchess, Rebecca, and one unnamed. He has the finest vineyard in the State, and will market this season several tons, mostly of the Concord variety. David Brothers, of Wheatridge, Jefferson County, about 8 miles west of Denver, is another example of an Englishman who owes his success in life to his emigration to this country. He was a farmer in Suffolk, but emigrated to Michigan, and finding that did not suit he came to Colorado years ago, and has done well. Though a farmer by profession he has proved himself to be a most successful pomologist, and had on exhibition nineteen varieties of Apples, mostly autumn and winter, the summer kinds being, of course, out of season. He has a plantation of about 2000 trees, the oldest of which are twelve years. Most of his trees are not yet bearing. Upon his farm he cultivates generally all of the small fruits, Plums, Pears, &c., and has some remarkably fine healthy Apples. He exhibited also twelve varieties of Grapes, such as White California, Massasoit, Hartford Prolific, Salem, Wilder, Concord, Sweetwater, Martha, Delaware, &c. W. Bush, another Englishman, is a baker in Colorado Springs, a beautifully situated little town at the foot of Pike's Peak, the snow-crowned summit of which rises over 14,000 feet above the sea level, and is visible 100 miles distant on the plain. On the ground around Mr. Bush's house, in the town, he grows a variety of fruit, specimens of which, preserved in alcohol, were on exhibition, and justly entitled him to several premiums. They comprised Morello Cherries, Early Richmond Cherries, Red Dutch Currants, White Currants, Cherry Currants, Whitesmith Gooseberries (the largest on exhibition), Crown Bob, Red Warrington, and Champagne Gooseberries. So I might go on with other exhibitors, but suffice it to say that English and Scotch alike have brought with them the national taste and aptitude for successful gardening.

The Blackberry is greatly cultivated here, and is most profitable. It would only tax the credulity of your readers were the writer to state the size and quantity and market price of this fruit raised within a few miles of Denver. All small fruits do well, and immense crops of Strawberries are produced in several localities.

The town of Greeley, nearly 60 miles north of here, calls for special mention, though briefly. The site of the town (then a Cactus-covered plain, incapable of producing human food) was acquired years ago by a colonising company, the shareholders of which came there to settle, laid out the town in square blocks, with wide streets at right angles, built irrigating canals from the adjoining river, planted avenues of trees which are now 40 or 50 feet high, and the town is now embosomed in foliage. Two of the fundamental principles of the colony were "No sale of intoxicating drink," and 'No fences." There is not, and never has been, a liquor selling establishment in the town, and no fences, though every house is surrounded by its garden. The writer visited Greeley twice during the summer, and the effect was unique to pass along the footpath by the side of gardens filled with Currants, Raspberries, Black-cap Raspberries, Blackberries, Gooseberries, Melons, Cantelupes, Squash, Vegetable Marrows, and Tomatos, all ripening in the glorious sun, while the Vines were literally laden with Grapes—all open to the public road, yet none are stolen. Everybody grows fruit, and respects his neighbour's property, even the lads abstaining from their usual propensities. The

ability to turn on water at will is invaluable to successful fruit growing, and what with the fertility of the soil and the uninterrupted genial sunshine for months at a time, fruit is bound to do well.

At the present time Colorado consumes far more fruit than she produces, which has to be brought from Kansas and California, involving heavy railway freight charges, leaving the Colorado fruit grower a good margin of profit. The time seems likely to arrive, however, now that the best methods of protecting the trees, and the most suitable varieties have been ascertained, when fruit preserving establishments will be started here, and besides supplying her own requirements Colorado may annually ship large quantities of canned fruit or jams or preserves to other localities. There is one thing certain in any event, viz., that the mining camps among the stony recesses of the Rockies, often lying from 8000 to 10,000 feet above the sea level, will be increasingly a permanent market for a large quantity of the fruit grown in more favourable localities and on the plains.

In concluding this article it may be observed that the Colorado State Horticultural Society has been a most important factor in solving fruit growing questions, the members being in the habit of holding meetings and comparing the results of their various experiments, thus materially assisting each other in a most practical and commendable manner. In this way the varieties of fruit best adapted for cultivation here have been ascertained, as well as the best methods of protection in winter, irrigation, &c., and new-comers have now at command the results of years of patient plodding in the face of repeated disappointments and discouragements. *T. Tonge, Denver, Colo., October* 15.

CITRONS IN MOGADOR.

In a report from Mogador it is stated under the head of Citrons that nearly all the produce comes to Great Britain, the value of which amounted during the past year to £325. Of this amount about half represents the ordinary Citron of commerce, a very large and thick-rinded fruit, which, generally sent home in brine, is ultimately converted into "candied peel." But the remaining portion of the sum represents the relatively much higher value of a very curious, apparently rare and highly esteemed fruit, which though sold at so high a rate as an average of about 32*s.* per 100, or nearly 4*d.* for each fruit, appears never to be eaten.

The report says "This may be spoken of as the sacred or holy Citron of the Jews, which is carried to their synagogues during the Feast of Tabernacles, it having an emblematical significance. So highly prized is this fruit by the fathful observers of Israelite tradition, that specimens without blemish sometimes fetch as much as 4*s.* in the place of their growth, while in England it is said on good authority that they are sold at certain synagogues for the extraordinary price of £1 1*s.* to £2 2*s.* each. Their use is supposed to be derived from injunctions contained in the twenty-third chapter of the Book of Leviticus: "And ye shall take you on the first day the boughs (Hebrew version, fruit) of goodly trees, branches of Palm trees and Willows of the brook." But the Jewish version of the same passage reads:—"And you shall take to yourselves on the first day the fruit of the tree Hadar, Palm leaves, boughs of the tree Aboth and Willows of the brook." These special fruits, boughs, &c., are described in a Jewish book, entitled *The Festivals of the Lord*, as fruit of the tree Hadar, or Citron (Hebrew, Troon), the "Capoth temarim" or Palm-leaves, boughs of the Aboth or Myrtle, and brook Willows.

The "Troon" or "Tabernacle Citron," as it is sometimes called, is a fruit rather larger than a Lemon, pale yellowish-green in colour (being always plucked before it is fully ripe) and said to contain only one pip, to be of a very fine nature, and to keep sound for a very long period. Those which are despatched hence are carefully packed in cotton wool or other soft material, as the price which they will realise for their holy use is entirely dependent on the greater or less freedom from blemish which the priests can certify concerning each specimen.

Inquiry as to the exact locality of the production of these fruits has resulted in fixing it at a place called Assats or Assat, in the province of Loos, at no great distance (some say half-a-day, some a day) from the town of Tarudant, and on or near the bank of the great Loos river. It is stated with regard to this interesting place that there is a very ancient Hebrew graveyard there, and orchards known by the names of Moses, Aaron, David, &c.; also that the authority of the Moorish Government is not respected there.

Jewish informants in Mogador have said that these "Troons" come from no other place but Assats, but they have been unable to explain how the faithful in many far distant parts of the world manage to provide themselves with these necessary emblems, the shipment of which from Mogador in 1883 amounted to 110 boxes, containing 9024 specimens of this interesting vegetable production.

OLANTIGH TOWERS.

Travellers by the line of railway which runs from Ashford to Canterbury may, when nearing the small station of Wye, have noticed a dazzling white spot on the distant hillside to the right, in the form of an irregular diamond. This is the orifice of a very large chalk pit, and at the distance of a mile, more or less, from this spot, concealed by its surrounding woods, is Olantigh Towers, the Kentish residence of J. S. W. S. E. Drax, Esq. This gentleman may be considered as somewhat of a pluralist as regards the possession of domains, as, in addition to his seat of Olantigh Towers, in Kent, he is the possessor of several others, such as the magnificent residences of Holnest House and Charborough Park, in Dorsetshire, Ellerton Abbey in Yorkshire, &c.

Olantigh Towers is a very large building, originally in the Elizabethan style, but it has from time to time had considerable additions made to it, and in the making of these additions no particular style of architecture appears to have been adhered to, and the mansion now covers a very large portion of ground, or not less than 90 by 45 yards. These extensive additions are mostly in the form of galleries and corridors, being required for the accommodation of a very extensive and valuable collection of paintings, classic statuary, ancient armour, and other objects of *vertu*, justly considered as forming one of the finest and most valuable private collections in this country. The estate comprises some 4000 acres of fertile land upon the chalk formation. The park is 200 acres in extent, the surface finely undulated, and the soil good, consequently park trees of all kinds succeed admirably, particularly the Oak and the Beech, of which there are many fine examples. The mansion is sheltered on the north and west by its lofty woods, while in other directions fine views are obtained of the fertile hill-sides and rich Hop-gardens of Kent. The principal entrance to the pleasure grounds, which are some 50 acres in extent, is from the old Canterbury road on the south, and the mansion is approached by a broad carriage road, on each side of which is a line of very large and fine standard Portugal Laurels with strong straight stems 4 feet in height, and between each pair of trees is a pedestal some 3 feet high, surmounted by an ornamental vase or marble bust; and as the visitor approaches the mansion he may be somewhat startled by the unexpected appearance of groups of statuary, which present themselves on each hand. These statues are in bronze and in marble, but chiefly of the latter material, and they are placed in effective situations upon the smooth greensward, which is also interspersed with fine specimens of the most ornamental Conifers, and other evergreen and ornamental trees. Nor will his surprise be likely to be in any degree diminished when, on reaching the principal front of the mansion, he finds himself face to face with the worthy owner of Olantigh Towers represented by a figure on horseback, cast in bronze, considerably larger than life. One of the peculiarities of Olantigh Towers is, however, the numerous examples of the sculptor's art, which are found dispersed throughout the grounds, as well as in its galleries and corridors.

The grounds are very skilfully planted with the choicest kinds of ornamental trees and shrubs, nearly all of which grow admirably, particularly fine being the Wellingtonias, Abies Pinsapo, A. nobilis, and A. Nordmanniana; also Cupressus Lawsoniana in its numerous varieties, Thuia gigantea, Cedrus Deodara, and Cedrus atlantica; but the Cedar of Lebanon and the common Spruce Fir are, however, exceptions in this respect, neither of them growing well.

The entrance front of the mansion faces the east, or nearly so; while on the south the ground rises considerably from the mansion, and on the face of the sloping ground a very pretty geometrical flower garden has been laid out on the turf, the beds of which at the time of our visit were gay with the flowers of the choicest kinds of bedding plants. In this pretty garden are three elegant bronze fountains, the largest being placed in the centre, with a basin 40 yards in circumference, while on the right and on the left, at a less distance from the mansion, is a fountain of lesser dimensions. Parallel to the south front of the building, on the high ground at the southern extremity of this garden, is a broad terrace with balustrades and vases, &c. This is reached by broad flights of steps, which being unfortunately formed of artificial stone, have in some parts suffered from the effects of the weather. Some beautiful statues are placed in and around this garden, such as a bronze figure of Mercury, another representing Eve at the fountain, Hero and Leander in marble, and several other mythological subjects.

The French fountain, which at one time it was supposed would become the property of the Royal Horticultural Society, and which attracted much interest at the International Exhibition in London in 1862, is placed on the east side of the mansion, occupying a site between it and the beautiful lake. This fountain was purchased for a large sum of money by the owner of Olantigh Towers, and was erected by him where it now is. In order to give an idea of the size of this splendid fountain, it may be stated that the basin which surrounds it is upwards of 80 yards in circumference. The lake may be said to be one of the best features of Olantigh. It is fed by water flowing from the River Stour, into which stream it again pours at a point near to the southern extremity of the grounds. It was formed with much taste assuming in some parts, the appearance of a river. It is about 5 acres in extent, and in its widest part has an island of half an acre, forming a suitable rendezvous and home for the black swans, and the many other kinds of water-fowl, with which the lake is stocked. The island is pleasingly planted with evergreen shrubs, such as Yews, Hollies, and the various kinds of Berberry.

At some distance from its northern extremity, where its width is somewhat contracted, the lake is spanned by a pretty suspension bridge. A similarly constructed bridge crosses near to where it debouches into the Stour. On crossing the lake by the first-mentioned bridge the visitor finds himself in what is known as the American garden, a secluded but attractive spot. Some of the choicer Rhododendrons and other shrubs requiring a peat soil did not grow so well as was desired, and have been effectively replaced by other flowering subjects, among which the Mahonia Aquifolium and other species of the Berberry are conspicuous by their beauty when in bloom.

The vegetable garden is about half a mile from the mansion, occupying an elevated position in the park, but at the same time being concealed by a plantation of trees. It measures, with its outside slips or borders, about 4 acres in extent. Its form is somewhat singular, that of a circle, being surrounded by a substantial brick wall 12 feet high, and although evidently built a long time is still in good preservation; and fruit trees of all kinds trained to it are in a healthy and fruitful condition. The soil of the garden is of good quality, consequently all kinds of culinary vegetables are successfully cultivated. The glass structures are somewhat old-fashioned and are not numerous, consisting of small vineries, Peach-house, Melon and Cucumber pits, with small plant-houses, &c., plant growing upon an extensive scale not being an object here further than furnishing what is required for decorative purposes, such as supplying plants for the large number of vases and flower-beds; and the fruit-houses, though old, continue to furnish excellent crops of Grapes, &c. Mr. John Grieve has for many years been the resident manager of this estate, as well as of the gardens and pleasure grounds, all of which bear witness to his industry and good management. *P. G.*

FRUIT NOTES.

Apples at the Exeter Apple and Pear Exhibition.—A few notes taken at this exhibition, indicating those that took a leading position in the various collections, and that appeared most frequently in them, may be interesting to some of your readers. Blenheim Pippin, as would be expected, was conspicuous everywhere in the dessert and culinary classes, and may be classed among Apples the same as the Gloire de Dijon Rose among Roses for its general uses. Gravenstein, a popular Apple in Devonshire, was also to the front, being of the first size and peculiar oblong shape, an excellent Apple; in use during October, November, and December. Gloria Mundi, also of large size; Warner's King, which was awarded 1st prize for weight, being unusually fine; Golden Noble, one of the very best of Apples, a great bearer, handsome, and one that fetches a good price in the market, and should be extensively planted;

may be kept good till February. Brabant Bellefleur, large, handsome, keeps several months after Christmas; Dumelow's Seedling, a well-known prolific variety; keeps well to March. Hoary Morning, when well coloured, very distinct by broad streaks of crimson, first size; use from October to December. Alfriston, very large, a great bearer; Mère de Ménage, generally a fine colour, of very large size, but on this occasion every dish in the show was very deficient in colour. Emperor Alexander was shown well by several exhibitors. Among newer varieties put up in good condition may be mentioned Lord Derby, very large; Peasgood's Nonsuch, very fine, perfect outline; Loddington, or Stone's, very large; Lady Henniker was staged by several, but was not so fine as generally seen. Hollandbury, another very fine Apple, usually so very handsome, was deficient in colour. For very late culinary Apples, Winter Majetin and Norfolk Beefing, both good bearers, may be recommended; they will each keep until Apples are fit for use the following season. Dessert fruits were represented by Fearn's Pippin; fruit; Cox's Orange Pippin, well known; Ribston, Adam's Pearmain, a very handsome dessert Apple for late use; Cornish Gillyflower, which ranks as one of the best flavoured; King of the Pippins, a sure bearer and one of the best; Mannington's Pearmain, remains in use a long time; Braddick's Nonpareil, an excellent fruit for late use; Court Pendu Plat, a great bearer, late. An Apple called the Buff Coat, and for which a class was made, is said to be useful either for dessert or culinary purposes, scarcely deserved the place accorded to it. Some local authorities that grow it said that it had no special merit for either use. It certainly was not very handsome, perhaps the most unhandsome dish in the whole exhibition. *D. C. Powell.*

PEAR, CASTELINE.—A top-shaped fruit, of medium size, with a short stalk set obliquely and a flat eye. The skin tawny speckled, the flesh yellowish, juicy, with a special aroma. Season, December to March. This pear is very highly esteemed in Belgium though less so here, It is figured in the last number of the *Bulletin d'Arboriculture.*

APPLE, BRAMLEY'S SEEDLING.—One of the only two varieties selected for Certificates at the Apple Congress. The fruit is of medium size, oblate, with a very short stalk set in a deep basin, skin yellowish, flushed and spotted with red. The eye is sunk in a cavity bounded by five short rounded knobs, the calyx tube funnel-shaped, stamens medium. Flesh yellowish, brisk acid, cells round, open. A kitchen Apple of great excellence, keeping for many months. It is well figured in the October number of the *Florist and Pomologist.*

Obituary.

WE regret to have to announce the death, on the 31st October, at Brooklynn, Dollar, N.B., of Mr. ALEXANDER SHEARER, landscape gardener, in the sixty-ninth year of his age. He began his gardening career at an early age in the Lothians, and after several years' experience in good gardens in Scotland and the neighbourhood of London, was appointed in 1840 by the then Marquis of Tweeddale to be his gardener at Yester, in Haddingtonshire. Here he faithfully served three successive employers for nearly 40 years, and distinguished himself as a first-rate all-round gardener, and an enthusiastic supporter of everything that tended to advance gardening and gardening interests. Gifted with a taste for science and the investigation of the laws of Nature, he acquired a knowledge of chemistry and its practical application to the cultivation of the soil. He took an active part in the direction and carrying out the various schemes promoted by George, eighth Marquis of Tweeddale, for improving the cultivation of land, by drainage, subsoiling, and the use of the steam-plough; and especially the system known as the Yester Deep Land Cultivation, which attained considerable repute about a quarter of a century ago. Draining, road-making, and other extensive estate improvements were carried out by him with great ability, and along with the gardens at Yester, which he converted from almost a wilderness to one of the best and most interesting gardens in the Lothians, remain a lasting monument to his skill and energy. An enthusiastic volunteer, and a crack shot, he was for many years a prominent member of the Gifford company of the Haddingtonshire Rifles; and in all local affairs he was ever ready to bear a willing hand to help forward whatever tended to increase the happiness and promote the intelligence of the people. He was a frequent contributor to the gardening papers upon topics of much interest, and almost from the commencement of the *Gardeners' Chronicle* his communications are to be found in its pages. The circulation of hot-water, and its proper application to the heating of horticultural structures; boilers, boiler heating, and the economy of fuel; the aëration and composition of Vine borders, and the formation of fruit tree borders, are some of the important subjects that from time to time received his attention, and were discussed with acumen and sound practical intelligence. Since leaving Yester (about five years ago) he has followed successfully the profession of a landscape gardener at Edinburgh. He leaves a widow and an only daughter, married to a Tea planter in India, to mourn his loss; and as an honest, true-hearted man he will be much missed among a wide circle of friends at home and abroad.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 5, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity: Sat. = 100	Wind: Average Direction.	Rainfall.
Oct.	In.	In.	°	°	°	°	°	°			In.
30	30.07	+0.34	55.0	41.5	13.5	49.5	+3.0	43.5	80	S.: S.E	0.00
31	30.09	+0.36	57.5	46.0	11.5	51.0	+4.6	46.5	85	S.	0.00
Nov. 1	29.91	+0.16	53.0	44.0	9.0	49.6	+3.4	47.3	93	S.	0.00
2	29.75	−0.01	60.0	44.0	16.0	51.6	+5.6	46.8	84	S.: S.S.W.	0.26
3	29.93	+0.16	49.0	37.0	12.0	42.3	−3.5	36.8	78	E.N.E.: W.N.W.	0.00
4	29.70	−0.08	55.0	36.0	19.0	48.2	+2.6	43.6	88	E.S.E.: W.S.W.	0.00
5	29.76	−0.03	59.5	50.0	9.5	54.4	+9.0	47.7	78	S.W.: W.S.W.	0.00
Mean	29.89	+0.13	55.5	42.6	12.9	49.5	+3.5	44.6	84	S.	0.26

Oct. 30.—Fine bright morning, dull afternoon and night.
— 31.—Dull morning, very fine afternoon and night.
Nov. 1.—Dull day and night.
— 2.—Fine; dull day and night; heavy rain from 3 1 P.M. to 10 P.M.
— 3—Fine day and night.
— 4.—Dense fog in early morning. Fine day and night.
— 5.—Fine bright day and night.

LONDON: *Atmospheric Pressure.*—During the week ending November 1, the reading of the barometer at the level of the sea decreased from 29.88 inches at the beginning of the week to 29.55 inches by 9 A.M. on the 26th, increased to 29.92 inches by 3 P.M. on the 27th, decreased to 29 57 inches by 9 A.M. on the 28th, increased to 30.26 inches by 9 A.M. on the 30th, decreased to 30.24 inches by 3 P.M. on the same day, increased to 30.30 inches by 9 A.M. on the 31st, and was 30.02 inches by the end of the week.

The mean reading of the barometer for the week was 29.98 inches, being 0.17 inch lower than last week, and 0.06 inch higher than the average of the week.

Temperature. — The highest temperature in the shade in the week was 60°, on the 28th, the highest on the 29th was 51°.2. The mean of the seven high day temperatures was 54°.7.

The lowest temperature was 35°, on the 29th; on the 31st the lowest temperature was 46°. The mean of the seven low night temperatures was 41°.8.

The greatest range of temperature in one day was 17°, on the 28th; the smallest range was 9°, on November 1. The mean of the seven daily ranges was 12°.9.

The mean temperatures were — on October 26, 48°.3; on the 27th, 47°; on the 28th, 50°.7; on the 29th, 43°.2; on the 30th, 49°.5; on the 31st, 51°; and on November 1, 49°.6; and these were all above their averages, excepting the 29th, which was 3°.4 below, by 1°.1, 0°.1, 4°, 3°, 4°.6, and 3°.4 respectively.

The mean temperature of the week was 48°.5, being 1°.1 higher than last week, and 1°.8 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 107°, on October 31. The mean of the seven readings was 95°.1.

The lowest reading of a minimum thermometer with its bulb placed on grass was 26°.5, on the 29th. The mean of the seven readings was 32°.6.

Rain.—Rain fell on three days, to the amount of 0.29 inch.

ENGLAND: *Temperature.*—During the week ending November 1, the highest temperatures were 61°.7 at Cambridge, 61°.5 at Liverpool, 61° at Truro, Leeds, and Sunderland; the highest at Wolverhampton was 57°.6, at Bradford 58°, and at Nottingham 58°.1. The general mean was 59°.7.

The lowest temperatures were 30°.9 at Wolverhampton, 32° at Truro, and 32°.4 at Cambridge; the lowest at Liverpool was 41°, at Preston 39°, at Brighton 37°.8. The general mean was 35°.

The greatest ranges were 29°.3 at Cambridge, 29° at Truro, 26°.7 at Wolverhampton; the smallest ranges were 20°.5 at Liverpool, 20°.6 at Bradford, 21° at Preston. The general mean was 24°.2.

The mean of the seven high day temperatures was highest at Truro, 58°.7, at Plymouth 57°.3, at Bristol 55°.9; and was lowest at Bradford, 51°.7, at Sheffield 52°.7, at Wolverhampton 53°.3. The general mean was 54°.6.

The mean of the seven low night temperatures was highest at Liverpool, 45°.5, at Truro 44°.6, at Preston 44°.3; and was lowest at Wolverhampton, 38°.4, at Hull 39°.6, and at Bolton 40°.3. The general mean was 42° 3.

The mean daily range was greatest at Wolverhampton, 14°.9, at Hull 14°.3, at Cambridge 14°.2; and was least at Preston, 9°.1, at Bradford 9°.2, at Liverpool 9°.9. The general mean was 12°.3.

The mean temperature was highest at Truro, 50°.8, at Liverpool 49° 6, at Plymouth 49° 5; and was lowest at Wolverhampton, 45°, at Hull 46°, and at Bolton 46°.1. The general mean was 47°.7.

Rain.—The largest falls were 1.53 inch at Bolton, 1.15 inch at Preston, and 1.13 inch at Bradford; the smallest falls were 0.02 inch at Sunderland, 0.10 inch at Brighton and Cambridge. The general mean fall was 0.54 inch.

SCOTLAND: *Temperature.*—During the week ending November 1, the highest temperature was 59°.5, at Paisley; at Greenock the highest was 57°. The general mean was 58°.5.

The lowest temperature in the week was 26°, at Greenock; at Paisley the lowest temperature was 36°.5. The general mean was 32°.

The mean temperature was highest at Leith, 47°.7, and lowest at Greenock, 44°.1. The general mean was 45°.8.

Rain.—The largest fall was 1.93 inch, at Paisley, and the smallest fall was 0.38 inch, at Leith. The general mean fall was 0.86 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

CROTONS SPOTTING.—Can any of our correspondents give us information as to the cause of the spots in Croton leaves, some of which have been sent for inspection? The leaves are spotted when very young, and fall off. The house they are grown in is a span-roof structure, and they always have the full sun, no shading being then given them. The temperature is kept at 70° by night, and air is given at 80° by day. They have been syringed three times a day to within the last fortnight, and that has now been reduced to once a day, because it was thought it had something to do with the spotting.

Answers to Correspondents.

CARNATIONS: *W. Jackson.* An article will appear on this subject next week.

CORRIGENDA. — In our impression of last week St. Audries is credited with having a value of £30 annually in the Doomsday Survey, when it should have been only £3; and Dunster Castle is called Dunstan.

FURZE: *T. S.* No sort of Furze will hold up your banks. These should be constructed of thick turves, and made not more than 4 feet high and 2 feet thick. Sow Furze seeds thinly in a drill 2 inches deep, made on the top. This is best done in the spring. The plants must be cut back the second year, to get them bushy, and will require annual clipping, which will keep them close and thick. The single-flowered variety is indigenous; the double can be propagated only by cuttings, and is much less common; it is the more compact grower. There is a sort named Ulex nanus that is yet more dwarf, but it is rare; it is, like the double one, a variety of U. europæus. The trade will supply you with seed of this sort, but not of the others, those being only varieties that do not come true from seed.

GRAPES WITHERING AWAY: *J. R.* Unless you give nearer data than you have done we cannot give the reason.

INSECTS: *H. L.* Your Cauliflowers are attacked by

myriads of a very minute white, four-winged insect (Aleyrodes Chelidonii), which suck the plants in the same way as the grey plant lice (Aphis Brassicæ), which has this autumn been equally injurious to Cabbages, the season having been very favourable for their production. They may be destroyed by washes of quassia, soap-suds, lime-water, &c., often repeated, in the same way as the aphides.

MIGNONETTE: *G. Lange.* There are several varieties of this in the market, some being very compact when grown in a certain way. Cultivation has more to do with the habit of Mignonettes than outsiders seem to suppose. You will find the names of new kinds in good seed lists.

MYRTLE DISEASED: *E. T.* Two fungi are growing on the plant, one a Fumago, the other (on the dead portions) a Fusisporium. The Fumago may perhaps be the culprit. Please send additional specimens in a worse state.

NAMES OF FRUIT: *T. Mills.* Scarlet Nonpareil.—*W. P.* 1, Beurré Diel; 2, Easter Beurré; 3, Annie Elizabeth.—*K. L. B.* 1, Sam's Crab; 2, Barcelona Pearmain; 3, local cider Apple, resembles Herefordshire Beefing; 4, Sam Young; 5, not known; 6, Williams' Bon Chrétien; 7, Court of Wick; 8, Easter Beurré.—*J. T. Gorey.* 1, Some wilding variety, worthless; 3, Royal Russet; 4, Gloria Mundi; 5, Court Pendu Plat; 6, Dumelow's Seedling; 7, Cox's Orange Pippin.—*Gen. Elmhurst.* Hacon's Incomparable.—*Pomologist.* Not known—a very distinct soft-fleshed fruit.—*George Busby.* 1, Golden Noble; 2, Waltham Abbey Seedling; 3, Beauty of Kent; 5, Cox's Pomona; 6, Fair Maid of Kent.—*Mr. Salter.* Court of Wick.—*W. N. W.* 1, Rosemary Russet; 2, Cellini; 3, Old Nonpareil; 4, not recognised; 5, Gravenstein.

NAMES OF PLANTS.—*Barnet.* Your specimens are too imperfect to name; the following is the best we can do with them:—1, Gayussacia ursina? 4, Gayussacia dumosa? 6, Cotoneaster bacillaris.—*J. W. W.* Your specimen does not agree with the adult forms of Fraxinus oregana, which has pubescent leaves, and we fail to name it without flower or fruit.—*H. & Sons.* 1, Francoa ramosa; 2, Clethra alnifolia; 4, Cassandra calyculata; 5, Spiræa sorbifolia; 6, Leucothœ axillaris. No number 3.—*Monteviot.* Anthurium andicolum.—*W. Grantham.* 1, Cattleya aldorado, near to C. Wallacei; 2, probably Oncidium cruentum; 3, Oncidium unguiculatum; 4, Oncidium aurosum; 5, Rodriguezia secunda; 6, Dendrobium barbatulum.—*H. G.* Acanthus spinosus.—*Jas. Whitton.* Lastrea invisa.

RASPBERRIES: *T. Shingles.* The branches were extraordinarily well laden with fruits, many being quite ripe, making it a very desirable sort to plant for autumn use. It is very like Carter's Semper Fidelis, not the most palatable of Raspberries, which may account for the non-depredations of the birds. It is good for culinary purposes, and is a most productive variety.

SEEDLING APPLES: *T. Haydon.* Your two seedling Apples are very handsome and good. No. 1 very closely resembles Lord Derby, and No. 2 seems intermediate between Emperor Alexander and Cellini—a very pretty fruit. Neither, we should say, are sufficiently distinct to merit introduction as new varieties.—*W. D.* Your seedling Apple resembles some forms of the King of the Pippins. It is much too small to be of any merit.

SWEET POTATO: *H. G.* Yes, certainly; the one mentioned last week is hardly known, but the old Sweet Potato (Convolvulus Batatas) has long been known, and is imported into the markets from the West Indies in considerable quantities. It requires too much heat to be grown in this country. Some of the Yams (Dioscorea) are also loosely called Sweet Potatos, and some of them are hardy in this country; but their cultivation has never gone beyond the experimental stage.

CATALOGUES RECEIVED.

W. M. PILLENGER & Co., Seed Merchants and Nurserymen, Chepstow—Forest Trees, Conifers, Fruit Trees, Roses, &c

GODWIN & SON, Ashbourne, Derbyshire—Forest and Ornamental Trees, Shrubs, and Roses.

LITTLE & BALLANTYNE, Carlisle—Forest Trees, Fruit Trees, and Roses.

CORRY, SLOPER, FOWLER & Co., Limited, 18, Finsbury Street, London—Trade List of Nurserymen, Seedsmen, and Florists' Sundries.

COMMUNICATIONS RECEIVED.—F. M., Glasnevin.—J. D. H.—H. N. G.—H. G., Ryde.—Harrison Weir.—E. S. Dodwell.—M. Dunn.—M. J. P.—J. Day.—Mr. Salter.—W. N. W.—Scolopendrum.—C. M. Owen.—J. O. W.—A. D. W.—J. F.—H. W.—H. R., Brussels.—M. T. B.—J. H. Ford.—W. B. Chew.—C. B. P.—B. S. W.—J. G. B.—J. O'B.—J. R. P.—J. Carter & Co.—F. Sander & Co.—J. A. C.—H. W.—R. D.—R. F.—W. G. S.—E. Bonaria.—R. Y.—R. J. L.—G. Coulgrey.—T. C.

MARRIED, on October 30, at the parish church, Holy Trinity, Clapham Common, by the Rev. R. B. L. Exton, ROBERT JOHN PARKER, Esq., late of the Exotic Nursery, Tooting, to MARIA, widow of SAMUEL MARTIN, Esq., of Clapham, Surrey.

DIED, on October 25, at Great Missenden, after twenty-four hours' illness, DONALD MCVICAR, for the last ten years head gardener at Missenden Abbey.

Markets.

COVENT GARDEN, November 6.

TRADE quiet, with heavy supplies generally. Kent Cobs in steady demand. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Pine-apples, Eng., lb.	3 0-	3 6
Cobs, per 100 lb.	65 0-	67 6	Peaches, per doz.	8 0-	12 0
Grapes, per lb.	0 6-	4 0	Pears, French, doz.	1 6-	3 6
Lemons, per case	21 0-	..	Pines, St. Michael's, each	3 0-	6 0
Melons, each	1 6-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	2 0-	4 0	Lettuces, Cabbage, per dozen	1 6-	..
Beans, French, lb.	0 6-	..	— Cos, each	0 2-	..
Beet, per doz.	1 0-	..	Marrows, each	0 2-	..
Cabbages, per doz.	1 6-	2 0	Mint, green, bunch	0 4-	..
Carrots, per bun.	0 6-	..	Mushrooms, p. baskt.	1 0-	2 0
Cauliflowers, English, dozen	1 0-	2 6	Onions, per bushel	4 0-	..
Celery per bundle	1 6-	2 6	— Spring, per bun.	0 6-	..
Cucumbers, each	0 6-	1 0	Parsley, per bunch	0 4-	..
Endive, English, per dozen	1 0-	..	Radishes, per doz.	1 6-	..
Garlic, per lb.	0 6-	..	Seakale, per punnet	2 6-	..
Herbs, per bunch	0 2-	0 4	Small saladiug, per punnet	0 4-	..
Horse Radish, per bundle	3 0-	4 0	Spinach, per bushel	2 6-	..
			Tomatos, per lb.	0 6-	1 0
			Turnips, bun.	0 5-	..

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.* per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0	Marguerites, 12 bun.	3 0-	6 0
Arum Lilies, 12 blms.	3 0-	6 0	Mignonette, 12 bun.	1 0-	4 0
Azalea, 12 sprays	1 6-	2 0	Pelargoniums, per 12 sprays	0 9-	1 6
Bouvardias, per bun.	0 9-	1 0	— scarlet, 12 sprays	0 4-	0 6
Camellias, per doz.	2 0-	6 0	Primula, double, bun.	1 0-	1 6
Carnations, 12 blms.	1 0-	2 0	Roses (indoor), doz.	2 0-	6 0
Chrysanth., 12 bun.	2 0-	6 0	— (outdoor), 12 bun.	6 0-	12 0
— large, 12 blooms	0 6-	2 0	Stephanoti-, 12 spr.	4 0-	8 0
Cyclamen, 12 blooms	0 3-	0 6	Tropæolum, 12 bun.	1 0-	2 0
Dahlias, 12 bunches	2 0-	4 0	Tuberoses, per doz.	1 0-	1 6
Eucharis, per doz.	3 0-	6 0	Violets, 12 bun.	1 0-	1 6
Gardenias, 12 blms.	3 0-	6 0	— French, bunch	1 0-	1 6
Gladiolus, various, 12 spikes	1 0-	2 0	— Parme, French, per bunch	3 0-	4 0
Heliotropes, 12 sp.	0 6-	1 0	Wal flower, 12 bun.	4 0-	6 0
Lapageria, white, 12 blooms	2 0-	3 0	White Jasmine, per bunch	0 6-	1 0
— red, 12 blooms	1 0-	2 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0	Ferns, in variety, per dozen	4 0-	18 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Ficus elastica, each	1 6-	7 0
— (common), dozen	6 0-	12 0	Foliage Plants, various, each	2 0-	10 0
Begonias, per doz.	4 0-	12 0	Fuchsias, per doz.	3 0-	6 0
Bouvardia, dozen	9 0-	18 0	Marguerite Daisy, per dozen	8 0-	15 0
Chrysanth., dozen	4 0-	9 0	Myrtles, per doz.	6 0-	12 0
Cyperus, per dozen	4 0-	12 0	Palms in variety, each	2 6-	21 0
Dracæna terminalis. per dozen	30 0-	60 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
— viridis, per doz.	12 0-	24 0	Primula sinensis, per dozen	4 0-	6 0
Erica, various, doz.	9 0-	18 0	Solanums, dozen	9 0-	12 0
Euonymus, various, per dozen	6 0-	18 0			
Evergreens, in var., per dozen	6 0-	24 0			

SEEDS.

WEDNESDAY: *November 5.*—The seed market to-day was quiet and featureless. Choice samples of new English Red Clover seed find buyers at the low prices now ruling; but inferior parcels are difficult to sell. Alsike and white Clover keep steady; no attention is devoted to Trefoil. The inquiry for Grass seeds continues small. There is no variation in blue Peas and Haricot Beans. Feeding Linseed is quiet. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

HAY.

Tuesday's Whitechapel Market report states that supplies were large and trade exceedingly dull, with a very drooping tendency in the price of hay. Quotations:—Clover, first quality, 95*s.* to 108*s.*; inferior, 60*s.* to 75*s.*; prime second cut, 90*s.* to 108*s.*; hay, first quality, 80*s.* to 90*s.*; inferior, 40*s.* to 65*s.*; and straw, 28*s.* to 35*s.* per load.—On Thursday there was a large supply, and trade was dull on account of the weather. Prices were unaltered.

POTATOS.

The Borough and Spitalfields Markets reports state that the demand continues good for best sorts, but very dull for inferior. Quotations:—Kent Regents, 70*s.* to 80*s.*; ditto kidneys, 60*s.* to 70*s.*; Essex Shaws, 50*s.* to 60*s.*; Victorias, 70*s.* to 80*s.*; Magnum Bonums, 50*s.*; to 80*s.*; and Champions, 50*s.* to 60*s.* per ton.—The imports into London last week consisted of 76 bags from Harlingen, 99 Delfzyl, 231 bags 36 baskets Rotterdam, and 802 bags from Antwerp.

COALS.

The prices of coals in the market during the past week were as follows:—East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.* 6*d.*; Hetton Lyons, 16*s.* 6*d.*; East Hartlepool, 17*s.* 3*d.*; South Hartlepool, 16*s.* 3*d.*; Hulam, 16*s.* 3*d.*

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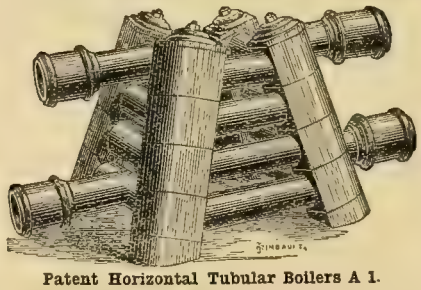
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THE MOST POWERFUL BOILERS IN EXISTENCE.



Patent Horizontal Tubular Boilers A 1.

Have been giving unqualified satisfaction more than 20 years.
Thousands in successful use.
Possess the greatest area of heating surface.
Will heat a greater length of pipe with less fuel than any other boiler of same size.
Require a shallow stokehole.
Have no joints at the ends of the tubes as in other tubular boilers.
Will last longer than any other boiler

The following Unsolicited Testimonial speaks for itself:—

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"Dear Sirs,—We have got the boiler fixed (a Horizontal Tubular A 1 Patent Dennis Boiler) and well tried. I am very pleased with it, both in its working and stoking. It makes the pipes so hot that we cannot bear our hands on them, although the arrangement of the pipes is very complicated. I never charged it yet more than half full of coke. We have another range of houses heated with a saddle which gives us a lot of trouble, and if it wants anything doing to it I will have it replaced by one of yours.—I am, yours truly (signed) GEO. MURRAY."

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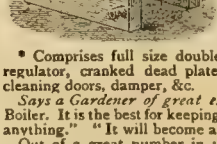
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	Long.	Heat of 4-in. Pipe.	Price of Boiler and Fittings.
A,	19 in.	150 feet	£5 10 0
B,	22 in.	300 ,,	6 15 0
C,	24 in.	400 ,,	8 5 0
D,	26 in.	500 ,,	9 10 0
E,	28 in.	600 ,,	10 15 0
F,	32 in.	700 ,,	12 5 0
G,	36 in.	850 ,,	13 15 0
H,	42 in.	1000 ,,	15 10 0
I,	48 in.	1250 ,,	17 5 0
J,	54 in.	1600 ,,	19 10 0
K,	60 in.	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c.

Says a Gardener of great experience:—"It is a wonderful Boiler. It is the best for keeping in at night that I know. It burns anything." "It will become a universal favourite."

Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.

FOR SMALL CONSERVATORIES for Heating from 50 to 100 feet of pipe.



An Independent Boiler, with furnace front, doors, fire bars and dead plate complete, and 6 feet of funnel. This is called the "LITTLE WONDER." It is fixed in the end or side wall of conservatory by any bricklayer; the funnel running up just outside the glass. It can be applied almost everywhere. It will keep in all night. It is worthy of its name. Price complete, 50 feet size, £4 15; 100 feet size, £5 15s.

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We send capable men to fix work in all parts of the Kingdom. Estimates given. Drawings of Patent and Special Appliances for Heating Dwelling Houses and Churches sent on application.



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And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

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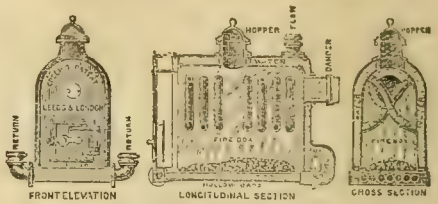
With WATERWAY BACKS and WELDED BOILERS, which are Specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c.

They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3 1881.



The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

"The premier prize, a Silver Medal, was taken by Messrs. Green & Son for their new patent tubular saddle boiler. It is a modification of their original patent, the boiler being longer and not so high. It is found to be a powerful and efficient boiler, and heats a large quantity of water quickly with a small consumption of fuel."

Descriptive Illustrated Price List may be had free on application.

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4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4s. 3d. each
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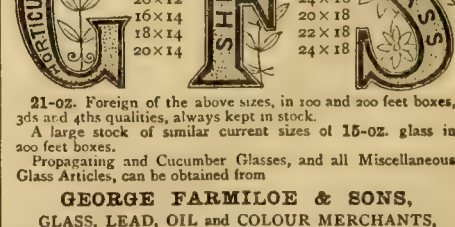
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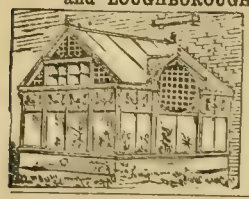
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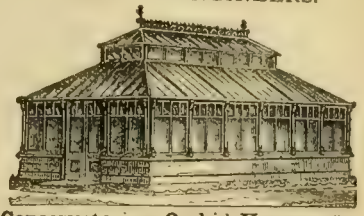
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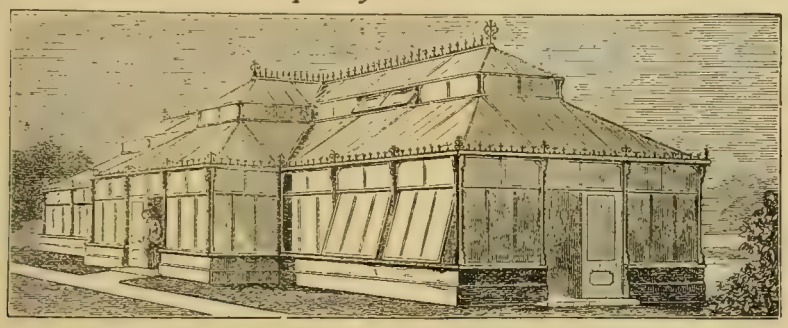
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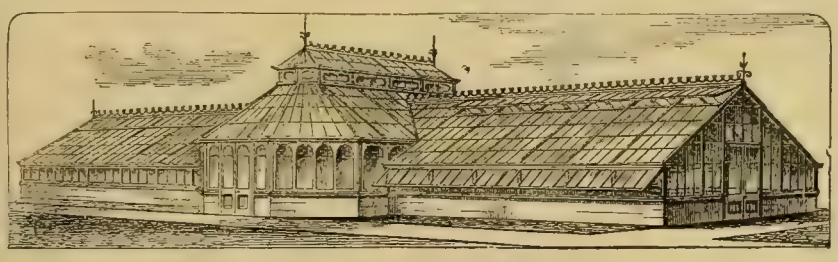
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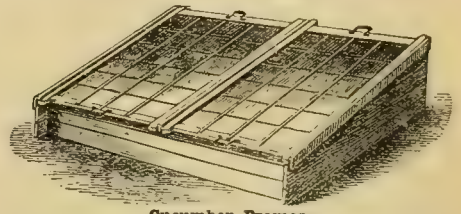
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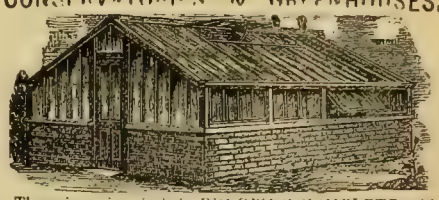
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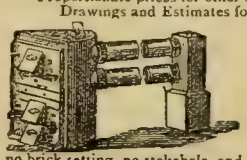
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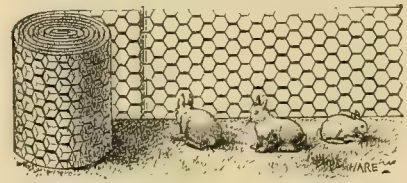
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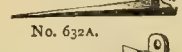
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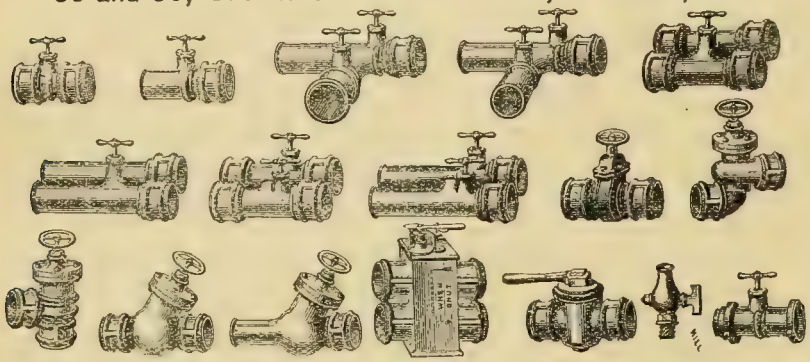
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 8, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 568.—Vol. XXII. {New Series.} SATURDAY, NOVEMBER 15, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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THE GARDENERS' CHRONICLE,
Volume XXI., JANUARY to JUNE, 1884.
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TWICKENHAM HORTICULTURAL and COTTAGE GARDEN SOCIETY.—EXHIBITION of CHRYSANTHEMUMS, FRUIT, &c., at the Town Hall, Twickenham, NOV. 18 and 19. Schedules and all particulars can be obtained from ALEX. ALLFREY, Hon. Sec., Twickenham.

BRISTOL CHRYSANTHEMUM and SPRING SHOW SOCIETY.
The TWENTY-FIRST ANNUAL EXHIBITION of CHRYSANTHEMUMS, FRUIT, &c. will be held in the Victoria Rooms, Clifton, on WEDNESDAY and THURSDAY, Nov. 19 and 20. Schedules of Prizes, &c., may be obtained of GEO. WEBLEY, Hon. Sec., Westbury-on-Trym.

LANCASTER HORTICULTURAL SOCIETY.—CHRYSANTHEMUM SHOW in the New Market, WEDNESDAY, Dec. 3. Entries close Nov. 26.
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TO THE TRADE.—Special offer of SPIRÆA JAPONICA, extra strong clumps; LILY OF THE VALLEY, extra strong clumps; LILY OF THE VALLEY, finest German Crowns; GLADIOLUS BRENCHLEUENSIS, extra large; AFRICAN TUBEROSES, first quality Prices upon application to
JAMES CARTER, DUNNETT, AND BEALE, 237 and 238, High Holborn, London, W.C.

PETER VAN VELSEN AND SONS, Bulb Growers, Overveen, Haarlem, Holland, beg to offer to the Trade, MONBRETIA POTTSII and mixed French RANUNCULUS in extra strong stuff. Prices on application.

HELLEBORUS NIGER (Christmas Rose).—Just arriving, a large Importation of this grand Winter Flower—good roots—in good condition; also English-grown Roots. Exceptionally low prices on application to
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

For Sale.
RASPBERRY CANES, Red and Black CURRANT TREES, and Victoria RHUBARB SETS. Apply, R. BATH, Wansunt Farm, Crayford.

TO BE SOLD, Cheap, 18 fine GARDENIA INTERMEDIA TREES, in 12-inch pots. Apply J. W. SHEPHERD, 19, Waverley Street, Nottingham.

"MARY MORRIS," BORDER CARNATION.—Two First-class Certificates, 3s. a pair, 15s. a dozen. Cash with order. Direct from raiser.—H. G. SMYTH, 21, Goldsmith St., Drury Lane, W.C.

FREESIA REFRACTA ALBA. Long white bell-shaped flower for early blooming. Very sweet scented. One of the most useful bulbs that can be grown. See our Bulb CATALOGUE, free on application.
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

CŒLOGYNE CRISTATA ALBA.—The New Snow-white Cœlogyne. One of the most lovely of Orchids. Sizes and prices on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

LARGE ARAUCARIA EXCELSA for Sale. Also large SPECIMEN CAMELLIAS, from 3 to 12 ft.
E. COOLING, Mile Ash Nurseries, Derby.

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JULES DE COCK, NURSERYMAN, Ghent, Belgium.
SPIRÆA JAPONICA, first-class clumps.
Many thousands for sale. Prices on application.

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BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Tea Roses.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

RUSSIA MATS.—Full Descriptive CATALOGUE has just been issued. The same will be sent post-free to any who have not received one.
JAMES T. ANDERSON 149, Commercial St., London, E.

PINES.—Smooth Cayennes, true and clean, in quantity, in all stages, at reasonable prices, on application, or IN EXCHANGE for Plants of Equivalent Value, such as Orchids, Narcissus, Liliums, Rhododendrons, Alpine Plants, &c.
WM. MILLER, Combe Abbey Gardens, near Coventry.

To Nurserymen, Private Growers, &c.
A. CATTANEO, COMMISSION SALESMAN, 44, Hart Street, and New Flower Market, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantities. Terms on application.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, Choice FLOWERS, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

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WISE AND RIDES beg to inform Senders that the following are now in demand:—STEPHANOTIS, EUCHARIS, GARDENIAS, TUBEROSES, ODONTOGLOSSUM and other ORCHIDS, ROSES, &c.; also TOMATOS, CUCUMBERS, &c
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, London, W.C.

To Grape Growers.
W. UNWIN can now TAKE a FEW MORE CONSIGNMENTS, having greater demand.
W. UNWIN, Grape Salesman, 14, James' Street, Covent Garden, W.C.—Established ten years.

WANTED, DAISIES.—Send lowest prices and full particulars to
H. CANNELL AND SONS, Swanley, Kent.

WANTED, SPRUCE FIRS for Christmas trees, various sizes, large with or without roots. Must be well furnished. Send Samples and Prices to
W. FROMOW AND SONS, Sutton Court Nursery, Chiswick, London, W.

WANTED, a large quantity of EUCHARIS AMAZONICA BULBS. Send sample and lowest price per 100 to
J. FISHER, 18, Wheeler Gate, Nottingham.

WANTED, SYCAMORE and Wych ELMS, stout, sturdy Trees, 8 to 9 or 9 to 10 feet, or larger, for planting singly by the sea. Say number, height, average diameter 1 foot from the ground, when transplanted, and lowest prices.
F. AND A. DICKSON AND SONS, "Upton" Nurseries, Chester.

Now Ready.
THE GARDEN ANNUAL for 1885.
Contains a Complete List of over 7250 Country Seats, Occupiers, and Gardeners in the United Kingdom; over 800 New Names have been added to the Gardeners' List during the past season. There is also the best Trade List published, corrected to date. Price 1s., by post 1s. 3d.
Of all Nurserymen, Booksellers, and at 37, Southampton Street, Strand, London, W.C.

Expiration of Lease.
SEVEN ACRES of NURSERY, containing a VALUABLE STOCK, continues to be offered at a nominal price. The lease cannot be renewed.
See CHARLES NOBLE'S full Advertisement, *Gardeners' Chronicle*, November 8 and 22.

LILIUM AURATUM.—Fine strong sound Plump Bulbs. Prices, and where desired samples, on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

TO BE SOLD, a quantity of superior PINE PLANTS.
The GARDENER, Dewhurst Lodge, Wadhurst.

CHESTNUT (Spanish), Larch, Hazel, Ash, Birch, Alder, Willow, Oak, and Thorn Quick. Stout, well-rooted, transplanted. A large quantity to be sold.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

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LARCH.—1,000,000 to offer, Cheap, lifted last Spring. All strong, with good roots: 3 to 4 feet, 16s.; 4 to 5 feet, 18s.; 5 feet, 20s. per 100. Apply
FRANCIS BELL, Nurseries, Easingwold.—Nov 8, 1884.

CAMELLIAS—CAMELLIAS with Buds.—Many thousands are on Sale, white and striped. Apply to JULES DE COCK, Nurseryman, Ghent, Belgium.

Hyacinthus candicans.
BUDDENBORG BROS., Bulb Growers, Hillegom, near Haarlem, Holland, offer the above, splendid white flowering bulb, at 50s. per 1000.

PHŒNIX RECLINATA.—New Seed, 1s. per oz. (about 80 seeds).
HOOPER AND CO., Covent Garden, London, W.C.

DESCRIPTIVE CATALOGUE.—Roses, Rhododendrons, Fruit Trees, Deciduous and Evergreen Trees and Shrubs, Conifers, Clematis, and other Climbing Plants, &c. Our new CATALOGUE of the above is now ready, and may be had, free, on application.
H. LANE AND SON, The Nurseries, Berkhampstead, Herts.

Helleborus niger—Christmas Rose.
A. RIEMSCHNEIDER, Brandenburg on Havel, near Berlin, begs to offer strong Clumps of the above at 8s. per 100, 70s. per 1000. Orders should be addressed to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, London, E.C.

To the Trade, and Others.
DWARF ROSES.—Several thousands to offer, really fine stuff, of all the varieties worthy of cultivation, at 6s. per dozen, or 40s. per 100, carriage paid. Cash with all orders.
WILLIAM DEEDMAN, Little Posbrooke, Titchfield, Hants.

FOR SALE, splendid Williams' Bon Chrétien and Doyenné du Comice PEAR TREES, from Jersey. Four years old.
Price £7 10s. per 100.
Apply to Messrs. S. SOLOMON AND CO., Auctioneers and Fruit Salesmen, Covent Garden Market, where samples can be seen.

FRUIT TREES for SALE.—Favourite Cluster DAMSON, Victoria Bush and New Orleans PLUMS, 10,000 Lad and Bob GOOSEBERRIES, Black and Red CURRANTS, COB TREES, 20 000 true DAMSON SPAWN, 3 to 4 feet.
A. SEAR, Mr. Skinner, East Farleigh, Kent.

Grape Vines.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

Grape Vines.—Grape Vines.
B. S. WILLIAMS begs to announce that his stock of VINES this season is remarkably fine, and is now ready for sending out. A Descriptive LIST will be found in the BULB CATALOGUE, post-free on application. Early Orders are solicited.
Victoria and Paradise Nurseries, Upper Holloway, N.

TWO THOUSAND VINES for immediate fruiting and for permanent planting, thoroughly ripened Canes. CATALOGUE on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester

SALES BY AUCTION.

Froghall Nursery, Enfield Chase, Southgate.
1½ mile from New Barnet and Oakley Park Stations, Great Northern Railway, main line.
7000 Standard, Half-Standard, and Dwarf ROSES. The collection comprises all the leading varieties, and is remarkably healthy and well grown.

MR. J. HARLAND will SELL by AUCTION, upon the Premises, as above, by order of the proprietor, Mr. C. M. Lindsey, on FRIDAY, November 21, at 12 o'Clock precisely, on account of the number of lots. The lots are arranged to suit the Trade, and also private purchasers. Ten days will be allowed to clear the ground.

Catalogues may be had seven days prior to the day of Sale at the Nursery, the usual Inns in the neighbourhood, and by post from Mr. J. HARLAND'S Auction and Estate Offices, High Barnet.

Every Monday, Thursday, and Saturday.
DUTCH BULBS.—GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely, each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland, in lots to suit the Trade and Private Buyers.

On view morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.—The Fallowfield Collection of Orchids.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 18, at half-past 12 o'Clock precisely, a very valuable lot of ESTABLISHED ORCHIDS, comprising many large specimen and rare Orchids, among others :—

Cypripedium vexillarium
" Swanianum
" Chantini (in flower)
" albo marginatum
" caudatum roseum
Vanda cristata
" suavis Veitchii
" insignis (Ainsworth's variety)
" Lowii
Cœlogyne cristata (Chatsworth variety.
Aërides larpentæ
Aërides suavissimum flavidum (Pince's original plant)
" odoratum purpurascens
Cattleya labiata Pescatorei
" Skinneri alba
Dendrobium Ainsworthi
" Wardianum (old variety)
" Schröderi
" crassinode album
Saccolabium retusum
Odontoglossum Edwardi
" mulus
" aspersum

And many grand specimens of CATTLEYAS, &c.
On view morning of Sale, and Catalogues had.

Important Sale of a First-class Collection of Dutch BULBS, a Superb Assortment of 500 handsome Standard, Dwarf and other ROSES; Selected FRUIT TREES, Hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, November 18, at 12 o'Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Ashford, Kent.
CLEARANCE SALE of remarkably well grown NURSERY STOCK, the land being required by the Burial Board.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. Bunyard to SELL by AUCTION on the Premises, The Barnfield Nursery, Ashford, Kent, on Tuesday, November 18, at 11 o'Clock precisely, in consequence of the large number of lots, the whole of the beautifully grown NURSERY STOCK, comprising about 20,000 Ornamental and Forest Trees, including 10,000 Chesnuts, 5000 Ash, 5000 Laurel, Conifers, and Evergreens in great variety, suitable for immediate effective planting; Standard and Pyramid Fruit Trees, 2000 Standard and Dwarf Roses, and other stock.

May now be viewed. Catalogues may be had of Mr. T. BUNYARD, Nurseryman, Ashford, Kent, or of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Sutton, Surrey.
WEDNESDAY and THURSDAY NEXT, instead of Tuesday and Wednesday, as previously advertised.
Two days' Sale of remarkably well grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H Potter to SELL by AUCTION, on the Premises, the Mid-Surrey Nurseries, Benhill Street, Sutton, Surrey, close to the Sutton and Carshalton Railway Stations, on WEDNESDAY and THURSDAY NEXT, November 19 and 20, at 12 o'Clock precisely each day, a large quantity of remarkably well-grown NURSERY STOCK, in capital condition for removal, comprising very fine specimen Coniferæ and Evergreen Shrubs, 60 grand specimen Wellingtonia gigantea, 1000 Cupressus, 2 to 4 feet; 2000 Laurels, of sorts, 2 to 4 feet; 2000 oval-leaved Privet, 2 to 3 feet; 2000 Standard, Half-Standard and Dwarf Roses of the choicest sorts; Variegated Hollies, Ornamental Trees, Standard and other Fruit Trees, Ivies in pots, a variety of Greenhouse Plants, Camellias, Azaleas, Ferns, Palms, Window Plants, &c.

Now on view. Catalogues had at the Nursery, as above; at the Seed Shop adjoining Sutton Station; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Thursday Next.—10,000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, November 20, at half-past 12 o'Clock precisely, 10,000 splendid Bulbs of LILIUM AURATUM, just received from Japan, in unusually fine condition.

On view morning of Sale, and Catalogues had.

Friday Next.—Very Valuable Importations.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 21, at half-past 12 o'Clock precisely, a grand importation of a splendid new DENDROBIUM, many plants of ONCIDIUM PAPILIO MAJUS in unusually fine masses, a grand lot of CATTLEYAS, two fine ONCIDIUMS from Peru, and the superb new ONCIDIUM LOXENSE; some BARKERIA BARKERIOLA, a pretty new Orchid, CYPRIPEDIUM LINDLEYANUM, AERIDES SANDERIANA (true), ONCIDIUM MACRANTHUM, O. EDWARDI, O. MARSHALLIANUM, ANGRÆCUM, DENDROBES, &c., the whole in fine health.

On view morning of Sale. Catalogues had of the Auctioneers, 67 and 68, Cheapside, E.C.

Orchids in Flower.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER and in BUD will take place on TUESDAY, November 25, and they will be glad to receive entries not later than Tuesday next, November 18.
67 and 68, Cheapside, E.C.,

Ascot.
IMPORTANT SALE.
To the Trade and other Large Buyers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Standish & Co., to SELL by AUCTION, on the Premises, The Royal Nurseries, Ascot, on WEDNESDAY and THURSDAY, November 26 and 27, at 12 o'Clock precisely each day, several acres of remarkably well-grown NURSERY STOCK, including 40,000 Pinus austriaca and 30 000 P. Laricio, 2-yr. transplanted and seedlings; 1500 ditto, 2 to 4 ft.; 6000 Spruce, 1 to 4 ft; 15 000 seedling Scotch Fir; 12.000 ditto, 2 to 5 ft; 3500 Weymouth Pines, 6000 Ornamental Trees, 6 to 9 ft.; 3000 green Hollies, 2 ft.; 15.000 common Laurels, 1 to 3 ft.; 6500 Laurus caucasicum, 1 to 3 ft.; 2000 Retinosporas, 1000 named Rhododendrons, budded; 500 Border Shrubs, 650 Cupressus Lawsoni alba and compacta, 1½ to 2½ ft.; Retinospora plumosa alba, 3000 Conifers, of sorts, 2 to 7 ft.; 1000 Standard, Pyramid, and Trained Fruit Trees; 1000 Standard, Half-standard, and Dwarf Roses, and a quantity of GREENHOUSE PLANTS in variety.

May now be viewed. Catalogues may be had on the Premises; or of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

Wednesday Next.—(Sale No 6774.)
ROSES, FRUIT TREES, HARDY PLANTS, and BULBS in variety.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 19, at half-past 12 o'Clock precisely, an assortment of first-class Standard, Half-standard, and Dwarf ROSES, Pyramid and Dwarf-trained FRUIT TREES, HARDY TREES and SHRUBS, 200 IRIS KÆMPFERI, 200 clumps of LILY OF THE VALLEY, 50 splendid home-grown bulbs of LILIUM AURATUM, and other LILIES in variety from English and Dutch nurseries; also several hundred lots of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other BULBS from Holland.
On view morning of Sale and Catslogues had.

Thursday Next.—(Sale No. 6775.)
FLOWERING ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 20, at half-past 12 o'Clock precisely, a choice COLLECTION of ORCHIDS in flower, comprising several fine varieties of Cattleya aurea, Cattleya candida (very rare), the finest specimen in Europe of Lælia autumnalis, with over 300 Bulbs and 145 buds; L. pedunculatis, grand mass with 60 bulbs and 80 spikes; many fine varieties of Odontoglossum crispum, O. Chestertoni, O. aspersum, Oncidiums, Cypripediums, Masdevallias, Dendrobes, &c. Also 70 lots of good ESTABLISHED ORCHIDS from the New Plant and Bulb Company, Colchester.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6775.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 20, by order of Mr. F. Sander, valuable importations of ORCHIDS.
On view morning of Sale, and Catalogues had.

5000 Lilium auratum, from Japan, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 25, at half-past 12 o'Clock precisely, an importation of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan in fine condition; 2000 TUBEROSES and other ROOTS, from South Africa; 260 LILIUM CANADENSE and 50 MERTENSIA VIRGINICA, from America; Home-grown LILIES in great variety, including many of the finest species in cultivation; Clumps and Crowns of LILY OF THE VALLEY, SPIRÆA JAPONICA and PALMATA, also several hundred lots of first-class DUTCH BULBS, &c.
On view morning of Sale, and Catalogues had.

Isleworth, Middlesex.
SALE of EXCEEDINGLY VALUABLE FREEHOLD and COPYHOLD PROPERTIES.

MR. E. P. NEWMAN will SELL by AUCTION, at the Auction Mart, Tokenhouse Yard, London, E.C., on TUESDAY, Nov. 18, at 12 o'Clock, about 15¼ acres of exceedingly fertile FRUIT PLANTATIONS known as the Mogden House Gardens, together with two well-built detached residences thereon, Cottage, and convenient Outbuildings, situate in the Twickenham Road; also the Fruit Plantation known as Lewis' Garden, containing about 3 acres. The Land is well planted with Fruit Trees, and has extensive frontages admirably adapted for Building Purposes, being within a few minutes' walk of three Railway Stations, and which will be sold in four lots.

Particulars, with Plans, can be obtained of Messrs. TYLEE, WICKHAM AND MOBERLY, Solicitors, 14, Essex Street, Strand; of A. T. DRAPER, Esq., Surveyor, Leicester; E. D. DRAPER, Esq., Solicitor, Bromley, Kent; and of the Auctioneer and Estate Agent, 41, High Street, Uxbridge, and Hillingdon, Middlesex.

To Nurserymen, Landscape Gardeners and Others.

TO BE SOLD, by Private Contract, the BUSINESS of NURSERYMAN and LANDSCAPE GARDENER, carried on for nearly fifty years by the late Mr. Thomas Coudrey, and lately by his Son and Successor (who is declining the business on account of ill-health), at the Edgbaston and St. James' Nurseries, Edgbaston, Birmingham.
Apply, for particulars, at 6, Ampton Road, Edgbaston.

FOR SALE, a NURSERY, Guernsey.
A rare opportunity is offered to Florists and Gardeners, in the sale of the well-known and well-connected Rohais Nursery, situate about 1 mile from the harbour, in the island of Guernsey. Established over 50 years. This Nursery is well known in England for its famous and rare collection of Camellias and Bulbs. It is now to be disposed of through the death of its late owner, Mr. B. Willis. The Nursery contains good Residence, with 2½ acres of rare superior Land, through which runs a stream of fresh water. The whole is well laid out and stocked with Trees, Plants, Shrubs, Flowers, as well as a superior collection of Camellias. There are besides 8 Conservatories, Vineries, Camellia Houses, and over 200 feet of Forcing Frames, and Camellia Pits. The whole in good working order. The sale will take place on the Premises on Wednesday, Nov. 19, at 2 P.M.
For particulars, apply to Mr. E. QUERIPEL, Solicitor, Manor Place, Guernsey; or, to Mr. H. SOTTER, on the Premises.

Wannock, near Eastbourne.

FOR SALE, the well-known (Freehold) STRAWBERRY GARDENS, DWELLING-HOUSE GLASS-HOUSES, and PREMISES.
Particulars of H. T., 18, Marine Parade, Eastbourne.

TO BE LET, a charming GARDEN, with noble Conservatory, Vineries, and Stove-houses, beautiful Tennis-lawn, Kitchen Garden (1¼ acre in all), and secluded Cottage Residence, having full-sized Billiard-room, three Sitting-rooms, five Bedrooms, Dressing-room, and Bath-room, Stabling for two horses, Gardener's Cottage, &c.—an almost unique abode—at £120 a year; small premium. Seven minutes' walk from East End, Finchley, station.
Messrs. DEBENHAM, TEWSON, FARMER, AND BRIDGEWATER, 80, Cheapside, E.C. (38,331)

TO BE LET on LEASE, for Twenty Years, a MARKET NURSERY, 13 miles west of London, containing 2 acres, with 245 feet of Glass; also 200 feet of Pits and Lights, 6 feet by 4, including Potting Shed, Stable, and other Offices.
Full particulars by letter to E. ROW, Mr. Chapman, Waverley House, London Road, Kington-on-Thames.

To Florists and Nurserymen.

TO BE LET, Capital Premises, from Christmas next, with Dwelling-house, 3 Ranges of Span-roofed Green and Hot Houses, and good Garden, situate in the centre of the parish of Walthamstow. Rent moderate.
Apply to Messrs. WM. AND F. HOUGHTON, 61, Old Broad Street, London, E.C.

T. MILLINGTON AND CO., ENGLISH AND FOREIGN SHEET AND PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, AND COLOUR MERCHANTS, 43, Commercial Street, E.

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Extract from the "Gardeners' Chronicle," March 1, 1884, p. 280

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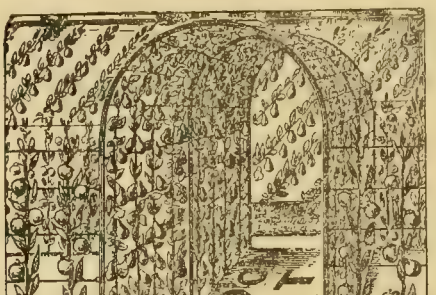
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,, ,, GLAUCA, 2 to 4 feet, hundreds.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, HOOKERIANA, 3 to 5 feet.
,, PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, thousands.
,, NORDMANNIANA, 6, 7, to 10 feet.
,, PINSAPO, 6 to 10 feet, hundreds.
,, PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet.
CEDRUS DEODARA, 6 to 9 feet, hundreds.
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Only £420 are required to increase the Pension to £20 per year.

This amount (£420) must be collected before December 31, or the Institution will lose the £500 promised on these conditions by an anonymous donor.

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* *This is an example we hope to see followed in other Bothies. See Letters, p. 627.*

THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 15, 1884.

MUNTHAM COURT.

MUNTHAM COURT is well placed on the side of a chalk valley in the parish of Findon, north of Worthing. It is an ancient site, and several families have owned the property, including those of Apsley and Shelley. Viscount Montague built the original house as a hunting box, and William Frankland, the Eastern traveller, and a descendant of Oliver Cromwell, enlarged it, and lived here for forty years, dying in 1805, aged eighty-five. In Evans' *Picture of Worthing* you may read all about this remarkable gentleman, his travels, his turn for mechanics, his house full of ingenious contrivances, such as musical instruments played by machinery, printing presses, timepieces, electrifying machines, agricultural implements, optical apparatus, medals, figure-heads, and other heterogeneous works of art produced at Muntham by English and foreign workmen. At Mr. Frankland's death the whole collection was sold at Worthing, one turning lathe bringing 3000 guineas. F. W. Frankland, who died in 1825, presented an engraving of the house and grounds to Mr. Horsfield for his *History of Sussex*, and if Mr. Conway, the gardener at Muntham, young and active minded as he is, and interested in all that relates to the place he manages, could learn the date of this engraving, he might then fix with tolerable accuracy the age of the oldest Yew fences. The site of Muntham was well chosen. Findon is 6 miles from Worthing on the London road, and Muntham is a mile west of the village on a site which is sheltered from the south-west winds of the Sussex coast by higher ground rising close to the house.

The landscape from this high ground is most attractive. The chalk downs of Sussex, amid which we stand, are generally bare, and more remarkable for their pure air and healthful breezes than for their timber and shelter. But here we are in the midst of the pleasant park and grounds of Muntham. The soft mat of turf which covers the chalk is beneath the feet, and the wild Thyme sheds its fragrance through the air; while the miles of walks stretching away from this spot, up hill and down dale, and the Beech, Laburnum, Box, and Yew growing wild in the woods, assure us of the character of the district, and of its geological formation. Immediately around are the gardens, with their curious but not too obtrusive hedges of Yew and numerous Conifers and specimen plants, and looking over the top of clipped colonnades of Yew which flank the approach road, the hills beyond the grounds are seen, Chanctonbury Ring and its clump of trees forming the most conspicuous point. Frequent peeps of this well known landmark and of its lower placed neighbour, Cisbury Ring, are obtained from points of vantage around the house.

The most remarkable feature of a very delightful garden consists in the arrangement of clipped Yew fences, and of close-shaven Box as edgings to the flower garden, which was formed by the present Marchioness of Bath

forty years ago, under the windows of some of the best rooms. The soil suits this system, and the closely shaved edgings, as well as the pyramids of Box, remain entire without a defect. The great hedges of Yew, which are also perfect in all respects, are arranged so as to form an avenue with several adjoining plots, closely surrounded gardens, the division fences being formed in one case of Cupressus macrocarpa, so tall as to require the assistance of steps and a scaffold in clipping it. The Yew hedges are 12 feet high and the sides of the avenue, or Yew alley, are 12 feet apart, the length being 130 yards. The hedges are 15 feet thick and they are cut square, and yet their health and greenness at top and bottom are maintained. Openings have been formed in the walls that face the house and at salient points—at the ends of the alley for instance—these colossal ramparts and wind-defences are topped with pyramids and other geometric figures. (See fig. 110, p. 625.) It cannot be said that such decorations are graceful, and when ill-placed they are sometimes ugly; but here the soil suits them, they are perfect of the kind, and the monster hedges are well placed in the background. In the view of the grounds from the upper terraces the Dutch gardening does not overcome the graceful effect of the whole scene, and amid scores of species of shrubs which cannot be named here, a single specimen of Chinese Juniper, 25 feet high, and the Golden Yew (Elvaston Yew) near it, appeal more strongly to the spectator than the Batavian hedges.

One of the most delightful spots in the garden is the nook where Mr. Conway's ornamental cottage stands. The hardy fernery here is a model of its kind, and among a great variety of hardy Ferns and other appropriate plants growing in the shade are found Polypodium cambricum, Adiantum pedatum, with fronds 2 feet long. Polystichum Lonchites (Holly Fern), which is getting as rare as the Killarney Fern, a single Fern being worth now half-a-sovereign to any Scotch shepherd who finds it. Resuming a catalogue which may interest Fern lovers, there are among other pets, Athyrium cristatum, crested Lady Fern, Asplenium Trichomanes flourishing by a little water-tank close to another lover of moisture, Scolopendrium marginatum, and Scolopendrium alcicorne with fronds pointed with stag-horns, erect in habit, and curved so as to show the fructification at the back of the fronds. Woodruff runs wild, and covers the stonework in patches.

In this same pleasing corner the American All-spice, Calycanthus florida, is perfectly at home. If this hardy and strongly-scented shrub would do as well elsewhere as it does on the chalk, it is not easy to explain why such a desirable shrub should not be more widely grown. Two shrubs beloved by birds bear their berries here, Leycesteria formosa and Phytolacca decandra (the Virginian Poke), whose black berries in Spain make a good colouring for a wine called port. The cottage and its porch are beautifully covered with Ivies, Cratægus Pyracantha, Honeysuckles, a fine-leaved Tamarisk (T. gallica), Cobæa scandens, Passiflora cœrulea, and Gloire de Dijon Rose.

Both fruit trees and subtropical plants do well here. There are very few Walnuts in the neighbourhood this year, but at Muntham one tree alone has produced several sacks. Knowing the ground, Mr. Conway planted some beautiful specimens of Palms, Chamærops excelsa and C. Fortunei, in open and conspicuous places in the shrubberies, and they have stood now the whole year out-of-doors, since 1881, making rapid growth and presenting a graceful appearance.

A greater variety of tender plants is at the present time flourishing in the grounds of Muntham than I could name in the allotted space, and in this remarkably fine season the warm weather has produced a surprising flower garden for November, including, I believe, all the sorts that have been noticed in the papers lately for their untimely, though not unwelcome blossoms. The Fig has behaved strangely this autumn. After bearing an abundant crop, which ripened well in the early autumn, it has blossomed again, that is to say, the trees are covered with immature fruit, which will presently succumb no doubt, and another good crop next year may not be expected. The sorts of Figs grown here outdoors in the long avenue of trees for which the garden is famous, are the Black Ischia, which is the sort commonly grown in Sussex in orchards, on the walls of cottages and farmhouses and elsewhere, the Brunswick and the Madagascar, the latter producing Figs, each weighing a pound and sometimes more. Photinia serrulata is another native of a warmer climate which blossoms at Cannes but not often, I think, in this country, except at Muntham, where a specimen of this evergreen, 20 feet high, now exhibits spikes of blossoms after the hot weather, and some of the more backward ones perhaps may live through the winter. Sequoia sempervirens stands here 70 feet high and measures well in girth, tapering gradually from base to top. Several large Planes form a handsome clump on the lawn, having graceful festoons of the wild Clematis or Travellers' Joy, the "Old Man's Beard" of our chalk district, hanging down from the boughs of the trees at a height of 35 feet. The long feathery down attached to the seed-vessels of this plant is usually an autumnal ornament when the flowers have departed; but graceful as these lianas, or hanging vines of Ladies'-bower may be—for this creeper forms an excellent screen for a bower, "for whispering lovers made"—it had its rivals this year, at the time of my visit (Nov. 3), in a larger number of blossoming plants than I can mention. Among the Planes is an Ailantus glandulosa, Tree of Heaven, which overtops them all, measuring 65 feet in height.

Pinus insignis grows here with delicate green foliage, in the avenue of the north approach, which leads up to the main entrance, where the legend, "Peace and grace be in this place," is inscribed above the portal. A number of large specimens of this very beautiful Conifer forms the main portion of an avenue 500 yards in length. An evergreen Oak, at home here on the Sussex coast, is one of the greatest ornaments of the garden, standing on the terrace, and fruiting freely this season, near enough for Lady Bath, whose garden is her greatest pleasure, to hear from her rooms the falling Acorns as they quit their diminutive cups when ripe, and tumble pattering through the leaves. Creepers cover the walls of the house and the wall of the upper terrace, Tea Roses, Maréchal Niel and others showing their latest blossoms among the foliage of the Clematis. Azara microphylla is an evergreen covering part of the wall, with a seat below it, and its bright green leaves with foliage like the Myrtle, drew me from a distance for a closer examination. Mr. Conway praises this introduction of Messrs. Veitch as a covering for walls, as well as for the decoration afforded by its foliage, which possesses the desirable quality of hardihood. It grows fast here in a northern aspect, and the flat sprays adapt it to a wall. Other coverings of the walls are yellow and white Jasmines, especially Jasminum nudiflorum, and a plant which prefers the sea coast; Escallonia macrantha, Rosa microphylla and R. bracteata, or Macartney Rose. That Rose of Japan, Rosa rugosa, with ripe fruit as large as a Medlar, is one of the autumn ornaments of this well kept garden. A number of plants of Verbena, Pelargonium and Tropæolum are still in blossom in vases and among the borders, Orange trees laden with fruit are bearing their part, like the rest of this unusual vegetation, in diminishing the length of winter by at least a month. Among the unusual specimens on the terrace I noticed the mottled leaves of the curious Pincenectitia tuberculata. Beyond the lawn at the entrance to the pinetum, some clumps of Mediterranean Heath are as ornamental as they are novel for their size, while the Scotch Heath, planted near as a foil apparently, vies with its larger neighbour in size.

I must here conclude this imperfect account of a garden formed for enjoyment, and rendered attractive, both in winter and summer, by skill and good taste. *H. E.*

HYDRANGEA PUBESCENS.

ONE of the Japanese species, but quite hardy in this country. For the specimens whence our illustration was taken (fig. 107) we are indebted to Mr. Gumbleton. The leaf-stalks are of a reddish-purple colour, the leaves ovate acuminate, serrated, deep green above, covered with whitish down beneath; the branches of the flat cyme spread horizontally, the branches being pubescent; the sterile flowers are white, the fertile ones have three styles. Though not equal to the magnificent H. paniculata, the claims of the present plant are by no means to be disregarded.

New Garden Plants.

ONCIDIUM LOXENSE, *Lindl.*

MR. F. SANDER has kindly forwarded me this plant, concerning which I feel glad to make a few remarks. The bulbs are crowded in two irregular dense rows, compresso-pyriform, 3 inches high by 1 inch wide over the base, covered with some irregular branched furrows; hence wrinkled, very light green, nearly prasine. They are surrounded by the long brown scariose bases of old leaves, the young break bursting under the last upper one. The aërial roots are rather thick, long, very numerous. The leaf on the bulb I find to be solitary in the five bulbs at hand, cuneate-ligulate, rather acute, of parchment texture. My acknowledgment of Mr. Eduard Klaboch's faithful drawing is only increased by the knowledge of the plant. I find no two-leaved bulbs, and looking at the drawing with the plant at hand I see these may be represented by fascicles of young leaves behind the bulbs, which give the impression as if they belonged to the older bulbs. I hope we shall be clear about this question in some months, when the breaks have ripened. *H. G. Rchb. f.*

ONCIDIUM VERNIXIUM (*Linden*), *Rchb. f.*

I called this in the *Gardeners' Chronicle*, 1870, 1055, "a highly curious Oncid, quite unlike anything known up to this time." The plant had appeared at Director Linden's establishment at Brussels, having been collected by the late Gustav Wallis. The stiff short branched peduncle was laden with dense brown flowers, edged with yellow. The lip was regarded as highly meritorious, having stiff retrorse short yellow auricles, a long oblong convex mid-blade of fine dark cinnamon, with three very obscure median keels, varnished on the surface, and an anterior semi-lunar bright yellow blade. I saw nothing more of the plant till lately, when Mr. F. Sander sent me two branchlets, a leaf and an old bulb. The bulb is pyriform, ancipitous, with three blunt ridges running longitudinally over the median zone, 3 to 4 inches high, 1 inch wide over the base. The leaf is oblong ligulate, blunt, or acute, narrower at the base, 6 to 7 inches long, by 1½ inch wide; the texture is that of thin parchment. This Oncid is, no doubt, a pretty thing. *H. G. Rchb.*

BARKERIA BARKERIOLA, *n. sp.**

This is quite a lovely gem. It stands near to Barkeria elegans, Knw. Westc., but it is much smaller, and would appear distinct in the petals and lip. Yet I openly confess I saw but one plant and two inflorescences. Whatever may be our final experience of it, it is one of the finest gems. The leaves are lanceolate acute, undulated, reddish underneath, and with a reddish margin above. The long red peduncle has reddish sheaths. The raceme is one-sided, with two to five one-sided flowers. Sepals and petals nearly equal; petals fine light rose. Labellum pandurate or obovate, retuse or acute, white. Anterior disc with a deep purple blotch and some short purple lines on each of the two arcuate, nearly parallel, longitudinal raised lines of the lip. Column whitish-yellow, with numerous purple spots on the hinder side and involved wings. I have to thank Mr. F. Sander for this unexpected agreeable surprise. *H. G. Rchb. f.*

CARAGUATA ANGUSTIFOLIA, *Baker, n. sp.*†

This is a very distinct new species of Caraguata, discovered by Kalbreyer in New Granada, which has just flowered for the first time with Messrs. Veitch. It is totally different in habit from the well known Caraguata lingulata, the leaves being narrow and tapering to a point gradually, as in the Demeraran

* *Barkeria Barkeriola*, n. sp.—Aff. Barkeriæ eleganti, Knw. Westc., bene minor; foliis linearilanceis acuminatis; pedunculo longe exserto secundifloro racemoso; sepalis petalisque oblongis acutis; labello cuneato obovato retuso seu pandurato acuto, utrinque plica longitudinali arcuato; carinis veris nullis; columnæ alis involutis. (Epidendrum Barkeriola). *H. G. Rchb f.*

† *Caraguata angustifolia*, Baker, n. sp.—Acaulis, cæspitosa, foliis multis dense rosulatis semipedalibus lanceolatis e base ovata ad apicem sensim attenuatis facie viridibus canaliculatis dorso tenuiter albo-lepidotis; pedunculo brevi; foliis pluribus reductis superioribus basi rubris tectis; floribus paucis dense spicatis; bracteis oblongo-lanceolatis magnis splendide rubris; calycis albidi segmentis oblongis obtusis, corollæ luteæ tubo cylindrico bipollicari, segmentis brevibus oblongis. *J. G Baker*

Caraguata Augustæ, Benth. (Encholirion Augustæ, Schomb.) The individual flowers are large, and both corolla and bract are very brightly coloured, the former lemon-yellow, and the latter a brilliant scarlet. The peduncle is shorter and the flowers fewer in number than in any of the garden species known already. Morren's Massangea is merged by Bentham and Hooker in Caraguata, so that there are now about half a dozen species in cultivation.

hidden by reduced leaves, the upper ones passing by gradual transition into the bracts of the spike, bright red at the base, with an acuminate green point. Flowers 3—4 in an oblong spike. Bracts bright scarlet, oblong-lanceolate, 1½—2 inches long. Calyx 1 inch long, whitish; segments oblong, obtuse, imbricated. Corolla bright yellow, with a cylindrical tube 2 inches long, and oblong segments ½ inch long. Stamens uniseriate in the throat of the corolla-tube,



Fig. 107.—Hydrangea pubescens. (see p. 616.)

Epiphytic, forming a group of crowded sessile rosettes, each about half a foot long and broad. Leaves fifty or more in a rosette, with a lanceolate lamina, half a foot long, half an inch broad at the dilated ovate base, not rigid in texture, green and channelled down the face, marked with a number of red-brown vertical veins, which are distinctly visible when a leaf is held up to the light; slightly glaucous, with a thin coating of scales on the convex back. Peduncle central, 2—3 inches long, quite shorter than the segments. Anthers ovate, equalling the cylindrical filaments. Ovary ampullæform; style protruded beyond the stamens; stigmas short, lingulate, not twisted, papillose down the face. *J. G. Baker.*

Fibre from Pueraria.—At the last meeting of the Linnean Society some cloth was shown made in China from the fibre of this plant, which was very tough and strong.

VINE CULTURE AND GRAPE SHANKING.

Turning over the pages of Paxton's *Horticultural Register*, published in 1836, I found some important papers on the shanking of Grapes. Then, as now, this question was frequently before the readers of the gardening periodicals, but there was much difference of opinion as to the cause. By far the most practical paper on the subject was by Mr. Stafford, gardener to Richard Arkwright, Esq., of Willersley; and the perplexed state of gardeners as to the cause at that time cannot be better stated than in the words of Mr. Stafford. He says, alluding to shanking:—"Few gentlemen have paid so much attention to the Vine as my present employer during the last forty years, but I do not hesitate to say that at this time he is as unprepared to give an opinion as he was at the beginning; for although he has repeatedly devoted a portion of his

*

premises to experiments, and spared neither pains nor expense, the matter is yet unrevealed. I have, in conjunction with neighbours, made trials of a course of dry treatment, while at the same time they pursued a contrary one; and this course each has reversed, and all without arriving at any decisive conclusion. We have likewise reduced the crops of some Vines to one-half or one-third per tree without coming to the sought-for secret."

One cause of shanking was pointed out by another writer in the same volume of the *Register*. The case occurred in some pot Vines. They were started in a Pine-stove in November. The Vines did well; the bunches and berries attained a good size, but as they required a great deal of water the frequent application of it upon a naturally too strong loam killed many of the roots, with the result that "most of the bunches had shanked more or less." It was further stated that deep borders with soil of a retentive nature caused the Grapes to shank; while shallow borders, with the soil kept open by mixing in it whole bones, large flints, brickbats, and so on, in which the roots ran freely and remained sound, gave much better results. It was also asserted that shanking was the result of a weak state of the Vine. In fact, on carefully reading over the various communications from practical gardeners and others, one is forced to the conclusion that this malady, or whatever it may be termed, had its source in defective root-action. There cannot be much doubt that this is the most fertile cause of Grapes shanking. The roots may be injured by being too wet, or too dry, and the result of the injury is not seen until the Vines most require their aid—that is, at the time the Grapes are colouring or ripening off. In fact, the strain upon the resources of the Vine increases when stoning commences; consequently during the whole process shanking continues.

In fact I can give an instance of shanking being stopped by finding the cause and applying a remedy. In a large Muscat-house shanking began most unexpectedly. The Grapes were swelling all right, but I was fearful that the borders were not sufficiently watered inside; on examination it was found that this was the case. The surface was hard and cracked, and it was therefore loosened with a Dutch hoe, well watered with tepid rain-water, and mulched; in a day or two all the shanked berries were cut off, and there was no more shanking. I have no doubt that, owing to the over-dryness of the border, the roots could not extract sufficient support for the Grapes, and shanking was the result. If this over-dryness had been allowed to increase the results would have been very disastrous. I have since that time frequently watered Vines, both when the process of colouring was going on and after the Grapes were ripe, to prevent their shrivelling.

There is no reason why Vines should not be watered freely when the Grapes are colouring; indeed, there is very urgent reasons why they should, as at that time they require moisture at the roots more than they do at an earlier period. Suppose a case where the border had been allowed to become so dry that the capillary hairs of the roots were injured, and could not take up the moisture until fresh ones were formed; the shanking would not be stopped when water was applied, nor would it until sufficient time had elapsed for fresh hairs to form, which they would do very speedily in the moist soil of the border. Shanking is more rarely produced by the above cause than by a state of the roots not so easily remedied. Vine roots are too often killed by the borders becoming sour.

As a young gardener, twenty-five years ago, I had charge of three vineries under a head-gardener, and all of them used to produce good Grapes, but they shanked badly. In fact, one season nearly the half of them went off, and it always began at the time of the Grapes colouring or changing their condition from the acid to the saccharine state. I soon found that no alterations in the atmospherical conditions in the house made any difference. Giving much air or little; damping freely, cautiously, or not at all; it was shank, shank, night and day. Here, again, one was forced to the conclusion that defective root-action must be the cause. The borders had been well prepared, but in course of years they had become sodden outside, and allowed to become over-dry in winter inside. I dug deep into the borders inside and found no live roots; they had evidently gone deeply into the subsoil, and all the best roots were outside. They were not as they ought to have been, distributed over the borders, the largest proportion of them near the surface.

Herein is to be found one of the prime agents of successful Vine culture, viz., distributing the roots of the Vines through every part of the borders, but principally near the surface. There is no need that the depth of soil be more than 2 feet 6 inches or 3 feet, but the borders must be well drained. It is not possible for the Vines to succeed if there is any stagnant water under the roots. Then, as to the composition of the borders, whether they should be light or heavy, it will be necessary to add brick rubbish and charcoal to keep the soil open when the organic parts of it decay. Some persons have a notion that if the soil happens to be light so much brick rubbish is not required. Now I have planted young Vines in light soil, and also in heavy soil, with the result that the roots soonest get out of reach in the light soil, and it gets into a state unfit for the Vines much sooner when it is light than when it is heavy.

A word about planting Vines may not be out of place. Many persons will be planting them between now and April. The best time I have found is just when they have started to grow; and as they have usually to be turned out of the pots it is necessary to disentangle the roots, spreading them out carefully. The soil should be worked in amongst them with the fingers. It would be very unwise either to begrudge an extra shilling or two in the purchase of a good Vine, or the extra time over planting it as it ought to be. *J. Douglas.*

NOTES ON THE CULTIVATED ASTERS.—III.

(*Continued from p.* 554.)

Subgenus EUASTER.—Bracts of the involucre dry at the base, furnished with spreading leafy tips. Heads copiously panicled; stems abundantly leafy. The largest subgenus, confined to America.

Group III. VULGARES.—Pubescence of the stem and leaves neither tomentose nor viscid; lower leaves tapering gradually into their petioles.

It is to this group that by far the largest proportion of the cultivated Asters belong, and where there is the principal difficulty in settling where one species ends and another begins, and in which the nomenclature and synonymy is consequently very complicated. As Dr. Gray has planned them out, we possess at the present time twenty species in cultivation. I have arranged them in three groups for horticultural purposes, according to the size of the heads. The seven following are the large-headed kinds:—

6. *A. patens*, Aiton. A. amplexicaulis, Michx. A. patentissimus, Lindl.—Stems slender, 2—3 feet long, finely pubescent upwards. Root-leaves oblong obtuse, tapering into a short petiole. Stem-leaves numerous, ovate, ascending or reflexed, rather hispid, clasping the stem with their very large rounded basal auricles, Heads arranged in a broad, lax, deltoid panicle, 1—1½ inch diameter when expanded. Involucre broadly campanulate, ¼—⅓ inch long, very much imbricated, all the rows furnished with lanceolate, hispid, green leafy tips. Ligules 20—30, bright lilac, ⅓ inch long. Achene very silky; pappus dirty white, under ¼ inch long.

Massachusetts to Florida and westward to Michigan, Arkansas, and Texas. A very distinct species. A. phlogifolius, Muhl., is a variety with longer, thinner leaves, the lower oblong-spathulate, sometimes 5—6 inches long.

7. *A. turbinellus*, Lindl.—Stems slender, 2—3 feet long, with long ascending branches, nearly glabrous even at the top. Stem-leaves lanceolate or oblong-spathulate, not distinctly clasping at the base, moderately firm in texture, acute, entire, glabrous, the lower 3—4 inches long, ⅜—1 inch broad at the middle. Heads in an ample very lax panicle, each on a produced slender peduncle, with numerous minute linear bracts, about 1 inch in diameter when expanded. Involucre obconic, ⅓ inch long; bracts much imbricated, with small, obtuse, leafy points. Ligules about thirty, bright lilac, ⅓ inch long. Achene minutely pilose; pappus pale purple, ⅛ inch long.

Illinois and Missouri to Arkansas and Louisiana. Well marked in the group by its involucre and the numerous minute bracts of its long slender peduncle. Flowers with us in October.

8. *A. lævis*, Linn. A. rubricaulis, Lam. A. cyaneus, Hoffm.; Lindl., Bot. Reg., t. 1495. A. glaucescens and A. politus, Nees. A. lævigatus, Hook., Bot. Mag., t. 2995.—Stems stiffly erect, 3—4 feet long, glabrous to the top. Root-leaves oblong obtuse, tapering into the petiole; stem-leaves oblong acute, entire or nearly so, glaucous green, glabrous, firm in texture, the upper conspicuously clasping by a large auricled base, the lower less clasping, 3—5 inches long, 1—1¼ inch broad. Heads 1—1½ inch diameter, arranged in an ample deltoid panicle, with thyrsoid branches, on short peduncles. Involucre campanulate, ¼—⅓ inch long; bracts very much imbricated, all the rows furnished with small lanceolate, green, glabrous tips. Ligules bright lilac, ⅓—½ inch long. Achene nearly or quite naked; pappus copious, whitish, ⅛ inch long.

Canada to Louisiana, and westward to the Rocky Mountains. One of the commonest kinds in our gardens, flowering in October.

9. *A. versicolor*, Willd. A. lævis, Lindl., in Bot. Reg., t. 1500.—Stems 3—4 feet long, subglabrous to the apex. Root-leaves oblong, narrowed into a short petiole; stem-leaves oblong, spathulate, or the upper lanceolate, not distinctly auricled even on the upper ones, and hardly at all clasping at the base, green, subentire, very acute, glabrous, the lower 3—4 inches long, ½—¾ inch broad at the middle. Heads about 1 inch diameter, arranged in ample panicle, with subcorymbose branches. Involucre broadly campanulate, ¼ inch long, well imbricated, all the bracts furnished with large foliaceous tips. Ligules about thirty, ⅓ inch long, varying in the same panicle from white to red-lilac. Achenes nearly glabrous; pappus white, ⅛ inch long.

A common garden type, not clearly individualised as a wild plant. It comes extremely near to some of the forms of Novi-Belgii.

10. *A. Novi-Belgii*, Linn. A. lævigatus, Lam. A. mutabilis, Ait. A. brumalis, Nees. A. adulterinus, Willd.; Lindl., Bot. Reg., t. 1751. A. laxus, præaltus, and longifolius, Gray. A. thyrsiflorus, Hoffm. A. eminens, Lindl., Bot. Reg., t. 1614.—Stems 3—4 feet long, glabrous below, a little pubescent only at the very top. Root-leaves oblong obtuse, tapering into the petiole; stem-leaves oblong-lanceolate or lanceolate, not distinctly clasping at the base, thinner in texture than in lævis, and not glaucous, entire or a little serrated, very acute, the lower ones 3—4 inches long, ½—¾ inch broad at the middle. Heads about 1 inch in diameter, arranged in an ample deltoid panicle with subcorymbose branches. Involucre broadly campanulate, ¼ inch long, well imbricated, the bracts with large lanceolate green leafy tips. Ligules 20—30, bright lilac, ¼—⅓ inch long. Achene finally glabrous; pappus white, moderately firm in texture, ⅛ inch long.

New Brunswick and Canada to Georgia, and westward to Ohio and Illinois. Flowers with us in October. By far the commonest species in cultivation, and very variable. From the type as above described A. lævigatus, Lam., differs mainly by its less imbricated involucre; A. elodes, T. and G., by its linear entire lower stem-leaves of firmer texture; and A. thyrsiflorus, Hoffm., by the more thyrsoid arrangement of its flower-heads on the branches of the panicle.

11. *A. puniceus*, Linn.; Lindl., Bot. Reg., t. 1636.—Stem stiffly erect, stout, often 5—6 feet long, roughly hairy from low down. Stem leaves oblong-spathulate, acute, distinctly serrated, clasping at the base, moderately firm in texture, scabrous on the upper surface, the lower ones 4—5 inches long, 1—1½ inch broad at the middle. Heads about 1 inch in diameter, forming an ample panicle, with subcorymbose branches. Involucre broadly campanulate, ¼ inch long, its bracts not much imbricated and furnished with very large lanceolate leafy points. Ligules 20—30, lilac, ⅓—½ inch long. Achene finally glabrous; pappus copious, whitish, moderately firm, ⅛ inch long.

Nova Scotia and Canada to Dakota, Carolina, and Georgia. Frequent in gardens, flowering in October. Easily distinguished from Novi-Belgii by its involucre and scabrous, more clasping leaves. Var. lævicaulis, Gray, has shorter, nearly glabrous stems, and var. lucidulus, Gray, narrower, shining, smooth, subentire leaves.

12. *A. tardiflorus*, Linn.—Stems slender, spreading, 1—2 feet long, finely pubescent upwards. Stem-leaves oblong-spathulate, acute, sharply serrated, clasping, but not at all cordate at the base, the lower 2—3 inches long, under 1 inch broad at the middle. Heads about 1 inch in diameter, forming a sparse panicle, with corymbose branches. Involucre campanulate, ⅓ inch long, the bracts nearly equal in length, the outer with large, green, leafy tips. Ligules about twenty, lilac, ⅓ inch long. Achene pilose; pappus white, moderately firm, ⅛ inch long.

Canada and New Brunswick to Labrador. A little known plant, well represented by a fine old tuft in the Kew herbaceous ground. The name conveys a wrong idea, as it is one of the earliest of all to flower with us, and is quite over at the end of September. *J. G. Baker.*

(*To be continued.*)

VICTORIA REGIA.

FROM the time it first bloomed in this country, thirty eight years ago, up till now, this, the Queen of Water Lilies, has been an object of the greatest interest to thousands, and continues to evoke the liveliest admiration from those who see it for the first time. A brief outline of the history of the Kew plant, which has been unusually successful this year, may not be unacceptable to your readers.

A fresh plant is raised from seed every year, and the germination is precisely similar to that of other plants of the order. The small fleshy cotyledons do not leave the interior of the seed, but serve to connect the young plant with the store of food known as perisperm in the seed. The true radicle never becomes greatly developed, but numerous adventitious roots are given off at the first node above the cotyledons. It is interesting, however, and even instructive, to note the progressive development of the leaves from a naked, thread-like, tapering petiole, in rapid transition to a halbert-shaped outline, with a long point, then more or less elliptic, with an arrow-shaped base, and hence onward till the leaf is almost perfectly orbicular and peltate, with a shallow sinus at the base and apex. The seedling of this season was planted in the tank on April 21 in a mixture of five parts loam, two of leaf-mould, two of river-sand, and three of old hotbed manure, together with cow-dung. From that time to the end of October the plant has produced fifty-eight leaves and thirty-two flowers. The largest leaves are those produced when the plant is in full vigour, and about to commence flowering. At this period they expand at the rate of from 9 to 20 inches per day for four or five days, attaining a diameter of 6 feet in nine days, after which the rate of expansion is very much reduced. A number of them ultimately attained a maximum little short of 7 feet, and notwithstanding the rapidity of their development, remained in a tolerably presentable condition for eight or ten weeks. The number on the plant varies from sixteen to twenty at any given time. A noticeable feature of the petiole is, that it elongates gradually till after the blade has ceased growing, when a rapid extension takes place, as if to provide room for those younger leaves crowding up behind.

The first flower expanded on July 12, and therefore considerably earlier than usual, the result probably of the abundant sunshine of last summer. The largest were those first produced, measuring about a foot in diameter from tip to tip of the expanded petals, while each succeeding flower became smaller than its predecessor, but by imperceptible gradations. A flower and a leaf expand on an average every third day, so that as the flower is only of two days' duration we never have the phenomenon of two flowers at once, except as sometimes but rarely happens that one lasts for three days. On the morning previous to its expansion there is abundant evidence of what is going to happen. The flower-bud rises clear out of the water, heels over on one side, and, owing to the inequality of growth on either side, oscillates visibly, changing its position two or three times in the course of the day, and pointing to opposite extremes of the compass. More or less regularly about 4 o'clock in the afternoon the sepals and petals on the side next the water burst open, a process that goes on more or less actively till towards 5 o'clock, when the other side bursts apart, and the flower stands erect in all its purity. On the following day it almost closes up for several hours during the middle of the day, finally opening for the last time about 5 o'clock, disclosing the inner petals, which are rather heavily splashed with rosy-red, and which were not exposed the previous day. The flower is now ready for fertilisation, a process which, if left to the plant itself, is very indifferently or not done at all. The many-celled ovary is entirely sunk in the receptacle, and if properly fertilised will bring to perfection as many as 800 seeds. Notwithstanding this enormous reproduction, it is but a small tithe of the ovules produced all over the dissepiments. The fruit swells and ripens under water, but just before it reaches maturity the peduncle rapidly elongates to the distance of 8 or 10 feet—an admirable provision of Nature to convey the seeds beyond the parent plant. No such extension happens in Euryale ferox, the seeds of which, however, are invested with an aril that will float them a long distance. The seeds of the Victoria are also surrounded by an aril, but are, notwithstanding, too heavy to float, although smaller than those of the former. *J. F.*

THE WOOLHOPE NATURALISTS' FIELD CLUB.

THE Fungus Forays, which terminate the year's proceedings of the Woolhope Club, took place last week, and were again attended by many distinguished mycologists from a distance. The successive forays were held this year at Croft Ambury and the surrounding woods, Haywood Forest, Dinmore Woods, and Eastnor Park. The present dry summer has not been favourable for fungus growth, and funguses were therefore scarce; still very many interesting kinds were found, and the week passed pleasantly into history.

The dinner took place at the Green Dragon Hotel, the Rev. Charles Burrough, the President, taking the chair. The funguses cooked on the occasion were Hydnum repandum, the Vegetable Oyster, as it has been termed, and Cantharellus cibarius, the Chanterelle; both were extremely well done, and generally appreciated. After the one toast allowed by the custom of the Club, "The Qeeen," the President called upon Dr. Bull to make the official announcement looked for at the closing meeting of the year, and to welcome the scientific visitors.

Dr. Bull said that he had an unusual number of important notices to give them. The first he had to make was the very gratifying one, that Mr. Worthington G. Smith, F.L.S., an honorary member, had done the Club the honour of dedicating to them his very valuable little work on *The Diseases of Field and Garden Crops*. This little work cannot fail to prove of great value to agriculturists and gardeners. It is entirely original, and contains no less than 143 illustrations. The second notice he had to make was that the *Manual of the Geology of Shropshire*, by the Rev. J. D. La Touche, was on the eve of publication. This very valuable local work had occupied the attention of the Caradoc Club for many years. It contained twenty-two quarto plates, on which were represented no less than 823 fossils, drawn and lithographed by Mr. La Touche and members of his family. the third notice he had to give was that the "*Mycologia Scotica* or *The Fungi of Scotland*, by the Rev. John Stevenson, of Grenus, Forfar, was in course of publication. The next notice was also a very interesting one, and that was Mr. C. B. Plowright, who was so distinguished a pupil he might say of the Woolhope Club, was engaged upon a work, *The Uredines and the Ustilagines, their Morphology and Physiology, with a Description of all the British Species*. He had now to come to what more immediately concerned them, *The Herefordshire Pomona*. The last part of this work was completed except the introduction. It had already fifteen plates, and it was probable that one other would be added in consequence of the recent visit to Normandy. The work had become so large that the committee were at length convinced that it should be bound in two volumes instead of one, and the titlepages and indexes would be arranged accordingly. He was sorry to say that the publication of the last part would be delayed some months in consequence of the plates not being ready; owing to the illness of the chromo-lithographer only five were yet done out of the fifteen, but every effort was being made to hasten their completion. Before another year had passed away the volumes would be upon their shelves, and the work entered into history. Dr. Bull then passed a glowing eulogium on the very kind way in which all the leading gardens of the county had been placed at the service of the Club, and instanced particularly the extensive gardens of Stoke Edith and Holme Lacy, which he said might be called the pillars upon which their beautiful plates rested. He had next to inform them that the *Herefordshire Flora*, upon which the Club had worked for twenty yeare, would be published next year. *The Birds of Herefordshire* would be ready for the following year; and then they had before them *The Funguses of Herefordshire*, all works of the highest interest to the district, and which would prove that the Club had not altogether neglected the natural history of the county.

The President then called upon Dr. Bull to give the results of the inquiries of the deputation to Rouen on the orchard fruit.

Dr. Bull said the real objects for which the deputation was appointed were very simple. The first was to obtain information actually necessary to complete the *Pomona* satisfactorily. There were a great many cider Apples in our Orchards, Bitter-sweets and others, which bore the name of "Norman," but many circumstances had occurred to make the *Pomona* committee consider it extremely doubtful as to whether they really were Norman. Last year it will be remembered that a fine collection of cider Apples, consisting of eight-five varieties, was sent from Normandy to Hereford, not one of which was the same as ours. This rendered it still more necessary to place our so-called Norman Apples on the tables in Normandy in order to make the comparison. This has now been done with much more care, but the Herefordshire Apples were none of them recognised by the Norman nurserymen and fruit growers, nor could the representatives of the Woolhope Club find any of them amongst the 2000 plates shown at Rouen. There was one exception, and that is scarcely a cider Apple. The Foley Norman, said to have been introduced by the late Mr. Edward Foley at the early part of the present century, was closely similar in size, colour, taste, and shape, to the Blanc Doux exhibited there. It has thus become clear that the so-called Norman Apples of the Herefordshire orchards are not really Normans. They are probably Herefordshire seedlings from the farm nurseries, which in the long century of neglect that has passed over our orchards got planted out, and, having no name of their own, have received the fashionable one of Normans. Thus, the Norman Bitter-sweet will become the Hereford Bitter-sweet; the Red, Yellow, and Black Normans will be called for the future Red, Yellow, and Black Herefords; and so on, the name Hereford supplying the place of Norman. The other half of your representatives' work was to select some six or seven of the very best varieties of real Norman Apples. This work is not yet quite completed. Four varieties are chosen, and out of many others three more will eventually be selected; and if the fruit of these can be got in good condition, it is very probable that a sixteenth plate will be added to the forthcoming numbers of the *Pomona*. The brilliant successes of the deputation at Rouen are now well known. The fact of taking the Gold Medal for Herefordshire fruit in the very centre of Normandy is not likely to be forgotten on either side of the Channel—nor, it may be added, is the quality of the Herefordshire cider and perry. Its body, its strength (which could scarcely be believed to be genuine), and its aroma, greatly astonished the authorities at Rouen. It was said, indeed, that had the Woolhope Club been less successful elsewhere it would have stood higher in the cider classes. Be this as it may, the Woolhope Club has obtained a very high position, where its very name had never before been heard, and English Apples and Pears, and Herefordshire cider and perry have gained a respect it was impossible to withhold from them.

Mr. Piper was then called upon, and gave the result of his observations on the land cultivation of the districts passed through, and finished by saying that if the same energy had been shown by the Norman fruit growers in exhibiting as was shown by the Woolhope Club, he doubted very much whether the result would have been so satfsfactory to the English Apples.

A paper on "Woolhope Whittlings" was then read by Dr. M. C. Cooke, of London.

THE ROOT.*

INTRODUCING the subject, Mr. Ward requested his audience to dismiss expectations or apprehensions of marvellous descriptions of tropical or rare roots on the one hand, or lists of the peculiarities of various kinds of roots, or so-called roots, on the other. The object was to show, as well as time permitted, how much valuable information could be derived from careful study of a common root, and that this information is important alike to botanists and agriculturists, as is so much other which they have in common.

The germination of a seed was then shortly described and fully illustrated (as was the lecture throughout) by diagrams, and showed that the young root proceeds to enter the soil to fulfil the purposes for which it has become adapted—viz., to hold the rest of the plant, and to absorb water and dissolved food matters in the soil.

The curious properties of the tip of the root were then examined. It is sensitive to various influences,

* Abstract of a lecture delivered before the Manchester Horticultural Society, November 6, 1884, by H. Marshall Ward, M.A, Assistant Lecturer in Botany at the Owen College.

turning towards the centre of the earth with marked persistence. It also avoids the light and tends towards a moist surface; but, strangest of all, perhaps, are its sensitive actions towards solid bodies and irritants, and its curious rocking movements. Some time was employed in shortly describing these matters, and showing how they probably aid the tip to enter the soil.

The structure of the firm, rigid, and even elastic tip, and its protective cap, was then sketched, stress being laid on the fact that such a body could not possibly serve as an absorptive organ, but that it is admirably adapted for being steadily pushed between the particles of soil, aided by its guiding sensitiveness to various influences, its tendency to slightly rock on all sides, its slippery surface, and conical shape. The elongation of cells behind pushes this tip slowly and steadily forward with relatively enormous force. This point explained, the lecturer then proceeded to show how root-hairs arise in millions on the parts which have ceased to elongate —an obvious adaptation, which prevents their being rubbed off as the rest of the root moves forward.

A still more beautiful adaptation to the same end was shown in the origin and development of the rootlets, which arise beneath the surface of the elongating roots, to come out when the part has ceased to move forwards, hence employing the time but avoiding the danger.

The efficient distribution of root-hairs and rootlets was commented upon, showing how every crevice of the soil is successively explored from the central roots, the rootlets reacting differently as regards gravitation from the primary root.

The mode in which root-hairs attach themselves to particles of sand, slate, &c., in the soil, glueing themselves to their surfaces, was described, and then Mr. Ward shortly explained their action in absorbing the aërated water and its dissolved salts.

The clear evidence of adaptation in structure and function to the environment was touched upon; the author pointing out that the historical matters here concerned, and the comparison of a large series of forms would take several lectures, but would be quite conclusive as to the struggle for existence which roots have undergone before they earned their present rights as dwellers in the land.

CATTLEYA MAXIMA.

WHEN describing this beautiful Orchid in the *Botanical Register*, 1846, plate 1, Dr. Lindley says: —"The more our knowledge of the varying forms of Orchids extends the less do we feel able to determine what characters or peculiarities of structure are of real value in distinguishing the species. Everything which, among other plants, has gained a fixed value, appears here to he unstable, and even the most marked differences in form are proved by incontestable evidence to grow out of each other. This being so, we may be excused for doubting how far this beautiful plant can lay claim to the rank of a species, for it evidently approaches C. Mossiæ and C. labiata in many important particulars." By the experience gained by time we can verify the worthy Doctor's remarks on the unstable character of the features by which Orchids are to be recognised; indeed, in many cases it is wise not to give a decided opinion without ample material both as to habit of plant and flower. Cattleyas are particularly liable to run one into the other, and therefore the remarks as to the specimen before him bearing a resemblance to C. Mossiæ and C. labiata were to the purpose. Our own better acquaintance with the plant now proves to us that it is amply distinct, and not easily to be confounded with any other known species. The species was first sent over by Hartweg from Guayaquil and Colombia, in 1844. The same species is now in bloom, with six flowers on a spike, in Messrs. Veitch's nursery; it is the pale form, its flowers being nearly white on opening. Two other distinct forms, pretty true to the localities from which they were collected, have in see been imported —the one a fine dwarf-growing variety, with clear rose flowers, by Messrs. Jas. Backhouse & Sons, of York, and the other a stout, massive form, with large spikes of bright rose-coloured flowers, their lips being tinged with yellow, and heavily veined with crimson. This last, the best form of all, has recently been introduced by Mr. F. Sander, of St. Albans. C. maxima is yet rare in our collections, the best of them containing but few plants of it. Soon, however, when the ease with which the plant can be grown in a cool (it is is said to grow much cooler than C. Trianæ) intermediate-house becomes known, it will occur more plentifully, and take its proper place as one of the best and most distinct of our Cattleyas. The light coloured form is figured in the *Botanical Magazine*, vol. lxxxii., tab. 4902. C. maxima is of noble growth, having tall, upright pseudobulbs and handsome foliage, the plant often attaining a height of over 2 feet.

THE ROSE OF HILDESHEIM.

OUR engraving (fig. 109) of this wonderful Rose tree, which clambers up the ancient tower of the "Dom," or Cathedral of Hildesheim, in Lower Saxony, pourtrays an object around which several beautiful legends cluster. The plant is certainly of a great age, as, by researches made in the year 1883, it was found that its roots are really under the foundation-stone of the walls, and therefore it has been assumed as a fact that the Rose was there before the building began, and for some reason was preserved during the time the structure was raised, and has been moreover during all the intervening centuries an object of great veneration and care. The legend relates that Ludwig, the son of Charlemagne, fixed his residence at Elze, on the Leine river, because of the immense forest and swampy ground there, where game of all kinds abounded. One day the Emperor went a-hunting, mounted on a strong horse, and accompanied by a great following of courtiers, huntsmen, and hounds. They had ridden for several hours, when suddenly a white stag sprang out of the bushes, so stately and large as had never before been seen, and the Emperor resolved to hunt it, be the consequences what they might. He urged on his hounds, gave his horse the spur, which sprang forward so rapidly that the hounds were soon left behind.

But faster fled the stag, which seemed as if nothing could tire it; and so proceeded the hunt, over hill and dale, stick and stone, but the Emperor never reached the stag; so came the quarry, whose coat glimmered through the dark forest, to a stream, into which it plunged, swam across, and disappeared in the gloom beyond. The rider forced his horse into the stream in the vain pursuit, but it was thoroughly exhausted and was soon carried away and drowned, he himself swimming to the bank. Just there a little hill reared itself, and up this clambered the Emperor, intending to wait till his retinue came up. He blew his horn, like a Roland, till it all but burst, but no one came; and he gave himself up for lost, and believed that here he must end his days; and being a pious monarch he took from his neck a relic of the Virgin, and hung it on a wild Rose bush, that grew by the side of a crystal fountain; he then knelt down and prayed that she would not desert him, but permit him to be rescued. Being calmed by his devotions, he lay down on the soft moss by the spring, and slumbered, when suddenly a voice cried out of the clouds calling him by name, telling that so far as the snow reached he should build a church to the honour of Mary; and before he had recovered from his astonishment it began to snow, although it was the middle of summer.

It did not last long, but a piece of the moss was covered, and reached unto the Rose bush, showing the ground-plan of the walls, the tower,

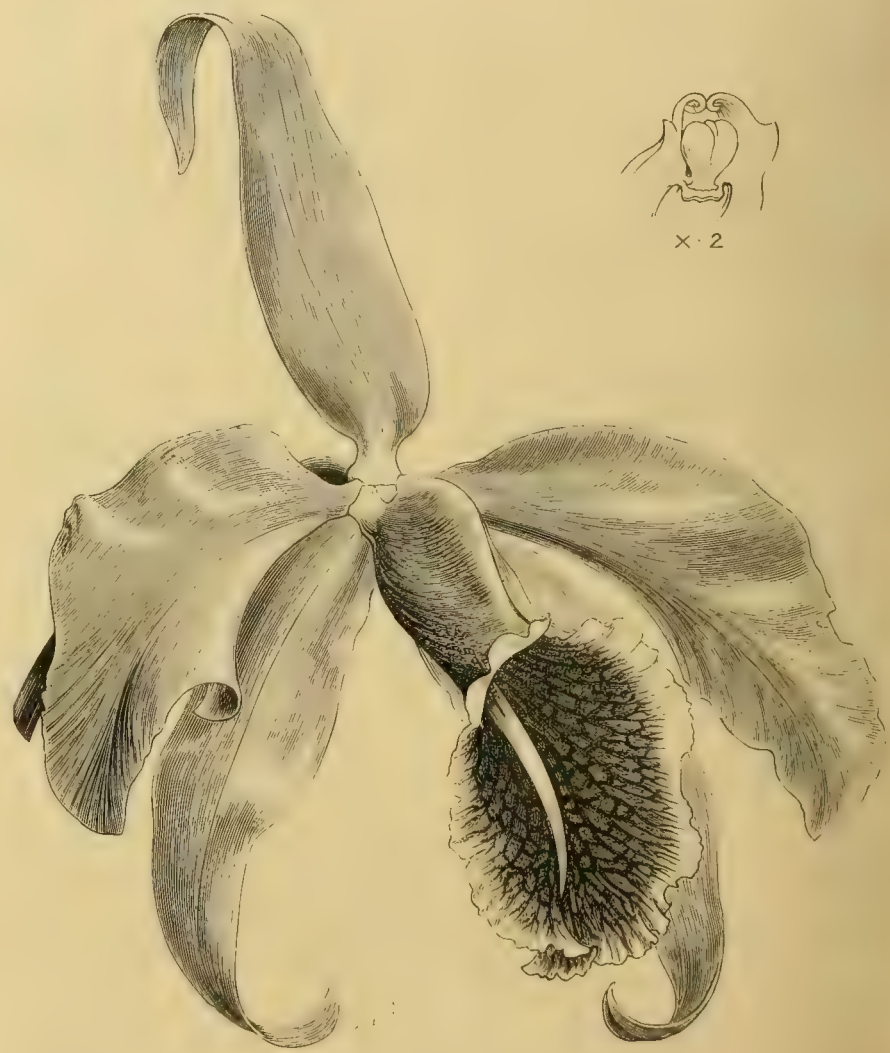


FIG. 108.—CATTLEYA MAXIMA.

and of the pillars and the altar. Presently his retinue came up, and they also saw the wonder, and the place was called "Hilgen Snee" (Holy Snow), because of the wonderful fall. What the Emperor promised was soon carried out, for he was a rich and mighty prince. There came stonemasons and built a beautiful church, but the Rose the Emperor would not allow them to grub up. They carried the walls over its roots, so that it stood under the high altar, and it grew and throve; and it is said that when it puts forth but few leaves, and has but little vigour, then heavy misfortunes befall the church of Hildesheim. So says the legend. The annalist Saxo says that in the year 815 A.D., when Ludwig had crossed the Leine, and had come to a place where the church now stands, he formed a camp for a time, and had the relics from the royal chapel set up there, and when the hunting camp was broken up the chaplain in charge of the relics forgot them, leaving them behind at the place where offerings had been made, and, going back for them, found them so overgrown by the Rose that in spite of all endeavours they could not be detached, and on account of this wonder a chapel was erected, and years after the place, now become a town, was created a bishop's see, and Gunthar was the first bishop. The fourth bishop in succession from him, Altfried, built additional structures, one, a chapel, being dedicated to St. Cecilia; and, among other alterations, the original chapel became the crypt of the new—the new buildings being consecrated in 872.

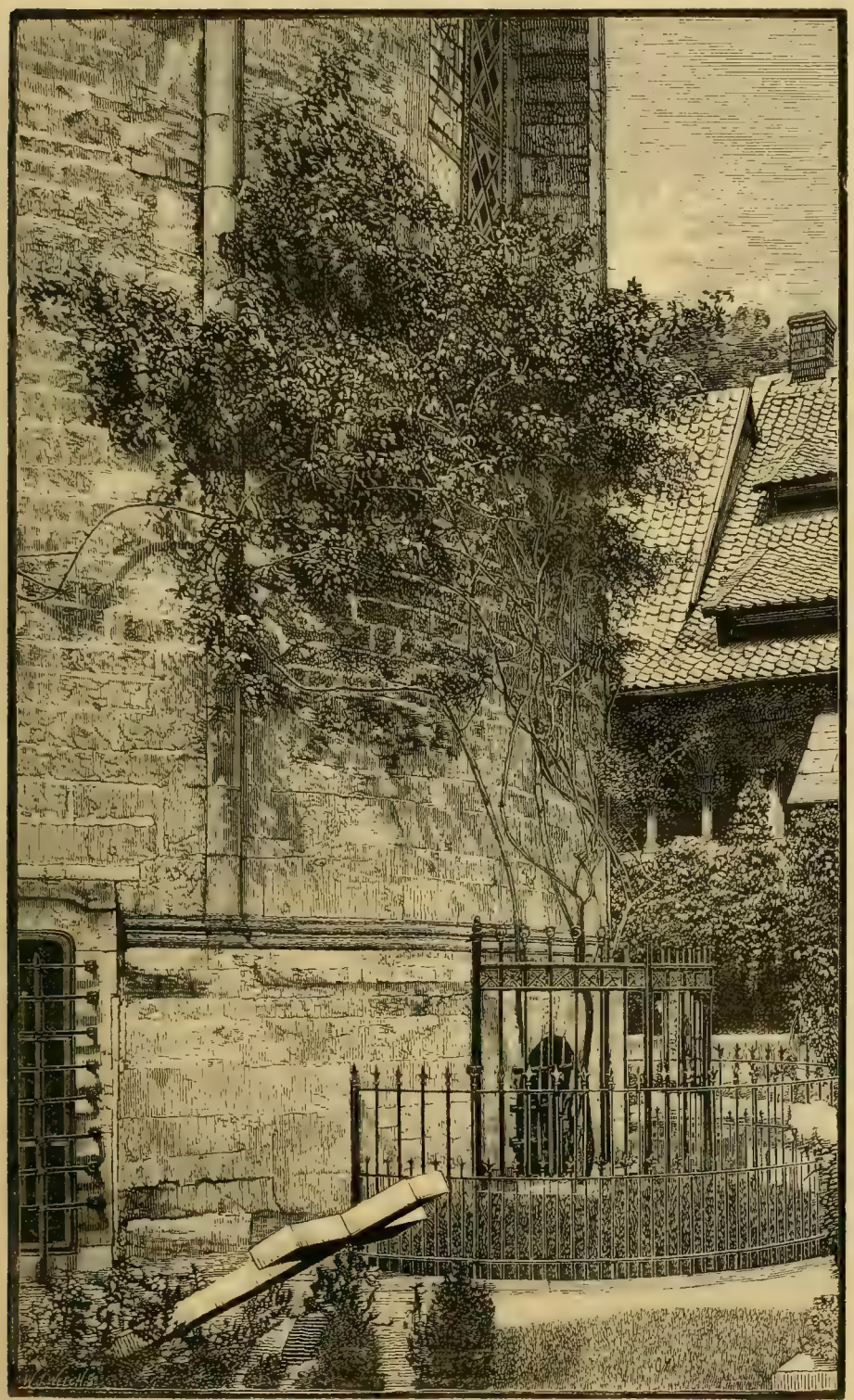


FIG. 109.—THE ROSE OF HILDESHEIM. (SEE P. 620.)

FOREIGN FOREST PRODUCE.

WOODS and forests seem attracting especial attention this year, due no doubt to the holding of the Exhibition in Edinburgh, and it is perhaps to this fact that we owe the appearance of one of the most interesting series of Government reports that has been issued for some time. The reports referred to have just been issued under the title of *Reports of Her Majesty's Representatives Abroad, on the Cultivation of Woods and Forests in the Countries in which they Reside.* The first treats of the Duchies of Coburg and Gotha, and we are told at the outset that the total area under forest cultivation in the Duchy of Gotha amounts to 44,140 hectares. These forests consist of 85 per cent. of Pine and 15 per cent. of other wood. Pine and Beech are the principal timber trees. Regarding the administration of the forests, it is stated that the "supreme head of the Forest Administration is the Ducal Minister of State in Gotha, Department No. IV." Under him are four inspectors and fourteen forest sub-inspectors. It seems, however, that "from the 1st July, 1883, the offices of the four forest inspectors were abolished and their duties taken over by the Ministry of State, coincident with the appointment of twelve superior verderers."

Timber from the Thuringian forests is much liked in the trade, and can hold its own against all native as well as foreign timber. The reason why the price of timber in later years has fallen, is the insufficiency of import duty on foreign timber, which permits the German market to be swamped with timber from Sweden, Norway, Friesland, and Galicia. The introduction of stone and brick architecture and of iron even in small towns for purposes of building have also further contributed to this reduction in price of timber for building purposes.

In the report from Germany it is stated that the desirability of attempting to introduce other than indigenous trees into Prussia has claimed the attention of the authorities, who point out that in the event of the experiment being attended with success, not only would less wood have to be imported, but that the revenue from this department would be considerably increased. Care, it advises, should be taken in growing foreign trees to select those which are found in as many latitudes as possible, and their growth should not, at any rate yet be attempted in those parts of the empire which are subject to the severest winters. In the Budget for 1880, 50,000 marks were set aside for the purpose, but as no later report has been issued, means are wanting by which to ascertain whether the experiment is being attended with the hoped for success. The following trees were recommended for introduction:—Pinus rigida, Abies Douglasii, A. Nordmanniana, Thuia gigantea, Pinus ponderosa, P. Jeffreyi, P. Laricio, P. sitchensis, Cupressus Lawsoniana, Juniperus virginiana, Juglans nigra, Carya alba, C. amara, C. aquatica, C. tomentosa, C. porcina, Quercus rubra, Populus monilifera, Betula lenta, Acer Negundo, A. saccharinum, A. dasycarpum, esides some Japa nese Conifers.

In the report on the Russian forests, the various kinds of trees found in the country are treated of rather fully, and the limit of each kind given in detail. In the northern provinces, cutting down trees and sawing them into planks forms a very large trade, and gives good returns. A very large population is employed in floating timber, or barges laden with firewood, down the rivers to the ports of export, or to places unable to supply themselves with wood. The principle use made in Russia of the logs floated down the rivers as rafts, or else sawn up into planks, is that of house building, for which purpose it is reckoned that 30,000,000 cubic feet are used annually. Out of 1,820,000 inhabited houses in the central agricultural districts only 74,000 are built with stone, and in the manufacturing districts, out of 1,400,000 inhabited houses only 6800 are built of stone. How frequently these wooden houses have to be renewed is tolerably well shown by saying that Russia is burnt down every seven years. A considerable quantity of timber is also used in ship and boat building, and it is calculated that about 75,000 vessels of different sorts ply on the inland waters of the Empire. Of the above number a quarter are annually destroyed, so that about 15,000

must be built in the course of the year to replace them.

Under the head "Industries in Wood" some very interesting facts are recorded; thus in referring to carriage and cart building it is stated that a vehicle is seldom finished off on the spot: one village will provide the spokes for the wheels, another the boxes, another will make the body for the cart. Another great industry is that of wooden spoons, of which about 126,000,000 are annually made. In the same way are the spoons finished off: one will cut the wood into lengths, another shape the spoon in the rough, another hollows it out, and at last it passes into the hands of the varnisher. The spoons are generally made of Birch, Poplar, and from the dust of Boxwood. One cubic fathom of wood makes about 4000 spoons; a man can make 180 in a day. The average price per 1000 is from 6 to 8 roubles, and about 3200 cubic fathoms of wood are annually used for this purpose. They are exported, *viâ* Tibet, to Khiva, Bouchara, and *viâ* Astrakan to Persia.

Yokes are mostly made in the Government of Kazan, of Elm and Willow. Three workmen in a family are calculated to produce from 700 to 1000 in the course of the winter. From the bark of the Alder tree a green dye is extracted, with which they are stained. Their principal markets are in Simbirsk and Samara. In Tula concertinas are made to the extent of 250,000 yearly; and in the Government of Viatka, besides concertinas, organs and violins are also made. Besides these and many other branches of industry in timber itself, an important trade is done in the bark of the Lime tree. From this material more than 100,000,000 pairs of bast shoes are made annually, each pair requiring three-fourths of the bark of a young tree. An immense quantity of bast is used also in making matting and sacks, and it is estimated that this industry considerably exceeds 2,000,000 roubles a year. In Viatka alone 500,000 Lime trees are cut down annually for this purpose, and 900,000 mats and 600,000 sacks made annually. The best matting is called "Schangskaia," and is largely exported to England. Tar, pitch, turpentine, birch oil, and charcoal are also large and important products of the Russian forests.

Under the heading "Plantations along Railways," some careful details are given of the extent to which this has been carried, with the object of protecting the track from snowdrifts. On the railways where it has been tried it has been very successful, so that it is proposed to carry it out more generally. Seven rows of plants have been the rule, some of trees and some of shrubs. The following plants it seems have been most successful:—Elm, Ash, Oak, white and yellow Acacia, Lime, Maple, Whitethorn, Elæagnus hortensis, Hazel, wild Plum (Prunus spinosa), Gleditschia, Mulberry, Amorpha fruticosa, Ligustrum vulgare, Sambucus, &c. These have for the most part been planted in an unfruitful soil in dry exposed places, but have nevertheless done well. Along the Tunic Railway, Government of Charkoff, the Pine (Pinus sylvestris) has been planted and flourishes, and at Karlowka, in the Government of Poltava, it grows on the open steppe.

For fixing the sand plains at Aleschki, on the Dneiper, the Government has planted largely Salix acutifolia, Genista tinctoria, Ulex europæus, Prunus spinosa, and Pinus maritima.

These interesting reports conclude with a *précis* by Dr. Lyons, M.P., of the "Reports on Forestry of the United States Department of Agriculture," in which he describes the working of the Department in distributing seeds, which are always the best of their kind; in assisting the introduction and distribution of fibrous and other useful plants, and, in short, of diffusing through its horticultural, botanical, chemical, microscopical and other departments, a general knowledge of and interest in all things connected with the welfare of the products of the soil.

BROUSSA TEA.—At the last meeting of the Linnean Society Mr. W. T. Thiselton Dyer showed a specimen of Tea made at Broussa from the leaves of Vaccinium arctostaphylos. So close was the resemblance and fragrance to that of ordinary Tea, that the customs' authorities refused to allow the sample to pass without paying the duty as Tea. The quality of the infusion was stated not to be good. Mr. Bennett alluded to the use of Ledum leaves in Canada for like purposes. It is hoped that Dr. Schorlemmer will analyse the leaves both of the Vaccinium and the Ledum to ascertain whether thein or any allied alkaloid be present.

Florists' Flowers.

THE AURICULA.—Those who have an Auricula-house should remove the plants into it this month; not that the plants will take any harm in frames, if they are vigorous and healthy, but all varieties are not so, and some of the more weakly ones are liable to injury by the damp, nasty, November fogs. They are not so likely to suffer if they are in an airy house. We have not yet finished re-potting all of the seedlings, but it is more for want of time than for lack of the will to do so. Both in the frames and out-of-doors the decaying leaves falling and blowing about rest on the plants, causing injury to them if they are not removed. Some persons say "Let the leaves alone, they protect the plants from injury." This is a mistake in the case of Auriculas, and indeed any other plants that are furnished with tender green leaves. Plants of a tender nature and that die down during the winter months are greatly benefited by any leaves that may gather round their crowns, as they may suffer from frosts without this or some other protection.

THE CARNATION AND PICOTEE.—The plants potted a month ago are now well established, and the best thing to do with them is to keep the lights off night and day when the weather is favourable. We draw the lights over them to shelter from heavy rains. Many growers keep their plants very dry all through the winter months. I fancy this over-dryness has a tendency to produce gout. All the watering they require is to look over the frames about twice a week, and with a small water-pot water such as are really dry. For instance, our frames were looked over to-day, and not one plant in a dozen was found that required any. In three or four days they will again be looked over, and unless drying winds have prevailed, the number requiring water will not be larger. Some persons do not care to trouble with Carnations in pots, and others have not the convenience to grow them under glass. They plant them out in beds or borders early in November. In that case most of the plants must be supported with small sticks, and further, some dry decayed stable manure should be spread over the surface of the ground and close to the plants. Tree Carnations still continue to produce blooms freely in a rather dry atmosphere, and a night temperature of about 50° to 55°. A succession of bloom is kept up from plants that are in a greenhouse or cold vinery. The plants flowering are aided by giving them some weak manure-water at each alternate watering.

THE DAHLIA.—Frosts have come at last, with severity sufficient to kill the blooms, but not enough thoroughly to destroy all the foliage. Their beauty was quite over, and we took advantage of the fine weather early in November to dig up the roots. They were well dried by being laid in the late vinery, where air was freely admitted. Afterwards they were placed with the stems upward in a house where frost can be kept out, some cocoa-nut fibre being laid over the tubers. The term pot-roots is often used in relation to the Dahlia, but many persons have not a distinct idea what a pot-root is when applied to the Dahlia. They are obtained in this way. During the summer months small side-growths are taken off and struck in frames; when rooted they are potted into 4-inch pots, and are grown on until the end of the season, when the pots are placed in a cool house, and are kept dry for the winter. In spring they are shaken out of the pots, repotted again, and started into growth with the ground roots. If several growths break from one crown, they may be removed with the exception of one.

THE POLYANTHUS.—This is a plant we have more difficulty with than any other, hardy or exotic; for do as we like with the plants they continue to decline during the summer months, and at the time for repotting them in August many are dead and the rest weakened. What they require when making their growth is a cool moist climate, and that we cannot have in the South of England. I was delighted to see a bed of choice varieties growing freely in the gardens of S. Barlow, Esq., J.P., on the Little Orme, near Llandudno. In our own garden they refused to grow. Probably if we could easily keep them free from red-spider the difficulty would be overcome. They should now be placed under glass, they having been potted, of course, in August or September.

THE TULIP.—The bulbs should be planted as speedily as possible, if they are not already in the ground. In planting them it is a good plan to draw a deep drill with a hoe, place the bulbs about 9 inches apart in the drills, and sprinkling a little sand under and over them. The drills should then be filled up with good loam. Of course, to be successful in producing fine large blooms, the soil ought to be deep and rich. The sand and good maiden loam round the bulbs tends to preserve them in a sound and healthy condition. The fibrous roots soon grow out into the rich soil beyond. *J. Douglas, Great Gearies, Ilford.*

PLANT PORTRAITS.

CLEMATIS FRANÇOIS MOREL, *Revue Horticole*, October 1.—Flowers red, 3¼ inches across.

CYPRIPEDIUM CILIOLARE, *Illust. Hort.*, t. 530.

DIANTHUS ALPINUS, *Garden*, August 30.

ERIGERON AURANTIACUS, *Garden*, September 20, 1884.—A dwarf orange-flowered Composite, from Turkestan, resembling a Marigold, but with narrower florets.

ERODIUM MACRADENIUM, *Garden*, August 30.

FRITILLARIA IMPERIALIS VAR. INODORA PURPUREA, Regel, in *Gartenflora*, t. 1165.—If this variety retain its scentless character it will prove very desirable. Native of South-east Bokhara.

GUNNERA MANICATA, Lind., *Illust. Hort.*, t. 531.

HABRANTHUS PUNCTATUS, *Gartenflora*, t. 1163, fig. 3.

ISMENE ANDREANA, *Revue Horticole*, October 16.—See *Gard. Chron.*, 1884, xxi., p. 11.

LESCHENAULTIA BILOBA MAJOR, *Garden*, October 4.—A beautiful Australian shrub, with linear leaves and flat five-lobed blue flowers.

LILIUM SUPERBUM and TYPICUM, *Gartenflora*, t. 1169, *d.—f.*

MASDEVALLIA BELLA, *Belgique Horticole*, 1884, t. iii.; *Gard. Chron.* 1878, i., p. 725; 1880, i., pp. 756, 760.

MUTISIA BREVIFLORA and M. VERSICOLOR.—*Gartenflora*, t. 1163.

ODONTOGLOSSUM ŒRSTEDI, *Garden*, Aug. 23.

ODONTOGLOSSUM ROEZLII AND VAR. ALBUM, *Garden*, September 13.

PRIMULA OBCONICA, *Garden*, September 6.

PYRUS MAULEI, Mast., *Bot. Mag.*, t. 6780, October.—See *Gard. Chron.*, vol. ii., 1874, p. 756, t. 159, and vol. iii., p. 744, fig. 144.

SENECIO MACROGLOSSUS, *Garden*, Aug. 2, 1884.

STREPTOCARPUS KIRKII, Hook. f., in *Bot. Mag.*, t. 6782.—A species with an erect robust stem, opposite leaves, and slender, sparingly branched cymes, with small lavender flowers.

VRIESIA XIPHOSTACHYS, *Gartenflora*, t. 1170.—See *Bot. Mag.*, t. 4287.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF GREENHOUSE RHODODENDRONS (*continued*).—1. R. Edgworthi and its varieties—R. Countess of Derby, R. Lady Skelmersdale, R. Mrs. James Shawe, R. Countess of Sefton, R. Duchess of Sutherland, R. fragrantissimum, R. Sesterianum. These beautiful plants, comprising the Himalayan or large-flowering varieties, are for the most part easily cultivated, and will thrive well in a cool airy Camellia or Azalea-house. There are three ways of increasing a stock of these plants, viz.:—1, from seeds; 2, from cuttings; and 3, from grafts.

1. *From Seeds.*—If a large quantity of plants is required they must be obtained from seeds, and as there is great difficulty in obtaining seed of good quality and true to name, it will be found a good plan to obtain the seed by artificial fertilisation. For this purpose it will be necessary to fertilise two or three flowers on each plant, and when the seed-pods begin to increase in size the plants should have all the top shoots pinched out, so as to secure a larger proportion of food for the formation of the seed-pods. Immediately the seed is ripe it should be taken from the pod and sown, having previously prepared some shallow, well drained pans and filled them with a mixture of finely sifted peat, sand, and a little loam, levelling the surface of

the soil and well watering it: the seeds should be sown thinly on the surface. The seed-pans should be placed upon a damp shelf or raised platform in a house of intermediate temperature, and as they should never be allowed to become dry it is usual to stand the pans upon an inch of river-sand, which should be kept well watered. Much damage is often done to seeds by the drip from the roof; to prevent this it is well to place three small pots, inverted, around each pan, forming a triangle, and to place upon them a square of glass. Care should be taken to keep the soil damp, but if the pans are placed in a damp position they will seldom require watering, and it is better not to water them often because it often produces decay. When the seeds have germinated, and while they are still in the seed-leaf, they should be pricked off into shallow pans or pots and placed about a quarter of an inch apart. It is always best to prick off young seedlings from small seeds as soon as they have appeared, as they are apt to "damp off" as it is termed—the pans to be replaced upon the shelf or platform kept in a constantly damp state, and when they are sufficiently strong each seedling should be potted into a thimble pot. After watering them they should be replaced upon the shelf or platform, upon which should be laid a 1-inch layer of river-sand to hold the moisture around the seedlings. As they develope they can be by degrees successively potted into larger and suitable pots, until at last they can be taken from the intermediate-house and placed upon a front platform of a cold house. The raising of Rhododendrons from seeds is slow work, but it is very interesting.

2. *From Cuttings.*—It must be remembered that in taking the cuttings the wood must be thoroughly ripe and hard, and the growth well finished up, a choice being made of the tops of shoots of intermediate growth. The cuttings, which should be about 3 inches long, being made with a slanting cut as before described for the jasminiflorum varieties, pot them up, pressing the soil tightly around the plants, and put them in a shallow cutting frame, where they should be treated in the same way as the jasminiflorum species.

3. *From Grafts.*—R. arboreum as a stock is best suited for grafting R. Edgeworthi and its varieties upon. Side grafting is the best, and the graft should be put on the stock as low down as possible. After preparing the stock a cut 1 inch long should be made down the side of its stem, but the knife must be withdrawn without completing the cut, which should be done from the outside by an inward and downward cut so as to form a kind of cleft in which to rest the end of the graft. Having made the graft to fit, stock and scion should be securely bound together, and placed in the grafting frame. Here we may say it is difficult to obtain R. Nuttalli either from cuttings or by grafts; it does, however, graft well on R. arboreum, but the difficulty is that it will not start into growth, indeed we have seen such grafts stand about two years before making any signs of growth. It can, however, be readily obtained from seed, and if well followed up the seedlings soon make fine plants. R. Dalhousiæ and R. Henryanum should be grafted upon the R. Countess of Haddington or R. Gibsonii. R. Countess of Haddington roots freely and grows quickly, and therefore makes a very good stock for R. Dalhousiæ and its varieties.

R. Veitchianum.—The habit of this truly beautiful plant is found fault with, but our experience shows that such a complaint would never have been made had the knife been more freely used, for we have found that, when cut back into the old wood, it breaks freely enough, provided the roots are in a good state; and if the shoots are stopped a few times while it is growing, it soon forms a nice bushy plant. It is quite as hardy as any of the other greenhouse Rhododendrons, and like its allies, R. lævigatum, R. calophyllum, R. Denisonii, R. Maddenii, R. Falconeri, R. formosum, R. Jenkinsii, R. Thompsonii, R. Aucklandii, R. camelliæflorum, and R. eximium, can be obtained from seed and by cuttings, which should be made in the way above described, only it is necessary that in making cuttings of strong-growing varieties, the weaker growth should be selected. For grafting purposes, R. arboreum will be a good stock.

In conclusion, we may point out that the best season of the year for potting the entire collection of greenhouse Rhododendrons is during the months of December and January, because it is not wise to disturb their roots during the warm weather. Well-drained pots should be used, and care should be taken not to over-pot the plants. They should be potted in soil composed of peat, loam, and sand, well mixed with a little broken charcoal and ballast, and should be kept moderately dry until the growing season commences. *T. O.*

The Flower Garden.

Transplanting.—As the weather continues mild this work may still be performed; it should, however, be pressed forward with all possible speed, so as to complete it before a change occurs, otherwise there will be but little chance of delicate shrubs succeeding, as the earth temperature declines so rapidly at this season, and the atmospheric conditions are also generally so unfavourable to growth that the operation of transplanting should not be delayed a day longer than is absolutely necessary. The actual work should also be performed quickly, skilfully, and methodically—quickly so as not to expose the tender roots to the shrivelling effects of the atmosphere. The practice of permitting the roots of tender shrubs and trees to be so exposed for hours is a prolific source of failure, and cannot be sufficiently condemned. Skilfully and carefully, because when a tree or shrub is deprived of the greater part of its young and fibrous roots in performing the operation, so much longer in proportion will it be, and so much greater will the difficulty be in its becoming re-established. Methodically, because all garden operations, and especially those of a delicate and difficult nature, should be always so performed. Method and order may appear to some practitioners synonymous with extreme slowness and tediousness, but while the former excellent traits conduce in the end to quickness and success, aimless hurry and irregularity frequently tend to produce the very opposite results. Before commencing to plant either trees or shrubs, the object and use for which they are ultimately intended should be duly considered; such trees and shrubs only should be chosen whose habits and characters are found most in accordance with those objects. Due care should also be exercised in selecting such kinds only as will most probably succeed in the soil and situation intended to be planted. Inattention and disregard to this matter is frequently a source of failure and lasting disappointment. As the operation proceeds, every plant should be watered, mulched, and firmly secured against storms.

Rose Garden.—This is perhaps the most convenient, if not quite so favourable a season, as the end of October for transplanting Roses. To be successful Roses must be planted in a moderately rich, if not a deep soil; while in a great depth of soil they appear to succeed best in dry seasons, they do equally well if not better, in more shallow and even comparatively poor flinty soils, in wet seasons provided they are well mulched with manure, to prevent injury accruing from too rapid evaporation, or other sudden atmospheric changes. Where it is necessary to enrich the soil before planting, the manure employed should be thoroughly decomposed, but where the soil is naturally heavy and tenacious of moisture, it will be found far preferable to give a liberal dressing of burnt earth, mortar rubbish, or sand, with a surface after-mulching, rather than introduce any manure into the soil. Standards are still, and will continue serviceable for special purposes, but dwarfs are undoubtedly rapidly regaining the position they formerly occupied. This is not at all strange seeing they are cheaper, more easily protected, and produce flowers quite as freely and as fine as standards, in addition to which they are naturally more beautiful and can be more conveniently trained to any desired form. Where they are intended to be grown for the purpose of exhibition, especially if the intention is to exhibit in the larger classes, great variety must, of course, be secured; but where the object is to compete only in the smaller classes, or where they are intended simply for home decoration, it will be found much more satisfactory to grow, instead of great variety, a larger number of plants of a few really good sorts. As a rule there is no stock so useful for budding or grafting upon as the Manetti, still there are many of the Teas which succeed infinitely better on the seedling Brier, or even on their own roots; this, however, depends very much on the soil and situation in which they are planted, and the careful cultivator will soon see and be able to judge for himself which answers the best. In planting great care should be taken to secure the plants firmly in the ground so as to prevent after-disturbance of the roots, as also to thoroughly protect the roots from injury by frost with a sufficient surface mulching; and above all things avoid planting when the ground is in a cold, wet, puddled condition.

The lawn will now require constant attention in clearing up leaves and rubbish by frequently sweeping and rolling, otherwise it will soon become unsightly; walks also will require similar treatment so as to make them clean, dry, and pleasant to walk upon at all times. *T. S. C.*

The Kitchen Garden.

If the condition of the soil is not favourable to the growth of some kinds of vegetables, something should be done with a view to make it more so. If it is too stiff much may be done, if the garden is properly drained, by the liberal use of leaf-mould and chalk, which should be well incorporated with it, and the land ridged up roughly during the winter, so as to fully expose it to the influence of frost. On the other hand, if the soil is too light recourse should be had to the use of clay, roadside parings, and such-like materials, which will produce a mechanical change in its quality, and thereby be rendered more suitable to the growth of most crops. Breadths of Cauliflowers, which are yielding a plentiful supply, should be looked over at short intervals, and have all full-sized heads cut and spread out on a shelf in a cool dry shed, and those which are not yet fully grown should have a couple of leaves bent over them as a protection from frost. This will be a good time to sow Peas and Beans for the earliest crop; they ought to be sown in drills, about 3 inches deep, in a warm situation; but where there is accommodation for raising these in heat about the end of December the latter is certainly preferable. The following varieties of early Peas and Beans for this and later sowings may be depended upon:—Beans—Seville Longpod; Peas—Early Sunrise, Sutton's Emerald Gem, Ringleader, William I., and Webb's Wordsley Wonder—all excellent varieties. The last-named variety is a great cropper, and will make a good succession to the other varieties. Globe Artichokes should have any old stems and bad leaves that are still adhering to the plants cut away. Then give a good surface-dressing (about 3 inches thick, which can be dug into the ground next spring), and upon this put a good mulching of long litter, the latter to be wrapped closely round the crowns of the individual plants as a protection from frost. Manure should be wheeled on to vacant pieces of ground when the weather is dry and the ground firm, and when in this condition let digging or trenching be proceeded with. In damp weather the garden walks can be freed from weeds and fallen leaves, and be afterwards rolled. Manure heaps can be turned, Oak and Chestnut leaves raked together for hotbeds and for leaf-mould, Pea and Bean sticks can be got in and made ready for future use. As a rule there are plenty of jobs reserved for doing on wet days (and of which there is a good stock in hand at present), such as the making and tying up of labels in different sizes for pot plants, seed-beds, Roses, &c., and mat-tying, the making of crooks for pegging and layering plants, together with the preparing, sizing, and tying up in bundles of sticks for pot and border plants, also the breaking, sifting, and sizing of crocks, and looking over seed Potatos and other roots.

Forcing Department.—This is a good time to make a sowing for early work of Tomatos in 3-inch pots, putting two or three seeds in each pot, to be thinned out to one plant afterwards; place them on a shelf near the glass in a forcing-house, to prevent them from making a weakly growth. Attend also to the thinning and arranging of the shoots, &c., of established plants. Asparagus just coming through the soil should have sufficient air admitted to prevent the shoots from making a weak growth. Roots of Mint and Tarragon should now be put into heat, and as the French Beans attain to their proper size pick them and place them in a cool dry room, with their ends in water, until sufficient for a dish or an *entrée* have been gathered. Sow Mustard and Cress in boxes at short intervals, so as to keep up a constant supply. Look over Tomatos which have been gathered and placed on the staging in late vineries to ripen (where at the present time we have bushels), and pick out those that show signs of decay. *H. W. Ward, Longford Castle, Wilts.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov 17	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms Sale of Dutch Bulbs, at Stevens' Rooms
TUESDAY,	Nov. 18	Sale of the Fallowfield Collection of Orchids, at Protheroe & Morris' Rooms. Lincoln Chrysanthemum Show (two days). Clearance Sale at Bunyard's Nursery, by Protheroe & Morris. Sale of Bulbs, Roses, and Fruit Trees, at the City Auction Rooms, by Protheroe & Morris
WEDNESDAY,	Nov. 19	Sale of Hardy Plants and Bulbs, at Stevens' Rooms Sale of Stock at Poder's Nursery, Sutton, by Protheroe & Morris (two days).
THURSDAY,	Nov. 20	Sale of Flowering Orchids, at Stevens' Rooms. Sale of Bulbs, at Protheroe & Morris' Rooms Hull and East Riding Chrysanthemum Show (two days) Royal Horticultural Society of Ireland's Winter Show. Taunton Fruit and Chrysanthemum Show.
FRIDAY,	Nov 21	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 22	Sale of Balbs, at Protherod & Morris' Rooms Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

IN continuation of our remarks upon the rationale of PRUNING, it may be repeated that its successful management depends upon the nature and mode of growth of the plant, varying in each case, and upon the object proposed to be obtained. Suppose, for instance, timber to be the object in view, theory and practice alike concur that as a general rule, subject to exception in particular cases, no more pruning should be done than can reasonably be avoided. Cut away the diseased parts, and those which are disproportionate or misplaced, secure the proper balance of growth, and ensure its right direction, and leave the rest to Nature, remembering that if meddlesome pruning be bad, negligent pruning may be worse. When Nature prunes she does it, not by the removal of large limbs, but by the removal of a large number of small twigs, which die or lose vigour by being over-shaded, as in the case of so many Thuias, and even in Oaks and Poplars. The recommendation, then, to plant thick and to thin early is a sound one to follow as a general rule, unless in some easily understood and exceptional cases.

In pruning for fruit the case is quite different, and greatly depends on the nature of the tree, whether it produce fruit-spurs or not, whether it bear on the old or on the young wood. The main object is, first of all, to get a tree, to secure a framework and a sufficient supply of reserve matter in the bark or young wood to ensure the formation of fruit-spurs or to concentrate the reserve matter in particular parts of the tree where it is most likely to be useful.

The object here is first to secure a due amount of vegetative growth, and, this done, to direct the energies of the tree, as far as may be, to the production of fruit-spurs. To this end any excessive or unnecessary wood may safely be cut away, as well as any that may interfere with the form wished to be given to the tree to adapt it to its growth as a pyramid or against a wall. The numerous methods of effecting this are known and generally practised. The result of these procedures is seen in the uniform proportion and balance of the vegetative and of the reproductive organs, which skilful pruners, especially those of the old school, were so successful in obtaining.

In the case of pruning for flowers—as, for instance, in Roses—the object is to secure perfection in the flower. Here perhaps more than in any other case the horror of the theorist is excited; here perhaps the procedures of the pruner are most radical. Here, therefore, is it more particularly desirable to remember that the object is not timber—not even fruit or seed—but simply brilliant flower. There is comparatively less necessity for the accumulation of reserve stores, as the flowers form rapidly on the wood of the year, quickly assimilate the food they obtain, and utilise it at once. The cutting away of the old reserve organs is, therefore, of the less consequence, and, moreover, even where the hardest pruning is practised there is the reserve in the stock still available, and the roots are ready to come to the aid of the newly formed leaves at once. Then again hard pruning for Roses finds a justification in the fact that the Rose is "spring tender," starts early into growth, and thus is liable to have its shoots killed by frost. The delay occasioned by hard pruning obviates this loss. Nevertheless, Roses do die, and no doubt they would not die so soon were the extension system more generally practised, but the results to the Rose lover would assuredly not be so satisfactory. In the case of the Vine the general principles are the same as in the Rose, but the Vine is less often grafted, and contains in the old rods a large relative amount of reserve nutriment. Here again the gardener has to consider whether it will pay him best to have a perpetuity of small bunches or a number of larger ones of better quality for a shorter period—whether the extension system will suit his requirements better than the rod and spur system usually adopted. No doubt if the production of matured seed and robust seedlings were the object the extension system would practically and theoretically, be the best in the long run, but for general purposes we require the fruit and not the seed—the requirements, as was stated in a previous article, being different in the two cases, at least in degree.

The same general principles apply in the case of root pruning, a procedure utterly at variance with the benefit of the individual plant; but which, when judiciously managed, is of great benefit to the cultivator, and of no appreciable harm (under the circumstances) to the plant.

With pruning is necessarily associated training, the objects of which are identical, and which ensures an equal amount of leaf action by a smaller number of leaves because each leaf and each bud is, by skilful pruning and training, so placed as to get the most advantage from the light and heat. Each leaf here is placed under the most favourable circumstances possible, and has not to fear the injurious competition of its fellows. In fact, each leaf is in a degree placed under the same favourable conditions that a plant in a pot in a greenhouse is, as compared with one planted out, and having to take its chance among a host of competitors. In spite, therefore, of the now wholly untenable explanations afforded by the gardener and forester, and to which we alluded in a previous article, their practice is abundantly justified both by results and by modern theory when the objects of the operation are duly considered, and the mode of growth and habit of life of the plants duly weighed.

—— THE ROYAL SOCIETY.—We learn that the Gold Medal of this society has been awarded this year to Professor OLIVER. Those who know his single-minded devotion to his duties and to the promotion of botany, will know how well this compliment has been earned.

—— SALVIA BETHELLI.—Mr. A. OUTRAM writes us that we have made a mistake in our last week's issue as regards the above plant. He says that he noticed it growing in Mr. WAKEFIELD'S garden at Sedgwick, and asked Mr. BETHELL, the gardener, where he obtained it, and was told that he had raised it from seed. Our correspondent fails to give more precise details as to the parentage of the plant, or from where obtained, if not raised by hybridisation at Sedgwick.

—— LINNEAN SOCIETY OF LONDON.—Meeting, Thursday, November 20, at 8 P.M. Papers to be read:—1. "Remarks on Cinchona Ledgeriana as a Species;" by E. M. HOLMES. 2. "Notes on the Habits of Australian Hymenoptera;" by H. L. ROTT. 3. "Botanical Notes from Darjeeling to Tonglo and Sumdukphor;" by C. B. CLARKE.—On Thursday, the 6th inst., the first meeting of the present session was held. Sir JOHN LUBBOCK, the President, alluded in appropriate terms to the loss the Society had experienced in the death of Mr. BENTHAM. In reference to the legacy left by that gentleman to the Society, the President stated that Mr. BENTHAM had some years ago announced to him his intention, and while making no conditions whatever, and desiring to leave the Council free to apply the money as they thought best for the interests of the Society, he nevertheless suggested that the money might be applied to the improvement of the library.

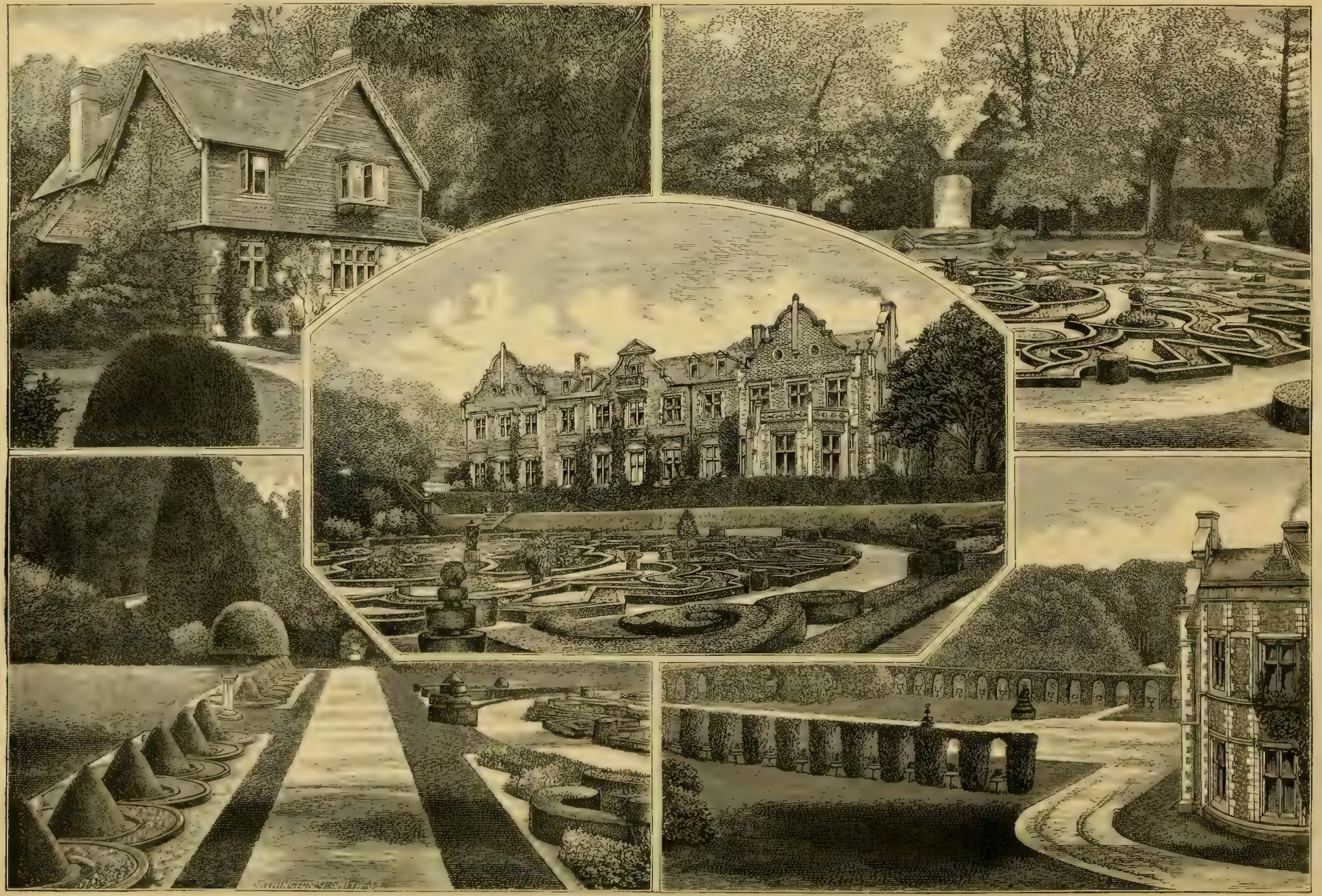
—— TREATY WITH SPAIN.—In consequence of the certainty that a commercial treaty will early be concluded between Great Britain and Spain a first-class weekly business newspaper has been started under the title of *La Gaceta Espanola*. It is devoted to the interest of manufacturers and traders anxious to avail themselves of the opportunity for opening up a trade with Spain and Spanish America.

—— PANDANUS ODORATISSIMUS.—A female plant of this bold and strong growing species flowered some months ago in the Palm-house at Kew, and the green Pine-apple-like fruit may still be seen hanging; it is of considerable size, although unfertilised. A smaller specimen of a male plant has been flowering abundantly there for some time, and the inflorescence is totally different in character from that of the former. The stamens are borne in small stalked whorls, forming dense spikes that are lateral to the spadix or main axis of the inflorescence. These spikes are protected by large straw-coloured spathes that render the flowering of this plant more conspicuous than the seed-bearing one. The male flowers, also, are possessed of the delicious fragrance implied in the specific name. This odour is the more powerful when the atmosphere is laden with moisture and raised in temperature by sun-heat. The species is figured in Roxburgh's *Plants of the Coast of Coromandel*, i., t. 94—6.

—— GUMMING ROSES.—According to the Hon. Secretary of the Leek Rose Society several Rose blooms in the winning stand of twenty-four at a recent exhibition were proved to have been gummed. Disqualification followed, when, as it is alleged, the opinion of the National Rose Society was asked on the point, with the result that in the judgment of the committee the "exhibitor was not disqualified." As no explanation had been given of this seemingly extraordinary verdict the views of several leading rosarians were obtained, all of whom stated in reply that the practice of gumming is inadmissible. We know nothing of the circumstances of the case beyond what has been made public, but we share in the astonishment that such an opinion should have been given by the committee of the National Rose Society. It is to us utterly unintelligible, unless there be some point in the case not hitherto made public. It may be said that "dressing" is allowed in the case of other florists' flowers, and whatever may be said about the propriety of this practice it is, at least, carried on openly, and neither the judges nor the florist-amateurs are deceived. For market purposes, or for bouquet work, Roses or other flowers may legitimately be gummed, but we protest emphatically against any such practice in any cases where the object of the exhibition is to show the natural perfection of the flower, or the skill of the cultivator. If dressing and gumming are to be allowed at all at flower shows it should only be on condition that the fact is stated publicly, so that not even the veriest novice need be deceived.

—— DOUBLE FLOWERS OF LAPAGERIA ROSEA.—We have received from Mr. GREENFIELD, Priory Gardens, Warwick, a double flower of this Lapageria which he states has been produced on a plant of the single variety. It is a medium proportioned flower of good substance, having the normal outer petals, but the inside of the flower or the double parts are composed of three smaller petals having a corymbiferous growth at the apex of each of them which quite fills up the centre of the flower. This malformation, if it should prove constant, will be sought after by those who are fond of any departure from the usual types of flowers.

—— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held, by kind permission of the Council of the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 19th inst., a 7 P.M., the following papers will be read:—"A New Method of Reading the Direction of the Wind on Exposed Heights and from a Distance;" by HUGO LEUPOLD,



F.R.Met.Soc. "Description of a Component Anemograph;" by ALFRED N. PEARSON, F.R.Met.Soc. "On the Injury by Lightning (April 28, 1884) to the Monument to the first Duke of Sutherland, at Lilleshall, Shropshire;" by C. C. WALKER. "On the Mechanical Characteristics of Lightning Strokes;" by Colonel the Hon. ARTHUR PARNELL.

—— CHRYSANTHEMUMS AT MR. W. HOLMES', FRAMPTON PARK NURSERY. — Although Mr. HOLMES does not make a specialty of Chrysanthemems, he has some exceedingly well grown specimuns, which, if not numerous, are very choice; only the very best sorts being grown, and as a sample of what can be done with these plants in a very confined space, surrounded with high buildings, will compare favourably with any. As most of the varieties have been in bloom for some weeks, they are beginning to lose their freshness; but there are still some grand blooms of the following:—Golden Dr. Brock, fine canary-yellow, incurved; Mrs. Crossfield, a fine flush pink sport from White Globe; Duchess of Manchester, scarce, a most promising variety, violet, with white centre; also John Salter, very fine; General Slade, Lord Wolseley, and many other well known varieties.

—— BLIGHT ON THE GREEN CROPS.—Any one walking through the London market gardens at the present time will not fail to notice how much the large breadths of Coleworts, so much grown for market purposes, are affected by blight. They are what the market gardeners term "lousy," and on inspecting the hearts of the plants they are seen to be covered with blight, and the fear is that many of the plants will go blind in consequence or be spoiled for market purposes. Sharp frost is considered by the market gardeners the best remedy, though a drenching rain would no doubt do something towards cleansing the plants. In many cases the Brussels Sprouts are affected in the same way, but the late crops suffer most, the early well established plants appear to be clean and healthy.

—— PLAIN SPEAKING.—At a ruri-deconal conference of some of the clergy of Buckinghamshire, recently held at Slough, a paper was read by the Rev. P. W. PHIPPS, the Vicar of Upton-cum-Chalvey, on "The Recreation of the People." The speaker dwelt on the importance of providing recreation and allotment grounds in urban and rural districts. In some parishes landowners allowed their land to be used for these purposes." But in how many parishes are the poor deprived of these, and find themselves and their families restricted to the roads for life. It is very sad to think of the terrible injury inflicted on the country under the name of increasing commercial prosperity, by the sale and alienation of village greens, ranges, and waste lands. It is true that rights were nominally respected, for every family had a piece of ground assigned to it in place of their rights; but in the course of a few years generally that land was sold for a few pounds, and the family was none the richer, while the neighbouring landowners obtained the ground." So difficult is it found to acquire land for recreation ground, that the speaker recommended an Act of Parliament giving compulsory powers to local boards and urban authorities for the acquisition of lands for public parks and recreation grounds, exactly as they are given to railway companies. Other clergymen bore testimony to the difficulty they experienced in their parishes in getting ground from the landowners for the purposes of cricket.

—— COLA NUT.—At the last meeting of the Linnean Society Mr. T. CHRISTY showed some seedling Colas, in which the thick fleshy cotyledons had not been buried, and which, in consequence, had assumed a green colour. More curious still, the plumule, instead of producing a leafy shoot, was developed into a small many-flowered inflorescence about 1¼ inch high.

—— CHRYSANTHEMUMS AT MESSRS. S. DIXON & Co.'s, HACKNEY.—There is an exceedingly fine display of these flowers to be seen here. About 2000 plants, in 400 varieties, are arranged in a suitable house, 120 feet by 25 feet, having a serpentine walk running from end to end, which allows of the plants being arranged in groups, short or tall, as the case may be, producing both a novel and pleasing effect. All are well grown and include the pick of the different sections, no poor varieties being kept; if anything, Anemone-flowered varieties are the finest, although some fine blooms of other kinds are to be seen. There were some especially fine flowers of Lady Margaret, a pure white Anemone; also Duchess of Edinburgh, a white Japanese Anemone, with a lilac centre; and Queen Margaret, a rosy-lilac flower of the same class. A sport from Source Japonaise also deserves mention, as in the parent plant the flowers are large incurved, but are a very dark violet, with the petals thickly covered with tiny spikelets, causing the bloom to have a very distinct appearance. There were some fine blooms of the fine, large, dark violet Japanese J. Delaux, also Bronze Dragon, Source d'Or, Lord Beaconsfield, and many others.

—— TROPICAL AFRICAN MOUNTAIN FLORA.—A very interesting collection of plants has been brought to Kew by that intrepid African explorer, Mr. JOSEPH THOMSON, made during his late journey into the Masai country. They have been examined by Professor OLIVER, and consist of about thirty-five species from Kilimanjara at 9000 to 10,000 feet of elevation; a few from a crater near Lake Nairasha at 7000 to 8000 feet elevation; thirty-four from the Kapté plateau at 5000 to 6000 feet; and fifty-eight from Lykipia, at 6000 to 8000 feet. These collections exhibit the mingling of north temperate types with others characteristic of southern Africa, for which previous discoveries had prepared us. Of these the most interesting are, as new to tropical Africa, an Anemone, a Delphinium (very different from the Abyssinian Delphinium dasycaulon), and a Cerastium of remarkable habit. Of Sonth African forms the most striking is the handsome arborescent Rutaceous plant, Calodendron capense, the "curled Chestnut" of Natal, to the north of which it had not previously been found. Of northern forms is a Juniper, another genus unknown to tropical Africa [except in Abyssinia], and which was found forming groves at an elevation of 6000 to 8000 feet, and itself attaining a height of 100 feet! It is the J. procera of Abyssinia. A Podocarpus, gathered along with the Juniper, and also attaining 100 feet in height, is probably the P. elongata of Abyssinia, which, or a near ally, also occurs in South Africa. The only other Conifer previously found in the equatorial regions of Africa is the Podocarpus Mannii from the peak of St. Thomas in the Gulf of Guinea. *J. D. Hooker in "Nature," Oct.* 30.

—— THE RAINFALL AND THE LAND.—The unusually light rainfall of the last twelve months throughout England has had the natural effect of reducing the land to such a dry state as rarely occurs. But, dry as the summer has been, taking the country collectively, as usual, the rainfall has been far from uniform. From time to time we read of several wet days in succession in the northern counties, but nothing beyond light passing showers, barely sufficient to lay the dust, comes about London or south thereof. Only last week in some parts of Yorkshire as much as 4 inches of rain was registered, whilst about the metropolis the dust was blowing in clouds a few hours after the little rain we had fell. The outcome of this is that now, the middle of November, the land is drier probably than ever it has been known at this season within the memory of any one living. In confirmation of this we may say that in several gardens in the western suburbs large Hollies, twenty or thirty years planted in shrubberies accessible to the roots of old deciduous trees, might be seen with their leaves flagging and in a half shrivelled condition, just as if the heads were severed from the roots; whilst Aucubas, Laurels, and Rhododendrons, under like conditions of the roots, were equally as bad. It is no unusual occurrence to see the last of the above evergreens droop in a dry time during summer for want of moisture, but with so little solar heat as the advanced season now affords the condition of the evergreens named is unprecedented. To predict about the weather for any length of time beforehand is a speculative proceeding, still one thing is certain, that it will require an unusually wet winter to bring the land about London to its ordinary moist state 3 or 4 feet below the surface.

—— NYMPHÆAS AT KEW.—There has been a long and beautiful display of Water Lilies this year in the house devoted to the cultivation of a collection of these plants at Kew. An alteration in the heating arrangements for the water-tank was effected at the beginning of the year, the necessity for which is shown by the results. Ever since the end of April last, when the delicate coloured N. odorata rosea expanded its first flower, this house has been a great attraction to visitors to these gardens. In July and August it was not unusual to find over a hundred blooms expanded at one time. Unfortunately this splendid display was enjoyed only by the very few visitors who had access to the houses before noon, as it was between the hours of ten and eleven in the morning that the Nymphæas were to be seen in greatest perfection. Even in the afternoon there was and still is a good number of flowers open, for although all the white and red varieties of the very variable N. Lotus had folded up their beautiful petals by noon, the blue and variegated flowers borne by the different forms of N. stellata, N. gigantea, and the yellow flowered N. flava were numerous and varied enough to make a good display. On Monday afternoon (Nov. 10) last we counted thirty-three Nymphæa flowers all open together. It is singular that the regularity with which the different species of these plants close and open their flowers during the summer months, when they are full of vigour, does not hold at the present time, for we noticed that most of the species and varieties which in summer fold their flowers before noon, remain open long into the afternoon at the present time. No doubt the absence of bright sunlight and other causes affect this character as well as the health of the whole plant. Should the weather be bright and clear there is every prospect of these plants continuing in flower up to Christmas.

—— GROS MAROC GRAPE.—Mr. GILBERT, of Burghley, forwarded to our office a bunch of this Grape, which he stated had hung on the Vine till thoroughly ripe. We found the flavour of the big, beautifully coloured berries much superior to Gros Colmar, and with a skin far less tough than that and other late keepers. It was a handsome, well-formed bunch, of a sort that ought, when better known, to find many admirers.

—— THE WEATHER.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Nov. 10, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been cloudy or dull in all parts of the kingdom, some large amounts of rain have fallen over Ireland and Scotland, but in England, though rain occurred on several days, the falls have been much less heavy. The temperature has been above the mean in all the districts, the excess ranging from 1° in "Ireland, S." and 2° in "Scotland, N.," to 5° in "Scotland, W." and to 6° in "England, S." The maxima, which were recorded on different days in the various districts, ranged from 61 in "England, S." and 60° in "England, E." and the "Channel Islands" to 55° in "Ireland, N." and 54° in Scotland, N." The minima were generally registered either on the 4th, 8th, or 10th, and varied from 26° in "Ireland, S." and 29° over eastern, central, and southern England to 38° in "Scotland, W." and 45° in the "Channel Islands." The rainfall has been considerably more than the mean over Ireland and Scotland, and slightly so in the "Midland Counties," but rather less elsewhere. Bright sunshine has been less prevalent than it was last week in most districts, the percentages of the possible duration varying from 10 in "England, N.E.," and 11 in "England, S.W., to 29 in "Scotland, E.," and 31 in "England, E.," and to 43 in the "Channel Islands." Depressions observed:—During the whole of this period pressure was highest in the southern parts of our area, while depressions travelled north-north-easterly over, or to the westward of, our extreme western and northern coasts, and one or two subsidiary disturbances in an easterly or north-easterly direction over our southern counties. The winds were consequently between south and west very generally, and, though moderate or fresh on most days, they reached the force of a gale from south or south-west on our western and northern coasts on the 4th and 5th, and again from the same direction on the 8th. At the end of the week the high-pressure area was moving north-easterly towards Denmark, and the wind over the greater part of England had become light and variable.

—— GARDENING APPOINTMENTS. — WILLIAM HOLDER, late Foreman, Patshull Gardens, as Head Gardener to the Hon. S. H. JOLLIFFE, Appleby Hall, Atherstone.—Mr. C. DEAVIN, late Head Gardener to Colonel the Hon. C. R. HAY, Harewood Lodge, Sunninghill, has been appointed Head Gardener to ROWLAND WINN, Esq., M.P., Nostell Priory, Wakefield.

Home Correspondence.

Lasiandra macrantha.—In the gardens of Donald Mc Gregor, Esq., of Craigroyston, Merchiston, near Edinburgh, there is at present a plant of Lasiandra macrantha floribunda upwards of 7 feet in height and 5 feet through at the base, bearing nearly a thousand blooms in various stages of expansion. The sight presented by this magnificent pyramid of that lovely shade of blue peculiar to this flower can be better imagined than described. This plant was struck from a cutting three years ago, and is at present growing in a tub in the orchard-house, in the rudest and most vigorous health. The cultivation of this splendid specimen reflects the highest credit upon the skill of Mr. Dykes, the gardener here, who has had instructions from his employer to show any one interested in these matters the plant referred to, besides which many specimens of other choice plants may be seen. Surely this variety of Lasiandra is not so much grown nor so well known as it ought to be. *J. Downie.*

The Potato Disease.—I must ask leave to set myself right with Mr. Plowright by saying, that in referring to the Jensenian theory (?) I did not thereby mean to suggest that Mr. Jensen was the actual discoverer of the external operation of the Peronospora spores on Potato tubers (I have been of that opinion for several years), but rather desired to convey that, in being the first to discover, or rather to employ the soil as a protective body to the tubers, he was entitled to the credit of reducing floating knowledge to actual practice. I shall be very interested to learn what Mr. Plowright has to say about the introduction of disease spots inside the tubers, without any external evidence being found that such affection of the flesh existed. There is no more difficult point to clear up in relation to the Potato disease than this, if we except the one other curious point, that of some score or more sorts growing side by side, and all very like throughout, except perhaps in some shape or form of leafage, yet that two kinds out of the lot are diseased, perhaps badly, whilst all the rest are sound. Amongst kinds which show the internal spot very largely and commonly is Prizetaker, one of our best cooking Potatos, dry, floury, and well flavoured. This, when cut through, often shows the flesh of the tubers speckled throughout, and generally, as far as the naked eye can determine, disconnectedly. How is that appearance produced, and why is that kind subject to it? How much does the speck so commonly seen in Ribston, Blenheim, and Cox's Orange Pippins, and some other Apples, accord with this apparent disease in Potatos? What is the cause of this speck in the Apple, and has it any affinity to the same appearance in the Potato? *A. D.*

Edged Auriculas—"White Rival."—Mr. Douglas' interesting note in a recent issue of the *Gardeners' Chronicle* reminds me of a curious circumstance preceding the publication of Mr. D.'s note. When re-potting about a month since, the pot rolled off the stand accidentally, and smashed the stem right across at the junction with the soil. My collection was too small to throw away even this if it could be retained, so I plunged the old stump up to the leaves in moist soil; made it firm, and shaded. Though that old stem had seen several summers, it threw out new roots, and so far—it is now after being re-potted—seems likely to see several more summers come and go. This is a system of propagation, and I might add reproduction, I have not hitherto seen referred to, and may be worth noting. *W. J. Murphy.*

The Gardeners' Royal Benevolent Institution.—I have read with much interest what has lately appeared in your columns on this subject, and I most sincerely congratulate Mr. Coleman upon his very successful efforts in this cause. His lines, however, I may be allowed to say, appear to have been cast in more pleasant places than has fallen to my lot. I have subscribed to the Institution for seventeen years, and during all that time I have endeavoured by every means in my power to induce others to do so, but I regret to say with but little success. It is said there are something like 20,000 gardeners in England, and if so, sixpence from each of them would more than raise the required sum, a sum required by the promoters to enable them to increase the amount of annuity paid to as large a number as possible of their aged and indigent brethren. There are possibly few bodies of men who appear to regard each other with more kindly feeling than gardeners do. They speak of each other as brother gardeners, brothers of the spade, &c., but at the same time they show but scant alacrity in rendering pecuniary assistance to their needy and aged brethren. I know all about the straitened circumstances of too many gardeners, and I very much regret the circumstance. I know that even a guinea per annum is to many of them a serious matter. But where there is a will there is generally a way to be found, and at the present time an effort should certainly be made to accomplish this desirable object. Anything like apathy on the part of gardeners will not be creditable to them, and may tend to intensify the feeling which to some extent already exists and others, besides your correspondent alluded to at p. 528, may feel constrained to say that they do not longer care to help those who can, but will not, help themselves. I will, however, double my subscription for the current year, and will ask you to kindly hand the enclosed cheque for the amount, along with, I hope, many such, to Mr. Cutler, the worthy and indefatigable secretary of the Institution. *P. G.*

—— Permit me as a subscriber to the above Institution, and also as a somewhat humble but earnest member of the gardening fraternity, to re-echo Mr. Coleman's remarks at p. 597, as to the disgrace that should and will rest on gardeners generally if they do not one and all make a strong pull together to get the necessary sum so as to enable the committee to raise the pension to £20 as wished. By all means let us have as many Mr. Colemans as possible, still do not let his great success prevent others who may not be so energetic, or perhaps occupy such a favourable position, from adding their mite. Most gardeners who have been for any length of time in their situations will have neighbours who are more or less indebted to them for, say, a few bedding plants, &c., and who would doubtless give if requested. I mention this because I have myself found it so. If 600 gardeners could get, say, £1 each, the thing would be done irrespective of those who might get larger sums. Local tradesmen, too, whom gardeners have business transactions with, would doubtless help. I dare say there are many who from various causes do not care to address their employers on the subject, but who could help in the way I have mentioned. I have hopes the sum will be raised, but the sooner it is done the better. *H. J. Clayton, Grimston.*

—— Mr. Westcott's idea at p. 597, of instructing his foreman in the particulars of the Gardeners' Benevolent Augmentation Fund, is a good one, and ought to be imitated largely. I should not have entered into the matter only to show what can be done when a person has his heart in a good cause. To my kitchen garden foreman, known in these gardens for thirty-five years as "Thomas Gale," a few years since I explained the good of the Society; he at once sent ten guineas, and became a life member. Mr. Cutler sent him a collecting-card at the first issue of the Augmentation cards. He sent in his last July card a few weeks since with the good sum of £3; his two previous cards were hard on to £6. His heart is always big for helping widows, so Thomas heads the card with half-a-guinea as a feeler. His way of proceeding is very simple, and generally successful. Any visitor entering his domains is eagerly watched, and if thought likely, Thomas respectfully places the card into his hands, and requests the visitor to look it over; all the while Thomas is pleading for the gardener's widow, forgetting how many aged and lame gardeners are ending their days with the small comfort the Society is able to afford them. Mr. Cutler sent him another card a few days since, and as Thomas thinks it is a duty for him to collect, he is again busy among the charitable, pleading for the widows, and for whom he always votes. I understand Mr. Cutler wrote him a complimentary letter, and wished there were many more like him. Mr. Coleman's letter wants printing in letters of gold, as the sum to be collected is needful and urgent. In addition to my yearly subscription, I gave a guinea to the Augmentation Fund this year, and I ask others to give more if they can. *William Culverwell, Thorpe Perrow.*

The Lilac.—It is years and years ago—how long I can scarcely tell, but it is far away in the dim distance of bygone times—that I saw a Lilac, one simple bush planted in a sheltered sunny spot on a lawn—a bright, green, close-shaven, well-kept lawn. The hand of man had been busy with regard to the lawn, and there it was, level, green, and a quiet rest for tired eyes to look on. Not so the Lilac. The hand of man had done nothing for it but to plant it where it stood, backed up at a short distance with dark evergreens. Yes, it was left to itself to grow as it would, and it had developed into one of the most beautiful plant sights I ever saw. The lower branches laid on the ground, and from them it rose to the shape of a rather flattened cone, which was clothed to the very ground with a rich array of blossom. I shall never forget the beauty nor the joy I felt when I looked at that Lilac; and then and there I said to myself, "If ever I have a large garden I should like an avenue of Lilacs, with a grass border on each side, a gravel path down the centre, and a seat at each end, that I might sit and admire when in bloom. I have had the large garden but not "the avenue;" but I have had more than fifty varieties of this beautiful shrub—whites, reds, tricolors, bluish, blush-purples, doubles, with habits coarse and habits fine, and I have wondered, and I still wonder, how or why it is one so seldom sees these lovely garden ornaments in variety where we look for taste and the culture of pictorial effect. As "now is the time for transplanting" trees and shrubs I venture to call the attention of my fellow gardeners to this neglected, beautiful, and highly decorative shrub. Take, for instance, Alba grandiflora, with its grand spikes of bloom and its lofty growth (as a shrub); put by the side of it Charles X, with its gorgeous purple, then make a triangle with Gloire de Moulines, hedge them in with the Persian and the lesser French white. What a group of beauty! But there are plenty of others to deal with—reds, peach colour, and lilacs—proper to strew about among other flowering denizens of the garden. Try the Lilacs (of colours), and you will find them "a thing of beauty and a joy for ever." *Harrison Weir.*

Hedychium Gardnerianum.—Seeing the two articles which appeared in the *Gardeners' Chronicle* of October 18 and 25, on the growth and treatment of the Hedychium Gardnerianum it will probably be interesting to hear of its growth planted out-of-doors in Cornwall. At present there is a plant of the above which was planted several years since by the side of a wall at the east end of a vinery; this season it has made sixteen young growths, some of which are above 5 feet high and 6 inches in circumference: each shoot has produced a long raceme of bloom, some being 16 inches in length. I never saw it growing in the houses at Kew or elsewhere so luxuriantly as it has grown here this season out-of-doors: it is growing in a gravelly loamy soil, no preparation having been made for it. It has not had any water given it during the season, and this has been the driest summer known in Cornwall for a number of years. *W. Bennett, Menatilly, Cornwall.*

Storing Gladioli Corms.—I should have possibly forgotten my promise—having so frequently in your columns referred to my favourite flower—only for the friendly reminder of "W. McL, Glasgow," last issue, to offer some remarks on this subject. I may premise that my observations now solely refer to the hybrids of G. gandavensis, as almost all the early flowering varieties, such as G. cernuus, G. Colvillei, G. ramosus, G. brenchleyensis, G. byzantinus, &c., when planted out, take care of themselves for some years, with the single exception of G. Colvillei The Bride—a pure white-green. Isolated clumps have existed in our mild climate here for years outdoors, but I think it far too good and useful to be left unprotected in a severe season in Scotland in the beds, except the small corms that I would not expect to flower. These are already over the ground with me, and must have some short stable litter as protection, which, by the way, would vastly benefit and increase the size of the blooms in the varieties abovenamed. This last remark is *àpropos* at the present time. Usually I lift the corms before this time; but they seem so green and healthy, and are so evidently benefited by the present mild moist weather—as I write the shade thermometer stands at 60° Fahr.—that I see no occasion to do so just yet. Storing Gladioli I look on as a perfecting of the maturation. Admitting this, and regarding it as the key to the matter, methods of doing so are of secondary consideration. Whatever method is adopted when the corms are lifted, with the attached stem partially green, on no account should the stem be broken off and the still imperfectly ripened corm stowed away in a paper bag. Shrivelling, mildew, and ultimately rottenness would be the result; and it would be all the more likely if the corms were some of the finer hybrids of Souchet, Kelway, or Campbell (Gourock). Except the corms are thoroughly dried out and ripened I object to putting them in paper bags. My favourite plan is to lift the whole root, without shaking off the "spawn;" put them standing upright against the wall of an inner room, where the atmosphere is tolerably dry; surround them there (I mean the corms) with any sort of moist sand, and let them slowly dry. When dry the stem comes away easily, and the corms are quite firm. Owing to having a lot of other business on hand I seldom get time to do more than examine mine casually, until I am preparing to re-label them—about the end of February. It only remains to add that I tie the label to the stem, and seldom find any mistake through varieties getting mixed. Owing to the splendid weather we had during the past summer for maturation of the foliage, which I consider of first importance, I would expect Gladioli corms to be the finest we have had for many years. *W. J. Murphy, Clonmel.*

The Mild Season and Chrysanthemums in the Open Air.—It is now November 12, and so far, practically, without any frost. I only lifted my tuberous Begonias yesterday, while Dahlias are still growing, without a damaged leaf, and they are susceptible to even 1° below 32° F.; yet flowers for cutting are becoming scarce. From this point of view I often wonder why every gardener, amateur and even cottager, does not clothe his walls and sunny open spaces with Chrysanthemums. From this forward, and including the early varieties, during

the past six weeks, they give, or gave, a large amount of blooms for cutting. No matter how large the collection inside is, people are shy of cutting them, while outdoors they grow in profusion; and if thinned, and fed occasionally with liquid manure, blooms often fit for exhibition can be secured. I can cut bouquets in numbers from about one hundred varieties without stint. All except large Anemones do well. *W. J. Murphy, Clonmel.*

—— Ten days ago I gathered a small basket of ripe Strawberries, and again to-day (November 10) there is a quantity ripe, and this from plants which bore a heavy crop of fruit in the summer. The variety is Vicomtesse Héricart de Thury. *R. Greenfield, Warwick.*

Iris hexagona.—I am sorry to say a slight error (not of a botanical kind) has crept into the description of Iris hexagona. I receive the credit of having flowered the bloom figured in the *Bot. Mag.*, whereas it should be given to Mr. Lynch; see his note in the *Gardeners' Chronicle* of this year. I showed the bloom for Mr. Lynch at the Scientific Committee of the Royal Horticultural Society, and afterwards sent it to Kew together with some flowers of my own, and thus the mistake arose. Apart from simple justice, I should be the last person to deprive Mr. Lynch of his deserts, for I, perhaps, know more fully than most people how much his skill and energy have done for our Botanic Garden at Cambridge. I. hexagona is undoubtedly a very handsome Iris; but it cannot be regarded as an ordinary garden plant, for, growing as it does straight on into winter, it is apt—in most places at least—to be cut by winter frosts and damaged. It does not do at all in a pot, and so far I have failed to flower it by growing it in a frame. The surest way of flowering it is to do what Mr. Lynch did, and plant it out in a greenhouse. Besides which it will I think be necessary to divide it frequently, performing the operation just after flowering time. Each bud of the rhizome grows away from its base at a tremendous rate, so that in a very short time a regular latticework is formed with growing buds at the margin only; it is these buds at the margin which flower, and which do not get adequate nourishment if the plant is left to itself. I. cuprea or fulva, which in many respects is closely allied to I. hexagona, needs the same treatment. This was very well shown by an experiment made by Mr. Barr during the past year. He divided a dense stool of I. cuprea, which had obstinately refused to flower—and many of the pieces separated flowered in the following summer. Most Irises, as far as my experience goes, flower best when let alone; but these two Irises at least are exceptions to the rule. *M. Foster, Shelford, Cambs.*

Impatiens Jerdoniæ.—A beautiful figure of this compact little Balsam is given in the *Botanical Magazine*, t. 4739. It is at once curious and highly ornamental, with an outward form so totally different from those in general cultivation, that it might well constitute a natural section of the genus. This difference, moreover, is one merely of development and not of structure. The petals are yellow, while the sepals are partly so and partly green. The curiously curved spur is bright red, or more properly crimson, and by its abnormal enlargement has nearly absorbed all the rest of the flower, which is thus held in subordination both as to size and decorative effect. Another feature of importance is that the fleshy stems can be conveyed to a distance after the manner of a tuber or a bulb. It is a native of the Neilgherries, and a flowering plant may be seen in the Begonia-house at Kew. *J. F.*

Late Peas.—As evidence of the unusually fine autumn, or the usefulness of Bruce Findlay Pea, kindly sent for trial by Messrs. Kelway, of Langport, or it may be due to each that I have been enabled to gather green Peas of excellent quality every day up to this date (November 3). The plants are free from mildew, they are growing vigorously, and flowering freely, and appear capable of yielding a good supply for some time yet, unless killed by frost. *T. Challis.*

Violets.—As your correspondent "J. S." in a recent number states, "the Czar Violet promises to be plentiful when the right season comes." Ours are in the same condition—I have, in fact, gathered a fine lot of flowers from them already; however, I look forward for their good time to come further on in the season. Marie Louise Violet has been abundant for some time past, for it is so easily managed and brought into bloom early. I tried a few plants in 5-inch pots last season, and well they did, and when full of bloom they were very acceptable for filling the drawing-room vases. *Thos. Garnett, Cavendish Gardens, S.W.*

Cassia corymbosa.—The deep yellow masses of flowers produced by this species are very conspicuous at some little distance, when they appear like yellow Jasmine greatly magnified. It is so nearly hardy that when planted out in a sheltered position, or preferably against a wall, it continues in a healthy floriferous condition till quite late in the autumn. A large specimen against a wall in the herbaceous ground, Kew, has few competitors at this season to engage the attention of cultivators. It is sometimes erroneously grown under the name of C. sophera, but the former has three pairs of oblong lanceolate, slightly sickle-shaped leaflets, with an oblong gland between the lower pair, while the latter has six or eight pairs of narrower leaves with a cluster of glands between each pair of leaflets. The plant is figured in the *Botanical Magazine*, t. 633. *W. C. J. F.*

The Tomato Disease. — In the *Gardeners' Chronicle*, p. 498, Mr. Berkeley was kind enough to suggest that I could throw some light upon the manner in which Tomatos became affected with the Phytophthora. Although I had no doubt in my own mind that this was in the same way as De Bary has shown the tubers of the Potato become diseased, namely, by the germ tubers of the Phytophthora spores piercing the epidermis, still I thought it best to be in a position positively to assert this from actual experiment. I therefore obtained, as soon as I conveniently could do so, six healthy green Tomatos. Three of these had on October 21 spores of Phytophthora, suspended in water, applied to their exterior, while the other three were kept as control fruit. The infected Tomatos were placed in a damp atmosphere, in order that the zoospores might have a chance of penetrating the epidermis before they died from desiccation, as otherwise soon happens when they are exposed to a moderately dry atmosphere. On October 27, six days afterwards, the infected Tomatos began to show signs of disease; the well-known black-brown patches could not be mistaken for anything else. The smallest of the three infected fruits was the most severely attacked, but the other two succumbed afterwards. When the stem and calyx is first attacked the disease rapidly reaches the interior of the fruit. I find Phytophthora commonly upon the foliage of outdoor Tomatos, and I have once seen it under glass. Its effect upon the Tomato plant is, however, very different from what one is accustomed to meet with on the Potato. On the latter the foliage turns black and emits a peculiar putrefactive odour, but upon the former it spreads much more slowly, does not cause putrefaction, evolves no odour, but causes the affected spot to shrivel and dry up, as if it had been scorched by the sun. *Charles B. Plowright.*

—— I hope my friend Mr. Plowright will act upon the suggestion made by the Rev. M. J. Berkeley on p. 498, and throw some light upon the mode of attack of the Potato fungus on the Tomato. Most observers will be inclined to agree with Mr. Berkeley that the fungus does not attack the foliage, but the fruit. Professor Dyer, of Kew, however, has a different opinion, for when he was examined at the House of Commons on the Potato fungus he said, "I have seen myself, on the last serious outbreak of the disease, the Tomato plant attacked by the Potato disease from Potatos growing in a garden." The Professor was then asked by Mr. Earp if the disease had reached the fruit. Professor Dyer answered, "That I am not quite so sure about, but it killed the Tomatos, so that I think the fruit did not come into question." It will be seen that the experiences do not agree. Perhaps I may be allowed to say (quoting from my Peronospora index) that Mr. Plowright has already published a valuable illustrated article on the "Fungoid Diseases of the Tomato" in the *Gardeners' Chronicle* for November 12, 1881. Six species of Tomato fungi are described and illustrated—all new species. It is remarkable that Mr. Plowright has not included Peronospora infestans in that paper. *W. G. Smith.*

Christmas Roses.—These are now coming into bloom—a time when other outdoor flowers are scant indeed—and deserve to be much more extensively grown than they are at present; indeed it is hardly one garden in a hundred where they obtain. Even if planted now—the beginning of November—with but little attention the beautiful Helleborus niger will continue in bloom through the whole winter if the weather be moderately mild; if, on the other hand, severe weather prevails, the large white and pinkish blooms may be readily protected by hand-glasses. The plant is easily cultivated and propagated, as large roots may be cut up into small pieces and distributed about the garden, where they will be sure to succeed if planted firmly in good soil. The plant is also well adapted for potting, well-grown specimens making a fine show in the conservatory or greenhouse. *T. J.*

Gumming Roses.—In reply to the communication which you have received from Mr. Johnson, Hon. Secretary of the Leek Rose Society, I am requested by the committee of the National Rose Society to say, that they in their decision expressed no opinion whatever upon the practice of gumming Rose blooms, as they had no law to guide them in the matter. After taking all the circumstances of the particular case submitted to them into consideration, they came to the conclusion that as the exhibitor in question had infringed no existing regulation of either Society, the prize could not be withheld from him. When the new bye-laws and regulations, which the committee have for some time past had under consideration, and which will be submitted to the Society at their next general meeting, are in print, it will be seen that the committee of the National Rose Society discountenance the practice of tampering in any form or shape with Rose blooms intended for exhibition. At the same time they wish it to be clearly understood that in their opinion it is but very seldom indeed that any such practices are resorted to by exhibitors. *Edward Mawley, Hon. Secretary.*

Hybridising Potatos.—We should like to supplement the article which appeared in your issue of the 8th by mentioning that Mr. Robt. Fenn, who is so well known in the Potato world as a successful hybridiser and raiser of seedling Potatos, has also effected a cross between Solanum tuberosum and another species received this year from Kew, under the name of S. Fendleri. It is also worthy of note that the variety of S. tuberosum used in effecting our cross with S. Maglia was one of Mr. Fenn's latest seedlings, which has proved remarkable as a disease-resisting variety, and that it was the same variety as that used by Mr. Fenn to cross with S. Fendleri. *Sutton & Sons.*

Cockroaches. — In stoves and Orchid-houses where there is sufficient accommodation or hiding-places for these insects to lurk, their destructive power is urgent enough to demand a remedy, even if we cannot effect their extermination. Of this fact every Orchid grower is painfully aware. In the Palm-house at Kew, where the iron gratings afford a ready and safe retreat, these insects often multiply to such an extraordinary extent that they attack and devour the leaves of strong-growing plants. A simple but effective method of destroying them has been adopted lately, by which over 2000 were destroyed in a short time, at the rate of 100 to 300 in a single night. Glass jars, in which a small quantity of treacle or molasses is placed, are distributed about the house in such positions that the insects can readily find their way into them, lured to their destruction by the smell of the bait. The cost is trifling, as low-quality material is all that is requisite, and the insects can be readily separated from it by straining every morning. *J. F.*

Crotons Spotting.—Noting your correspondent's enquiry in last week's issue of your paper, as to the cause of his Croton leaves spotting and dropping off, I have no doubt the cause is excessive moisture through over-syringing. I never syringe my Crotons after September until the month of March, and on the hottest days during the summer months only twice a day, but simply keep three or four evaporating pans filled with water, which creates ample moisture. *H. Ranger, Aigburth.*

Nerine venusta.—Is this plant in the country? It is classed by Herbert with the Guernsey Lily, and, if so, should have glabrous and green, not glaucous foliage. There is much confusion and wrong naming of the Nerines amongst gardeners. A very pretty one has been sent me from Floore, under the name of N. amabilis. It belongs to Herbert's section Distoriæ, but is handsomer than the other members of that section. *R. T. Clarke, Hornsea.*

Tubular Boilers.—Reading the remarks by "Thrumpton," p. 598, it appears to me that all gardeners have their own favourite boilers, irrespective of quality. Now, "Thrumpton," I find, still holds to the saddle for economy, but does not tell us what that economy consists in. Can "Thrumpton" keep in his fires to heat his houses for 4*d.* per day, as I am now doing? My two boilers are heating No. 1 greenhouse, 54 × 20; No. 2, 44 × 12; No. 3, 56 × 8; No. 4, 70 × 12; No. 5, 80 × 14; No. 6, 80 × 16, and 80 feet run of pit. Now, my houses are not small, yet the whole does not cost me 12*s.* per week with our usual winters, although I force the usual flowers for Christmas. I quite agree with his remarks respecting the setting of boilers; and when I tell him I have taken down and reset my present boilers seven times before I got them to my satisfaction, he will admit I have some experience of them. I, for my part, shall never use a saddle boiler again, as I am convinced the heat is lost before it has done its work. So that "Yorkshireman," who asked for advice about boilers on p. 536 should just use his own opinion, as he will never know what boiler to use if he has so many recommended to him. *A. Groombridge.*

Pleroma Benthamiana.—Amongst the many novelties at Storrs Hall Gardens, Windermere, the Rev. J. Staniforth's, are some plants of the above trained up the rafters of an intermediate-house; they are objects of great beauty just now, dozens of trusses of bright blue flowers, as many as eighteen flowers expanded on a truss—a grand plant for the like situations at this dull season of the year, and should be grown more than it is. *A. O.*

Croci autumnalis.—The autumn Crocuses have been flowering very early and in great beauty this season. When I left home a few days since nineteen species, with numerous varieties, were in flower: five only had not yet entered an appearance, viz., sativus, serotinus, damascenus, hyemalis, and vallicolus, which were just pushing. I regret to say that I, too, have lost Crewei, as also Scharojani. *R. T. Clarke.*

A Seedling Tropæolum.—One of the most effective things we have this year has been a rampant, brilliant-coloured Tropæolum, the result of a cross from the common Tropæolum majus by the pollen of the garden Lobbii varieties. It may be had probably from Chiswick. The seedlings seem to come true. *R. T. C.*

Cultivated Potatos.—I have read with much interest the excellent account of Messrs. Sutton's experiments in Potato culture and hybridisation contained in your last issue, and feel very much obliged to them for the pains they have taken. I have seen all the specimens to which reference is made, and the berries of the hybridised Maglia × tuberosum, and the tubers of the improved Maglia already diverging into two coloured varieties are most satisfactory. The further points that occurred to me in reading over the paper were these:—1. The place where Darwin found his Maglia (the specimen which was figured in my paper in the *Journal of the Linnean Society*) was not in the neighbourhood of Valparaiso, but in the Chonos archipelago. This archipelago lies in 44°—46° south latitude, 12° south of Valparaiso. Seven hundred miles makes a very appreciable difference in climate, so that in point of fact Maglia as a wild plant runs out much further from tuberosum in the direction of damp and coolness than your contributor gives it credit for. 2. We have cooked and eaten the tubers of Solanum Jamesii, and find them to be of excellent flavour, so I quite echo the wish of your contributor that some enterprising Potato grower would bring a stock to market. The plant multiplies rapidly, but with us at Kew, as with Messrs. Sutton, the tubers still remain very small. 3. The other Rocky Mountain type, Solanum Fendleri, is, no doubt, truly wild in the United States. Since my paper was written it has been brought into cultivation both at Kew and Reading. It seems, as compared with Andine tuberosum, a very distinct geographical race—perhaps as distinct as Maglia, and I hope will be well tested as an esculent pure and simple, and hybridised with the other forms. But neither Fendleri nor Commersoni have yet been fairly tested in England, but, thanks mainly to Messrs. Sutton, the progress that has been made in a single year towards working out the problems at issue is most satisfactory. *J. G. Baker.*

—— The point of most exceeding interest in the communication at p. 535 respecting the hybridisation of Potato species at Reading seems to have been omitted, and that relates to the sort or kind of cultivated variety which was the pollen parent to S. Maglia. I presume that can be no secret, and must have been overlooked in the writing. To outsiders who may watch the results of this hybridisation it would be of the first moment to learn something of the pollen parent—in fact, the absence of mention of that parent leaves room for doubt, whilst the fullest information would have satisfied all inquirers. As, for instance, it would be interesting to learn whether S. Maglia has of its own unaided effort produced seed-apples in this country previously, and also whether it has, or as a rule does produce seed in its native habitat. Should it after all turn out that the seed-balls obtained at Reading are natural produce, of course the result will be a fluke, though not a fluke Potato. If we are informed of the name of the variety from which the pollen was taken, we may well join with the experimentalists in looking for some more tangible results. What we have to ask now is what may be reasonably hoped for from this introduction of wild blood into our present race of cultivated Potatos. Adverse seasons, of course, may come again, and bring with them disaster, but for the past ten years the efforts of raisers of new kinds have been so ably devoted to the introduction of comparatively disease-resisting varieties that we have now such a wealth of kinds and of produce as to be absolutely perplexing. Potatos now are, for the profit of growers, far too abundant and cheap, and unless it be possible to convert them to some other use than the now common one of food for man, there is danger that Potato culture may prove a source of loss and of disappointment rather than of good. *A. D.*

Edgings to Garden Walks.—Although Box is generally used as an edging to garden walks, it does not follow that it is the best, yet it is very neat looking, but for all that it has many faults, chief among which is the one of harbouring slugs and insects, which secrete themselves among its thick close branches and leaves in such a way that they cannot be found or got rid of without a good deal of trouble. Another great objection to Box is that walks cannot be salted, to get rid of weeds, without injuring or destroying it, for however carefully the salt may be applied, the saline moisture finds its way to the sides and impregnates the ground to such an extent as to affect the roots of the plants. Where it can be used, no live edging looks so neat and forms such a good finish as grass, a verge of which may be easily kept in fine order by running the mowing machine over it every week during the summer, and though the labour of doing this may be a little greater than that of clipping the Box, it is more than saved in the keep of the walks, which may be pickled without harming the sides, unless very heavy rain happens to come before the salt is dissolved. Most of our paths are, fortunately, bounded by turf, and every spring we dress the gravel with the most beneficial and satisfactory results, as not only are the weeds eradicated at once, and kept down for the rest of the season, but the walks are cleansed of all moss, conferva and vegetable matter, and so brightened as to look like new, after they get washed by the rain. For kitchen gardens a dead edging is the most suitable, as not only is it favourable for the salting but it stands the wear and tear, and may really be made to look very well by planting behind it, as there are many things suitable, and one of the best among these is the Thrift, which grows close, and is very pretty and effective when blooming. Next to this the Aubrietia may be mentioned, and then there are hosts of Sedums and many Saxifrages that are suitable, besides Violas, such as The Czar and other hardy enduring sorts; all of which come in capitally for growing in lines near walks to ornament or furnish the edgings. Besides these, the Gentiana acaulis is lovely, as there is no blue to equal that of its flowers, which show in such profusion and open in all their glory when the sun shines upon them. The kind of edging that suits best to plant the Gentian between or behind is flints or large stones, under which the plants send their roots and find the moisture they want, and hug and partly cover the exposed surface with their close shoots and foliage, which they beautify when they come into bloom. By making use of such material as flints or stones there need be but little expense incurred, and they answer the purpose well, as do also clinkers or hards, if reduced to a regular size and bedded to about half their depth to give them firm hold of the ground. If manufactured edgings are used, they should be of the hardest makes, or they soon get broken or displaced, in which shabby or irregular state they present a very sorry appearance. The best I have seen are of a dark colour, having apparently a good deal of iron, and are well burned, and so hard as to be almost indestructible. The most suitable pattern is the cable, which these were, as there is nothing stiff or formal in the lines, and no sharp edges to get chipped or broken. To keep them rigid and in regular trim they had holes in each end, where they joined, for a stout iron pin to hold them together. *J. S.*

Chrysanthemums at Horton Park.—We have a capital show of Chrysanthemums this year at Horton Park, Bradford; the white Elaine has been produced and shown here with a bloom of 9¾ inches in diameter. There are also very large well developed specimens of White Beverley, Guernsey Nugget, Inner Temple, Katherine Telfourd, Fair Maid of Guernsey, Prince of Wales, Venus, Golden Beverley, &c. Very beautifully formed flowers are to be seen in George Glenny, Mrs. George Rundle, Mrs. Dixon, and Madame Clement Andiguier. Altogether the show is one to be proud of, and the public park manager, Mr. Lander, is much to be congratulated. *F. Walton, Bradford.*

Introduced Plants.—A complete list of plants introduced from abroad by Mr. Anderson-Henry, and of the numerous hybrids raised by him, would be full of interest both for present and future reference. Perhaps few people could give more information than Mr. Lindsay as to such plants as were raised or introduced of late years, as he had opportunities of seeing the plants at Hay Lodge often, and of hearing Mr. Henry's accounts of them. In the many gardens which owe rare and beautiful plants to Mr. Anderson-Henry's kindness and generosity, an authentic history of those of his own raising or introduction would assuredly be welcome; and much scattered information about them might be collected now which a few years hence it might not be easy to get. *C. M. O.*

Carter's Liliputian Potato.—As many people who saw this remarkable Potato exhibited were anxious to know the exact number of tubers it produced, we beg to inform you we yesterday detached these from the root, and find they reached 353 in all. *James Carter & Co.*

New Crabs.—I send you three branchlets of a seedling Crab which I fancy is something of the variety you mentioned in the *Gardeners' Chronicle* a few weeks ago; they are, however, not quite fair specimens as last night's storm of wind accompanied by heavy showers of rain shook off about one-third of the fruit. Some few years ago I sent better specimens to Messrs. Carter & Co., and in the spring following a bundle of grafts, asking only that if sent out they should retain the name I had given this seedling, viz., Wooler's Ornamental Prolific Crab. A couple of years after I wrote and asked what success had been attained, and in reply Messrs. Carter & Co. wrote that they had lost the entire lot. Naturally I concluded little value had been placed upon the variety, and I had not even propagated any myself. This spring, however, I had a few grafts put upon the Paradise stock, as the original having been crowdedly planted along with other seedlings raised at the same time, I thought it advisable not to trust a single chance to preserve it, inasmuch, as I deem the race had properties which might be employed to advantage with a good chance of breeding new and very prolific varieties of the domestic Apple. I may say I reared the seedlings in two boxes which were simply, when young, planted-out by knocking out some portion of the bottom of the boxes and then sinking them in the open ground. I also send you a branchlet of one other of these seedling Crabs, which indicates the parentage on one side, as they were raised by crossing on chiefly, and by the pollen from, the Japan Crabs—Pyrus Rigno and Pyrus Torengo. With the Siberian Crabs I send you a few fruits of the Pyrus Rigno to compare, and see that the second seedling takes after the P. Rigno, which, if you taste, I think you will find an agreeable but distinctive new acid flavour; and it has occurred to me that this new flavour would be an acquisition to our edible Apple. Our own wild Crabs are said to make valuable jellies, but their sourness is of a rough description, whilst the acid of these Japan Crabs is not so. Another of the seedlings is of a more upright growth, producing a fruit of about an inch or more in diameter. This specimen I also sent to Messrs. Carter & Co., who wrote me they had submitted it to a very high authority, who said it was like one already in cultivation, but handsomer, yet not worth bringing it out as a seedling. They appeared to come into precocious bearing, and the one of which I send you the three specimens has borne every year quite as prolificly. Bearing in bunches makes them ornamental, which is increased by their light golden colour. They have another distinctive character—they remain on the tree until the frost blackens them, or very high winds shake them down. *W. A. Wooler, Sadberge Hall, Darlington, Oct. 27.*

Poisonous Fungi.—"A family poisoned by toadstools!" Such was the startling heading of a report in the Manchester newspapers of September 22, and the following day the same paragraph, although somewhat altered, appeared in many other newspapers. The facts of the case are as follows:—A man named Holt went out to gather Mushrooms in the pastures adjoining the Irwell at Eccles, near Manchester, on Sunday morning, September 21. He brought home a quantity of fungi, which his wife cooked, although she was dubious about them, and the father, mother, son, and daughter made a meal of them. Shortly afterwards they began to be ill, and Dr. Cox was called in, who saw symptoms of poisoning were present, and at once administered an emetic, which had the desired effect, although the stomach-pump was not used, as many of the newspapers stated. The father, who probably had eaten more than the others, had a slight delirium, and lay in a precarious condition, whilst the girl frothed very much at the mouth, and had a wild anxious expression. However, under the doctor's care the family soon recovered, and doubtless have had a narrow escape. As soon as Holt was well enough to go out he went (under Dr. Cox's directions) to the exact spot from where he had gathered his Mushrooms, and collected a few more, which were forwarded to me. These included five different species, as follows:—Agaricus (Stropharia) stercorarius, Fr.; A. (S). semiglobatus, Batsch; A. (Panæolus) separatus, L.; A. (P.) fimiputris, Bull; A. (Psilocybe) semi-lanceatus, Fr. Had Holt known anything about fungi, and being desirous of poisoning his family, he could not easily have selected five more unwholesome species. The last-named is regarded as a poisonous species, and the others are extremely common on rank and putrid dung in pastures everywhere. How these five species could be mistaken for the common Mushroom it is difficult to imagine, and it is evident some men will eat anything. *H. T. Soppitt.*

Creepers on Houses.—I was pleased to notice in the old English town of Dunster a magnificent plant in full flower of Bignonia grandiflora trailing over the door of a house facing one of the principal streets. The attention of every passer-by was attracted. It is to be wished that this example be copied, and some change given to the everlasting Ivy and Virginian Creeper. Owners of houses in rural towns with an unvitiated atmosphere might make the bare walls of their houses quite lively with such creepers as Maurandia Barclayana and others. *C. A. M. C.*

Reports of Societies.

Royal Horticultural: *Nov.* 11.—At this gathering we have not to chronicle a great display of productions like that seen at the last meeting—for beyond a few Orchids there was but little except some groups of new Chrysanthemums and cut blooms of the same.

FLORAL COMMITTEE: *Section A.*—Present: James O'Brien, Esq., in the chair; and Messrs. J. Laing, J. Woodbridge, H. Herbst, H. Ballantine, J. Dominy, H. Williams, and E. Hill.

Section B.—Present: Shirley Hibberd, Esq., in the chair; and Messrs. W. B. Killock, J. James, H. Bennett, G. Duffield, W. Bealby, and G. F. Wilson.

Messrs. Veitch & Sons, Chelsea, showed a large panful of Caraguata angustifolia, a plant with a resemblance to a Pitcairnia, but the leaf shorter and less drooping; a pretty addition to winter-blooming subjects. The blooms, which were not fully open, formed tufts of a scarlet and orange colour. From the same nursery came Ipomœa Thomsoni, a white-flowered stove climber, of the same evanescent character as these plants generally. It has been described in these pages (see *Gardeners' Chronicle*, p. 816, vol. xx). W. Lee, Esq., Downside (Mr. Woolford, gr.) showed Oncidium incurvum album, a whitish flower on a slender stalk, numerous, but wanting in any especial merit. A very fine cut spike of Vanda Sanderiana, with blooms even larger than we have seen before, came also from this garden. From the garden of C. Cookson, Esq., Wylam-on-Tyne, came a bright-flowered Calanthe Sedeni, a hybrid from C. vestita rubra oculata and C. Veitchii, the fertilisation having been effected on November 21, 1881, lower part of flower being rosy-carmine. From Baron Schroeder's garden, The Dell, Egham, Mr. Ballantine brought plant of Aërides Sanderiana, a choice thing, with waxy-like blooms of creamy-white and purple, the flower-stalk and spike measuring a foot in length. Also a plant of Cattleya triophthalma. Mr. G. Fleet showed a pretty silver variegated form of Cupressus Lawsoniana named argentea Fleetii, a decided acquisition to hardy Conifers. Messrs. Laing & Co., Forest Hill, brought Chrysanthemum La Purité, a white Japanese hybrid, and C. Anaise, a pretty pompon of pink, yellow, and crimson. Messrs. Cannell and Sons had a semi-double white Pelargonium La Cygne—a compact flower, and the growth of a sturdy character; the colour is quite pure, and it is seemingly a variety that will find many admirers. There came likewise from the Swanley Gardens a reflexed Chrysanthemum of a beautiful bright crimson colour, and of good quality, and a pompon, variety Star of Wyke, and a Japanese named La Bien Ami—a compact pale lilac flower, having the centre filaments white. The whole of these are shortish and but slightly contorted. Messrs. Veitch had Chrysanthemum roseum pictum, a large handsome bloom, having the reflex of the florets white; and C. Criterion, a big, bronzy-yellow Japanese with flattened petals. Messrs. Hooper & Co. showed a yellow ground perpetual Carnation, with slight crimson flakes, pretty and distinct, with a robust dwarf habit. It was named Chevalier. Messrs. C. Lee & Son showed a variegated Laurustinus of a creamy tint, distinct of marking. Besides the above, which were shown for certificates, groups of Chrysanthemums were staged by several nurserymen, Messrs. Veitch & Sons, Chelsea, having a goodly number of new varieties of varying degrees of merit, and almost all of the Japanese section. There were Galatea, a rosy-lilac, with thread-like petals; Orange Quill, a bronzy gold, small but showy; Ferdinand Ferral, light rosy-lilac; Formosa, a lake coloured bloom, with flat petals; Brise du Matin, a light flesh; Telfourd Salter; Tubiflorum, more curious than handsome; and Etoile du Midi, a crimson-chestnut reflexed sort. Messrs. Cannell & Sons put up King of Crimsons and Julie Lagravere, so as to show how much Cullingfordi was superior to these in tint; Temple of Solomon, a fine lemon coloured bloom of good proportions, and several others. Messrs. Cannell likewise staged several boxes of cut Chrysanthemum blooms in the manner that it is usual to see cut single Dahlias put up, and with very good effect. Among these were boxes of single Chrysanthemums of pretty forms and colours. Messrs. J. Laing had a nice group of novelties, among the more noticeable being L'Elegans, a pompon Beauté des Jardins, and Dormillion, a fine crimson.

FRUIT COMMITTEE.—Present: J. Lee, Esq., in the chair, and Messrs. R. Hogg, P. Crowley, G. Bunyard, S. Lyon, G. Paul, G. T. Miles, J. Smith, J. Burnett, W. Denning, and R. D. Blackmore.

Of fruit we noticed several dishes of seedling Apples and Mrs. Pearson Grape—three good bunches, shown by Mr. Taylor, gr. to J. Macintosh, Esq.; and from Mr. May, gr. to Capt. Le Blanc, Northam House, Barnet, came a capital lot of his selected Brussels Sprouts, hard and shapely, and of medium size—good from the bottom to the top of the stalk. Mr. J. Wiggins, gr. to W. Clay, Esq., showed some strong plants of Cyclamen in variety; and from Chiswick came some pretty plants of Senecio pulcher in pots.

The awards made were:—

FIRST-CLASS CERTIFICATES.

Section A.

To Messrs. Veitch & Sons, for Caraguata angustifolia.

To Messrs. Veitch & Sons, for Ipomœa Thompsoni.

To Messrs. Charles Lee & Son, for Viburnum Tinus aureo-variegatus.

To Mr. G. Fleet, for Cupressus Lawsoniana Fleetii.

To W. Lee, Esq., for Oncidium incurvum album.

To Baron Schroeder, for Aërides Sanderiana and Cattleya triophthalma.

Section B.

To Messrs. J. Laing & Co., for Chrysanthemums La Purité and Anais.

To Messrs. Cannell & Sons, for Pelargonium La Cygne, Chrysanthemum Cullingfordii, and C. La Bien Ami.

To the Royal Horticultural Society, for Senecio pulcher.

To Messrs. Veitch & Sons, for Chrysanthemum roseum, C. pictum, and C. Criterion.

To Messrs. Hooper & Co., for Tree Carnation Chevalier.

VOTES OF THANKS.

To Mr. Taylor, for Grape Mrs. Pearson.

To Mr. Norman C. Cookson, for Calanthe Sedeni.

To Messrs. C. Lee & Son, for Statice floribunda.

To W. Lee, Esq., for Orchids.

The National Chrysanthemum: *Nov.* 12 *and* 13.—This, the late Borough of Hackney and original Stoke Newington Society, held its annual great show at the Aquarium on the above-named days. It had been expected from the appearance of the preliminary skirmishes at Kingston and other extra metropolitan show centres, that this would be one of the best shows witnessed in London, and visitors were certainly not disappointed. The beauties of the exhibits were better brought out by the good arrangements of the stands and the placing of the groups, and instead of the effect being frittered away by a disconnected plan, the whole, or nearly so, came within the vision at once, so that the first impression of the scene was a fine one, and which subsequent inspection did not dispel. The whole central space was given up to the flowers, with the exception of the cirque for horsemanship. The groups of Chrysanthemums in pot were mostly staged along a temporary fence covered with green calico, and between the groups were Palms and Ferns in almost equally large masses. The remaining pot specimens were placed in and around the two large fountains, and everywhere there was ample room for promenading and for inspection of the exhibits.

OPEN CLASSES.—The prizes for the best group of Chrysanthemums were awarded, 1st, to Mr. H. Harding, gr. to J. Starling, Esq., The Chestnuts, Gunnersbury, who had a showy lot of old and new varieties of the larger flowered kinds, the plants ranging from three to seven or eight; 2d, Mr. N. Davis, Lilford Nurseries, Camberwell, a pretty lot, of dwarfer habit; 3d, Mr. G. Stevens, St. John's Nursery, Putney. For the best nine trained specimens in pots less than 12 inches.—1st, Mr. W. Monk, gr. to — Fowler, Esq., Forest House, Leytonstone, who had well bloomed examples of Venus, Dr. Sharpe, White Venus, George Glenny, Lord Derby, Mrs. G. Rundle, John Salter, Princess of Wales, and Mrs. Dixon—good pyramidal-trained plants of moderate dimensions; 2d, Messrs. Drain & Son, Southgate Nursery, De Beauvoir Town, with compact smaller plants, fairly bloomed. Mr. Monk was the winner of the 1st for six trained specimens of Japanese kinds, he having To Kio, Peter the Great, Mons. C. Hubert, La Charmeuse, La Nymphe, and Thunberg, a charming lot, well adapted for greenhouse decoration by their available dimensions; 3d, Mr. G. Archer, gr. to J. J. Griffiths, Esq., The Grange, Highbury. Trained pompons were not largely shown, but were particularly effective, although it seemed as if few noticed them, the big Japanese and other cut blooms monopolising everybody's attention. First, Mr. Reeve, gr. to — Elliott, Esq., Hadley Green, Barnet—these were shield-trained and measured 6 feet across; 2d, Mr. R. Payne, gr., The Cedars, Stamford Hill, with neat, well-flowered plants.

CUT FLOWERS.—The grand stands of forty-eight blooms, twenty-four to be incurved, in not less than eighteen varieties, and twenty-four Japanese, similarly restricted, brought out nine competitors. If anything, the blooms were larger than has been seen in London previously, and were intermixed here and there with some new kind, beautiful in form and colour. Mr. C. Herrin, gr. to J. N. Hibbert, Esq., Chalfont Park, Bucks, was 1st, showing the undermentioned kinds in Japanese:—J. Delaux, or the F. A. Davis of some; Madame Astorg, Madame Andiguier, Thunberg, Grandiflorum, Hiver Fleur, Boule d'Or, Fair Maid of Guernsey, Comtesse Beauregard, Fanna Bourcharlet, Baron de Prailly, Agrements de la Nature, Madame Moulise, Soliel Levant, Duchess of Albany, Album plenum, Mons. Ardenne, Triomphe de Châtelet. The incurved kinds consisted of Barbara, Refulgens, Venus, Princess of Teck, Princess Beatrice, Mrs. Heale, John Salter, Empress, Lord Wolseley, White Venus, Lord Alcester, Cherub, Jeanne d'Arc, Golden Empress of India, Lord Hardinge, Jardin des Plantes, White Empress. Mr. Gibson, gr. to J. Wormauld, Esq., Morden Park, Surrey, was 2d; 3d, Mr. W. Flight. For twenty-four incurved varieties there were eight entries, the 1st prize and the Silver Cup being awarded to Mr. E. Sanderson, St. Mary's Road, Harlesden. Without specifying all the fine varieties found in this stand, we will mention only the best, viz., Golden Empress of India, Empress of India, Empress Eugénie, Hero of Stoke Newington, Mabel Ward, Queen of England, Alfred Salter, Emily Dale, Princess of Teck, and Princess of Wales. 2d, Mr. G. R. Wildman, Oaklands, Grove Road, Clapham Park; 3d, Messrs. Saltmarsh & Co., nurserymen, Chelmsford. With few exceptions the blooms in the above class were as fine as we have seen them. For eighteen incurved varieties, distinct.—1st, Mr. Berry, gr., Roehampton House, Surrey, amongst whose flowers were extra examples of Queen of England, Mrs. Brunlees, Prince of Wales, Empress of India, Prince Alfred, Refulgens, and Princess of Wales; 2d, Mr. E. Sanderson; 3d, Mr. E. C. Jukes, Hope Cottage, Winchmore Hill. For twelve incurved kinds.—1st, Mr. Sanderson, his flowers being equal to those shown by him in the larger numbers; 2d, Mr. C. Herrin; 3d, Mr. J. W. Springbet, Hammond Street, Cheshunt. For these prizes there were fifteen competitors. For six incurved kinds.—1st, Mr. C. Brown, gr. to R. Henty, Esq., Nazing Park, Waltham Cross, with Empress of India, Empress Eugénie, Eve, Adam (which was really Mabel Ward), Barbara, and Mrs. Shipman; 3d, Mr. W. Smith, gr. to T. Gardener, Esq., Springhill House, Upper Clapton. This class had perhaps the least fine blooms of any, but, as the prizes were only open to persons who had not taken a prize for cut blooms in any previous year, that was not a matter of surprise. For twelve blooms (four incurved, four Japanese, and four large Anemone-flowered).—1st, Mr. C. Herrin, who had beautiful examples of Golden Empress of India, Queen of England, J. Salter, and White Empress of India, as his incurved kinds; Lady Margaret, Madame Berthe Pygny, Madame Cabrol, and Fabias de Maderanaz, Anemone-flowered; Duchess of Albany, Triomphe de Châtelet, Fair Maid of Guernsey, and the Daimio for his Japanese. Mr. J. Lowry, gr. to J. McAndrew, Esq., Belmont Hill, was 2d. For six incurved blooms (one variety).—1st, Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Basset, with Lord Alcester; 2d, Mr. B. Calvert, gr. to G. Kent, Esq., Southwood, Highgate, with Empress of India; 3d, Mr. C. Barker, gr. to Mrs. Frankland Russel Astley, Chequers Court, Bucks. The next class, that for twelve large-flowered Anemone-flowered blooms, brought up some wonderful examples. Mr. C. Herrin was again successful in taking the 1st prize, the sorts shown being Sœur Dorothée Souille, Minnie Chate, Mad. Berthe Pygny, Mad. Cabrol, Mrs. Pethers, Empress, La bien Aimée, Georges Sand, and Souvenir de l'Ardenne; 2d, Mr. Sullivan, gr. to G. B. Chapman, Esq., Devonshire House, Roehampton; 3d, Mr. E. C. Jukes. These flowers were beautiful in every way, and being new in form, and choice in their colouring, ought soon to become quite popular. The guard petals, which are closely laid, form a duly proportioned fringe around the centre. In the class for twenty-four Japanese varieties (distinct), Mr. C. Herrin was 1st, he having rare flowers in Comtesse de Beauregard, Album plenum, Agrements de la Nature, Triomphe de Châtelet, Meg Merrilies, Peter the Great, Thunberg, Sarnia, Mad. Astorg, Mons. Ardenne, Magnum Bonum, Grandiflorum, and others equally fine; 2d, Mr. J. W. Springbet; 3d, Mr. J. Lowry. For twelve Japanese varieties.—1st, Mr. J. C. Child, gr. to Mrs. Slade, Claygate, Esher, with medium-sized bloom, somewhat unequal, but good, were Hiver Fleur, Mons. Delaux, Fanny Boucharlet, Album plenum, Balmoreanum, Mons. Desbreux, and Elaine; 3d, Mr. Major, gr. to J. P. Kidstone, Esq., Nun Park, Barnet. For six Japanese, one variety only to be shown.—1st, Mr. C. A. Anderson, Waverley Abbey, Farnham, Surrey, with Madame Andiguier—a very fine stand, equally developed, and even as to size; 2d, Mr. T. Glen, gr. to Mrs. Montefiore, Worth Park, Ealing; 3d, Mr. E. Wills. For the best twelve reflexed varieties, with no limit as to the number of these.—1st, Mr. E. Wills, Bassetwood, with Peach Christine, Phidias, King of Crimsons, Cloth of Gold, Golden Christine, and Mrs. Forsyth; 2d, Mr. Bettesworth, gr. to R. Ewing, Esq., Bruton Grange, Cheshunt; 3d, Mr. Holmes. For the best twelve pompons, distinct, shown in threes.—1st, Mr. M. Butcher, gr. to W. G. Cousins, Esq., The Priory, Hadley; 2d, Mr. Bettesworth; 3d, Mr. N. Davis. For the best Anemone pompons.—1st, Mr. M. Butcher; 2d, Mr. W. Long; 3d, Mr. E. Huntley.

AMATEURS' CLASSES.—For the best twelve incurved, distinct kinds, 1st, Mr. J. Hillier, 13, Priory Road, Wandsworth, with well-grown medium-sized flowers of Cherub, Golden Empress, Hero of Stoke Newington, Lord Wolseley, Mrs. Brunlees, Jeanne d'Arc, Prince Alfred, Princess of Wales, John Salter, Bruce Findlay, Queen of England; 2d, Mr. G. R. Wildman; 3d, Mr. H. Bingham, Manor Road, Stoke Newington. For the best six incurved.—1st, Mr. G. R. Wildman. For the best twelve Japanese kinds.—1st, Mr. J. Hillier, with nice blooms of well known varieties; 2d, Mr. F. A. Roet, 174, Fanfield Road, Wimbledon; 3d, Mr. W. Wright, 42, Darnley Road, Hackney. For the best six Japanese.—2d, Mr. G. Walker, 12, Wingfield Road, Wimbledon; 3d, Mr. F. A. Roet.

POT PLANTS.—For the best nine trained specimens.—1st, Mr. Payne, gr. to — Payne, Esq., Stamford Hill.

Amongst miscellaneous floral items must be mentioned Messrs. Cannell & Sons' fine display of boxes containing examples of cut blooms of every class of the

Chrysanthemum, lavishly supplied; also Mr. T. Ware's large contribution of cut blooms of single-flowered varieties; and Mr. Dixon's large table of cut blooms, bouquets, &c., which, tastefully arranged as they all were, added something to the attractiveness of the show.

Fruits.—The class for twelve bunches of Grapes, without restriction of kinds, brought a fine competition, five lots being staged, most of the exhibits being of a superior order. Mr. Pratt, Longleat Gardens, Warminster, was 1st, with four huge bunches of Black Alicante, same of Muscat of Alexandria, the rest, smaller, of Lady Downe's. Mr. S. Castle, manager, West Lynn, was 2d, with smaller but superbly finished Gros Maroc and Alicante, good Golden Queen and large but reddish Gros Colmar. Mr. W. Howe, Park Hill Gardens, Streatham, was the winner of the 3d prize, and had small but good Muscat of Alexandria, Black Hamburgh, good Alicante, and one bunch of Muscat Hamburgh, reddish in colour. In the class for three bunches of black Grapes Mr. Howe was a good 1st, with splendidly finished Alicantes. Mr. J. Smith, Romford, Essex, was 2d, with Gros Colmar; and Mr. Castle was 3d, with the same kind. In the class for white Grapes only three lots of Muscat of Alexandria were shown, fruit of the best quality coming from Mr. Pratt; Mr. Herrin coming next, with very finely finished samples; and Mr. Castle was 3d, with medium bunches.

Dessert Apples, in collections of six dishes, were in fine form, eleven lots being in competition; colour in many cases was remarkable. Mr. Miller, gr. to W. A. Friend, Esq., Margate, was 1st, with very handsome Adams' and Scatlet Pearmains, King, Cox's Orange, Fearn's and Ribston Pippins; Mr. Ross, gr. to C. Eyre, Esq., Welford Park, Newbury, was 2d; Mr. Waterman, gr. to H. A. Brassey, Esq, Preston Hall Gardens, was 3d.

There were eight lots of kitchen Apples, all of which were very fine samples. Mr. Miller was again the 1st, with fine Golden Noble, Mère de Ménage, Annie Elizabeth, Blenheim Pippin, Emperor Alexander, and Kentish Fillbasket; Mr. Ross was 2d, and Mr. Goldsmith, 3d.

Evidence of the difficulty found in keeping Pears was shown in the fact that only two collections of six dishes were staged, the best coming from Mr. Goldsmith, who had Doyenné du Comice, Conseiller de la Cour, Bronzee, Nouveau Poiteau, Beurré Diel, and Beurré Superfin; Mr. Waterman was 2d, with fine Easter Beurré, Triomphe de Jodoigne, Chaumontel, Glou Morceau, &c.

In the class for twelve dishes of Potatos, Mr. Howard, Canterbury, was 1st, having fine samples of Adirondack, Defiance, Cosmopolitan, Purple King, Edgecote Purple, Vermont Champion, Vicar of Laleham, Reading Russet, Pride of Ontario, &c. Mr. R. Dean, Ealing, was 2d, with Woodstock Kidney, The Dean, Vicar of Laleham, Snowflake, Chancellor, Cosmopolitan, &c. Mr. C. Osman, Sutton, Surrey, was 3d. In Mr. Dean's class for three kinds sent out by him, Mr. Herrin was 1st, with Radstock Beauty, Vicar of Laleham, and Sunrise; Mr. Howard coming 2d; Mr. Tom Tooley, Banbury, 3d; and Mr. Ross 4th. For a special prize for the best dish in this competition Mr. Herrin was 1st, with handsome Radstock Beauty. In the class for six kinds Mr. Dean was 1st, with The Dean, Vicar of Laleham, Matchless, Snowflake, Snowdrop, and Schoolmaster; Mr. Howard was 2d; Mr. Chadwick, Hanger Hill, Ealing, was 3d. In all these classes there was large competition. In the competition for Messrs. Hooper's prizes for Earliest of All, twenty-five tubers, Mr. Howard was 1st, Mr. May was 2d; and Mr. C. Osman, Sutton, Surrey, 3d. For Mr. C. Pragnell's prize for the best dish of any kind sent out last winter, Mr. Herrin was 1st, with The Dean.

Collections of Vegetables.—The Messrs. Sutton & Sons offered valuable prizes for six kinds of vegetables, and there were fifteen collections staged, the average quality being remarkably good. Mr. May, gr. to Captain Le Blanc, Barnet, was 1st, with four fine stems of Brussels Sprouts, solid Giant Autumn Cauliflower, Clarke's Red Celery, a fine sample; large Excelsior Tomatos, Lyon's Leeks, and Lapstone Potatos; Mr. Miller, Rood Ashton Gardens, Trowbridge. was 2d, with fine Cauliflowers, huge Leeks, Brussels Sprouts in dish, Ashleaf Potato, good Intermediate Carrots, and Tomatos; Mr. Howard Bridge, Canterbury, was 3d; Mr. Waterman, Preston Hall Gardens, was 4th; and Mr. J. Woodward, Isleworth, was 5th. Messrs. Webb & Sons, Wordsley, also offered fairly good prizes for a similar number of kinds in a collection, but the condition proved too perplexing to one competitor, who put up twelve kinds instead of six. Mr. Miller was here 1st, with Snowball Turnips, Vicar of Laleham Potatos, Student Parsnips, Dwarf White Celery, fine Leeks, and Cauliflowers; Mr. C. Waite, Glenhurst, Esher, who was 2d, had some fine Brussels Sprouts, plants of the Wroxton strain; Mr. May was 3d. Messrs. Sutton & Sons staged a remarkably fine collection of a hundred kinds of Potatos, and from the Royal Horticultural Gardens came the fine collection of Gourds shown at South Kensington.

Southampton Chrysanthemum Show: *Nov. 6 and 7.*—The seventh annual Chrysanthemum and Fruit Show was held in the Skating Rink, and proved a great success, the best show that the Society has held. In former years a bird show was held in connection with the Chrysanthemum show, but this year the entries were so numerous, that the birds were compelled to be placed in the Victoria Rooms, which are adjoining the Skating Rink, this arrangement proving much more satisfactory than in previous years, as it allowed the whole of the rink to be used for the flower show, which has gained such large dimensions that it must now be considered as one of the leading shows in England; it is a question if as many and finer plants of Chrysanthemums have been seen at any show before as on this occasion, there being over 100 specimen plants staged, some of them being 6 feet through. The bulk of these having been arranged down the centre of the rink made quite an imposing bank, and were much admired, showing well the increasing interest taken in the cultivation of the queen of autumn flowers. Mr. E. Wills, gr. to Mrs Pearce, The Firs, Bassett, Southampton, well maintained his reputation as a grower of specimen trained Chrysanthemums, as he took 1st prizes in all classes in which he competed, his plants being characterised by having splendid foliage, large blooms not too formally or stiffly trained: his plants of Dr. Sharpe and La Nymphe were grand examples—the latter having 300 fully-developed blooms. Mr. Allen, gr. to J. Bailey, Esq., Glenfield Hill, and Mr. T. Osborne, gr. to J. Buchan, Esq., Wilton House, showed well in this class. A great improvement was manifest in the nurserymen's class for trained plants, those from Mr. W. Joy, Shirley, being very fine, with perhaps the exception of being rather too stiffly tied. Cut blooms of Chrysanthemums were in large numbers, as many as 1300 being staged, consequently the competition in all classes was severe, but the local growers were well able to hold their own although several strangers entered the lists. Groups of Chrysanthemums and miscellaneous groups were effectively arranged and much admired.

Fruit was shown in large quantities and of high quality, particularly the Grapes and Apples—no less than 130 dishes of the latter being staged, while the quality and colour were all that the most exacting could wish. Pears were rather limited in numbers, but excellent in quality. Vegetables were shown in large numbers and of fine quality. Altogether this Society may be congratulated on having such a fine show. They possess a good working committee, of which Captain Gibbs is particularly energetic; and in the secretary, Mr. Fuidge, they have a man of unbounded courtesy and great tact.

Taking the classes as arranged in the schedule, No. 1 was for the best collection of Chrysanthemums arranged in a space 8 feet by 5 feet, quality and general effect being the leading features. Here Mr. Allen was placed 1st, with a collection composed of plants from 3 to 4 feet high; having previously been cut down, they had neat blooms of fair size, good colour, and were effectively arranged. The 2d was awarded to Mr. Osborne, and the 3d to Mr. N. Blandford, gr. to Mrs. Hazlefoot, West End. For six plants, incurved or reflexed, Mr. E. Wills easily carried off the 1st prize with plants from 4 to 5 feet in diameter, profusely bloomed, having good foliage, the varieties being Mrs. Sharpe, Lord Alcester (this variety, which Mr. Wills brought out and had two Certificates for last year, seems to be well adapted for specimens judging from the one here staged), Chevalier Domage, Mrs. G. Rundle, Pink Christine, and Gloria Mundi; 2d, Mr. Osborne; 3d, Mr. L. Kings, gr. to Lieut.-Colonel Macleay, Glasshayes, Lyndhurst. For four plants (incurved or reflexed).—Mr. Allen was a long way ahead of all others with very neat trained plants, Dr. Sharpe being very bright in colour; 2d, Mr. W. Joy; 3d, Mr. J. Reynolds, gr. to the President, Netley Castle. For six Japanese plants there were four competitors, Mr. Wills securing the chief award with plants from 5 to 6 feet through, densely bloomed; La Nymphe, Madame Bertie Rendatler, Fair Maid of Guernsey being some of the best; 2d, Mr. W. Joy, with plants of Elaine, Lady Selborne, and Bouquet Fait; 3d, Mr. Osborne. For four Japanese.—1st, Mr. Allen; 2d, Mr. J. Reynolds; 3d, Mr. J. Thomas, gr. to R. R. Scott, Esq., Shirley. For six plants (open to nurserymen only).—Mr. W. Joy was placed 1st, with good specimens of Fair Maid of Guernsey, and Elaine, &c.; 2d, Mr. W. Dove, Shirley; 3d, Messrs. Ransom & Sons, Shirley. For single specimen (Japanese).—Mr. Wills was 1st, with Bouquet Fait, 6 feet through; 2d, Mr. L. Kings, with Hiver Fleur, from 6 to 7 feet through; 3d, Mr. W. Joy. Single specimen (incurved or reflexed).—Mr. Wills was again placed 1st, with a grand plant of Dr. Sharpe: Mr. L. Kings and Mr. Osborne followed. In the cut bloom classes the most important was for twenty-four blooms, sixteen incurved or reflexed and eight Japanese. There were eight competitors, who made quite an imposing display. Mr. E. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, gained the 1st prize, with blooms of large size, excellent form, and grandly finished, of Madame C. Andiguier, Fair Maid of Guernsey, Comte de Germiny, J. Delaux, Meg Merrilies, Baron de Prailly, M. Ardene Thunberg, Lord Alcester, Empress of India, Queen of England, Golden Empress, King of Crimsons, Mr. Howe, Prince Alfred, Lord Wolseley, Hero of Stoke Newington, Princess Teck, Lady Hardinge, Jeanne d'Arc, Princess of Wales, Pink Venus; 2d, Mr. W. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, with blooms of large size, but lacking finish, some of his Japanese being very fine, notably Comtesse de Beauregard, Fanny Boucharlet, Marguerite Marrouch, and Mdlle. Lacroix; 3d, Mr. E. Wills, with large blooms that were a trifle coarse, his best being Lord Alcester, Mr. Howe, M. Astorg, Empress Eugénie; 4th, Mr. Osborne. For twenty-four cut blooms, not less than eighteen varieties, there were six collections staged. In this Mr. Molyneux was again the winner of the 1st prize, having fine blooms of Golden Empress, Empress of India, Lord Alcester, Princess of Wales, and King of Crimsons; 2d, Mr. W. Neville; 3d, Mr. E. Wills; while an extra prize was awarded to Messrs. W. & G. Drover, Fareham, nurserymen, for a bright even stand of good blooms. For twelve incurved Mr. Molyneux was again successful in winning a 1st prize, with even, neat blooms, similar in name to the preceding classes; 2d, Mr. Wills, who staged a fine bloom of Mr. Brunless in this class; 3d, Messrs. W. & G. Drover, having a grand bloom of Mrs. Dixon; 4th, Mr. F. D. Hunt, gr. to Mr. R. Moss, M.P., Weston Grove. For twelve blooms, Japanese, eleven entries.—Mr. Molyneux just succeeded in winning 1st place with five solid blooms of J. Delaux, Mons. Desbreux, M. Burnet, &c.; Mr. Wills was a close 2d, who staged magnificent blooms of M. Astorg, Hiver Fleur, Criterion, and Magnum Bonum; Mr. W. Neville was 3d, having a large bloom of Rubrum striatum; 4th, Messrs. Drover. For twelve blooms of Anemome varieties.—Mr. Molyneux was a long way ahead of all the other competitors, staging magnificent blooms of Fabias de Madaranaz, a new variety with long guard petals of a pleasing shade of lilac colour; Mdlle. Cabrol, Sœur Dorothée Souille, Fleur de Marie, Mrs. Pethers, &c. 2d, Mr. Wills, who put up fine blooms of Gluck and Georges Sands; 3d, Messrs. Drover. For twelve blooms, reflexed varieties.—Mr. Molyneux once more followed up his successes with large, deep blooms of King of Crimsons, Golden and Pink Christine, Phidias, and Mrs. Forsythe; Mr. Wills 2d, with extra fine blooms of King of Crimsons; 3d, Mr. Neville. A new class was provided—that for cut blooms of natural growth, to be shown with 4 inches of stem. This proved to be not a too desirable class, causing some complaints as to the awards; but Mr. Wills was placed in his right position with very large blooms of Lord Alcester, Grandiflorum, Dr. Sharpe, and Barbara, arranged with their own foliage; 2d, Mr. Allen, who staged a very fine bloom of Guillaume Delaux; 3d, Mr. Osborne. For twelve cut blooms not less than eight varieties, open to gardens only who did not compete in the preceding classes.—This brought out twelve competitors, Mr. W. Wildsmith, gr. to Viscount Eversley, Heckfield, Winchfield, making a successful *début* as a Chrysanthemum grower. He staged grand blooms, winning easily the 1st place with Madame C. Andiguier, Criterion, Fair Maid of Guernsey, Alfred Salter, &c.; 2d, Mr. Allen; 3d, Mr. Osborne. For twelve cut blooms, open to those who had never taken a prize previously for Chrysanthemums.—Here again Mr. Wildsmith followed up his previous success, having blooms similar in character to those in the preceeding class; 2d, Mr. R. Munday, nurseryman, Basingstoke; 3d, Mr. J. Selden, gr. to Mrs. Brooke Furman, East Cowes; 4th, Mr. Busby, gr. to F. Willan, Esq., Thornhill. For twelve cut blooms, nurserymen only.—Messrs. Drover were easily 1st; 2d, Mr. H. Munday; 3d, Mr. W. Beachey, Kingskerswell, Devon. For twelve cut blooms, amateurs.—1st, Mr. R. Carter, Kent Road, St. Denys. In this stand were fine blooms of Elaine and Peter the Great. Captain Gibbs, Portswood, was a very close 2d; 3d, Mrs. E. Flight, Winchester. For six cut blooms, amateurs.—1st, Mr. H. Brodie; 2d, Mr. W. Reeves. For the most elegantly-dressed stand with Chrysanthemums and other flowers, Miss Flight, Winchester, was placed 1st with a particularly light arrangement, followed by those of Mrs. Chamberlain and Mrs. Brodie.

Miscellaneous Groups were shown by four competitors. Mrs. Wills was placed first with one of a semi-circular form having a pleasing arrangement of Palms, Ferns, Chrysanthemums, Heaths, &c.; Messrs. W. & G. Ransome, nurserymen, Shirley, were a very close 2d, with a group that was slightly spoiled by the back plants being too heavy; 3d, Mr. N. Blandford; 4th, Mr. Reynolds. For a collection of Orchids Mr. Osborn was 1st, followed by Mr. Blandford—interesting collections in both cases.

Table Plants—Solanums, Cyclamens, Primulas, &c.—were staged in good order by Messrs. Wills, Allen, and Messrs. Jeffery, nurserymen, Winchester.

Fruit, as previously stated, formed a large part of the exhibition, and was excellent in quality all through. For three bunches of Grapes, distinct varieties, Mr. T. Hall, gr. to Captain Davidson, South Stoneham House, was adjudged 1st for bunches not over large, but splendidly finished, carrying a dense bloom. The varieties were Muscat of Alexandria, Alicante. and Barbarossa; 2d, Mr. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, who staged large bunches of Gros Guillaume, Gros Colmar, having good berries, and Alicante, good colour; 3d, Mr. Molyneux, with a finely finished bunch of Barbarossa as the best; 4th, Mr. A. Gates, gr. to W. G. Roy, Esq., The Byams, Marchwood. For three bunches black Grapes, Mr. Hall repeated his previous success by taking 1st prize with Alicante, perfect in bunch, berry, and colour; 2d, Mr. T. Grant, gr. to Major Murray, Ossemsley Manor, with Alicante, small in bunch, but very large berries, superbly finished; 3d, Mr. Molyneux. For three bunches of white Grapes Mr. Ward was easily 1st with grand bunches of Muscat of Alexandria of a beautiful amber colour; 2d, Mr. T. Hall, with the same variety, good in bunch, berry, and colour, but slightly shrivelled; 3d, Mr. Sanders, gr. to J. East, Esq., Longstock House, For two bunches of black Grapes, 1st was awarded to Mr. W. Hills, gr. to Viscount Gort, East Cowes Castle, for Alicante, fine in all respects; 2d, Mr. T. Osborne; 3d, Mr. W. Sanders. For two bunches of white Grapes.—Messrs. Oshorne and Gates were awarded 1st and 2d prizes in the order named. For the heaviest bunch, Mr. Ward was 1st; he had a splendid bunch of Gros Guillaume, fine in shape, colour, and berry, weighing 8 lb.; 2d, Mr. Hall, with Alicante, 5½ lb., of fine colour and berry; 3d, Mr. Budd, gr. to F. G. Dalgety, Esq., Lockerley Hall. For one Pine-apple.—Mr. Richards, gr. to the Earl of Normanton, Somerley, Ringwood, was 1st, with a Queen of good colour and form; 2d, Mr. J. Budd. For four dishes of Apples any variety), ten collections were staged. Mr. T.

Hall secured 1st prize with fruit not over large, but splendid in quality and colour, Flower of Kent, Scarlet Admirable, Wellington Pippin, and Blenheim Orange. For three dishes of dessert Apples eighteen competitors entered. First honours were adjudged to Mr. Wildsmith, for King of the Pippins, Court Pendu Plat, rich in colour, and extremely fine Ribston Pippins. For three dishes of kitchen Apples fourteen entered the list. First honours were secured by Mr. J. Mair, with Alfriston, fine; Gloria Mundi, large; and Hollandbury, grand. For dishes of Pears.—1st, Mr. Sanders, who had large fruit of General Todtleben, Beurré Bachelier, Beurré Diel, and Doyenné du Comice. For three dishes of Pears.—1st, Mr. A. Gates. For a dish of Nuts (Cobs or Filberts).—1st, Mr. Wildsmith.

VEGETABLES were finely shown, as they always are at Southampton. For eight varieties Mr. Cox, gr. to R. K. Wyndham, Esq., Corhampton House, Bishop's Watham, was 1st, with grand Veitch's Autumn Giant Cauliflowers, Pragnell's Beet, Parsnips, Magnum Bonum Potatos, and fine Leeks. For a collection of salad Messrs. Richards, Sanders, Amys, and Cox took the prizes in the order here named.

Brighton and Hove: *Nov.* 11 *and* 12.—The annual exhibition of this Society was held in the Dome on the above dates, and if this (the second) show may be taken as a criterion of Chrysanthemum culture at this fashionable seaside resort, the committee may look forward with every confidence to having one of the best gatherings possible in the future. Being held during the height of the season in that town, there should be no lack of funds forthcoming to maintain an annual exhibition, and provide even better prizes than on this occasion. A better place than the Dome could scarcely be chosen wherein to hold an exhibition, provided the weather be clear. On this occasion it was somewhat dull, but later in the day, when lighted with the electric light, the effect was everything that could be desired. The groups for effect formed most prominent and striking features, but being staged under the gallery, they were not seen to the best advantage till the electric light was applied, then they made a very grand display. In the first or open division the 1st prize for a group for effect was awarded to Mr. Spottiswoode, gr. to G. Duddell, Esq., Queen's Park, Brighton, for an excellent group, well assorted in colour and diversified in arrangement; the 2d award going to Messrs. Miles Brothers, The Bristol Nurseries, Kemp Town. This group consisted of a greater amount of flower, the 1st prize lot, however, gaining in the arrangement. Mr. Turner, gr. to Major Way, Hove, was awarded the 3d prize for a bright and cheerful group. In another group, contributed by Mr. Bunney, gr. to W. H. Campion, Esq., Denny Park, were a number of well-grown plants and excellent blooms: many of the latter would have done credit in any winning stand of cut blooms. The latter exhibitor took 1st for an excellent group in the 2d division, having a central plant of Julia La Graviere that was very conspicuous in its position—the 2d prize going to another lively group, from Mr. Wallis, Esq., J.P., Preston Park (Mr. Hill, gr.). For six standards, which appeared to be a favourite style at this show, and were a most prominent feature, the 1st prize was won by Mr. Rolfe, gr. to A. G. Uttermore, Esq., Patching, for a set of well grown and uniform plants, on stems about 2½ feet high, representing about half a globe in outline, and a decided improvement on the usually seen plants in this style. His best kinds were Mrs. Dixon, Fair Maid of Guernsey, Mrs. G. Rundle, and Peter the Great; Mr. Hill taking 2d, with another good half dozen. For four standards the latter exhibitor took the 1st award, with rather smaller plants. For dwarfs there was not any great competition. For both six and four Mr. Meachen, gr. to C. Armstrong, Esq., Withdeane, was placed 1st, with neat plants, not large, but well bloomed, and flowers of good quality. The 2d, for four plants, was taken by Mr. Fleet, gr. to R. Streatfield, Esq., Uckfield, with Japanese varieties. The classes for pompons did not bring forth any competition, but this deficiency was amply made up for by a splendid group staged by Mr. Balchin, Hassocks and Brighton Nurseries. This excellent lot of plants consisted of some two dozen splendid standards and several dwarf grown plants of the best kinds, conspicuous amongst which was a beautiful plant of Mrs. G. Rundle, some 5 feet in diameter, and furnished with an abundance of well formed flowers. The same exhibitor also staged five stands of first-class cut blooms of incurved, Anemone-flowered, and Japanese varieties. Among incurved kinds the best were White Venus, Eve, Bendigo, Golden Empress, and Barbara; of Anemone-flowered, Lady Margaret, Fleur de Marie, Empress, Acquisition, and King of Anemones; and of Japanese varieties, which were a grand lot, the best were Criterion, Boule d'Or, Margot, Dr. Macary, Madame Deville, and Thunberg—these would have stood in the front rank in any competing stand. In the large class for forty-eight cut blooms (equal numbers each of incurved and Japanese) the 1st prize was won by Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Mitcham, with a set in every sense first-class, comprising an excellent variation of colour that enhanced their otherwise good qualities. Of incurved kinds he had grand blooms of Empress of India (a perfect specimen), Hero of Stoke Newington, Golden Queen, Lord Alcester (very fine), Alfred Salter, Golden Empress, Queen of England, Yellow Perfection, Bendigo, Barbara, Princess of Wales, and Mrs. G. Rundle; his best Japanese were Thunberg (a splendid bloom), Mdlle. Lacroix, Comte de Germiny, J. Delaux, Grandiflorum, Duchess of Albany, Fanny Boucharlet (fine), Criterion, Album-plenum, and Hiver Fleur. This was throughout an admirable collection. The 2d prize in the same class was won by Mr. Penfold, gr. to Sir F. Fitzwigram, Bart., M.P., of Leigh Park, Havant, the specimens in this exhibit were scarcely so even, and some of the flowers were somewhat too far advanced, there were, however, splendid examples of Golden Empress (an extraordinary bloom), Mrs. Haliburton, Novelty, Empress of India, and Miss Mary Morgan among the incurveds, and of Striatum (very fine), Boule d'Or, Elaine, Comte de Germiny, Wizard, and Fulton from his Japanese kinds. The 3d prize went to Mr. Hopkins, gr. to R. Thornton, Esq., High Cross, Sussex, who had Thunberg (Japanese), very fine, also Prince and Princess of Wales (incurved), both good. For twenty-four incurved blooms, Mr. Gore, gr. to Captain Taylor, Hastings, was 1st, with a compact lot of blooms, Emily Dale, Barbara, and Eve, being all that could be desired; 2d, Mr. Russell, gr. to Dr. C. F. Lewis, Henfield, in whôse lot Refulgence, Lord Wolseley, and Lady Hardinge, were conspicuous. For twelve incurved kinds, Mr. Taylor was again 1st, having another fine bloom of Emily Dale and Virgin Queen, a first-class flower, Mr. Russell following as before. For twenty-four Japanese kinds, Mr. Elphick, gr. to J. Clutton, Esq., Reigate, was 1st, with fine flowers of Agrements de la Nature, Peter the Great, Mons. Lemoine, and Album-plenum; the 2d award going to Mr. Gore, who had Mdme. C. Andiguier, Sarnia and Grandiflorum, all good blooms. Mr. Penfold taking 1st for twelve varieties of the same type with good blooms of sports already named, Mr. Russell following him closely. For six Anemone-flowered varieties, Mr. Goode, gr. to G. Stone, Esq., Redhill, was 1st, with fine blooms among others of Acquisition and Prince of Anemones. Classes were provided for blooms of incurved and Japanese varieties, cut with not less than 6 inches of clear stem: this struck us as a capital way in which to show cut blooms, a pleasing effect being thus produced besides being somewhat of a novelty as well, the foliage thus gained adding materially to the display of the blooms themselves. Mr. Penfold took 1st in the class thus provided for incurved varieties, and also in that for Japanese kinds. Mr. Jupp, gr. to G. Boulton, Esq., Eastbourne, was 1st for twelve kinds of pompons, amongst which Golden Madame Marthe was noteworthy. For a table bouquet of Chrysanthemums, Mr. Bunney was 1st, with an excellent arrangement; the 2d going to Mr. Miller, of Shoreham, who also had a capital example. In the second division of cut blooms, open to gardeners and amateurs only, Mr. Gore took 1st for twenty-four fine blooms (equal of incurved and Japanese), the latter being very fine; Mr. Russell following, a very close 2d; and Mr. Hewitt, Field House, Rottingdean, also a very near 3d—in fact there was little to choose between the collections. In the class for twelve incurved, Mr. Goode was 1st, and in that for the same number of Japanese, Mr. Russell again won. All the classes in this division brought out an abundant competition in nearly every case. Special prizes were offered for twelve Chrysanthemums in 6-inch pots, and some very neat and well grown plants were shown, Mr. Spottiswoode and Mr. Bunney being the chief prize-takers.

FRUIT.—Classes were likewise provided for Grapes, Pears, Apples, and vegetables, and the exhibits were in nearly every case of first-rate quality. For white Grapes, Mr. Spottiswoode won in each class with Muscat of Alexandria, and again in one class for blacks with Alicante, the other 1st for black Grapes going to Mr. Buxton, gr. to J. Butler, Esq., Withdeane. Some of the samples shown in these classes bore evidence of having been ripe for some time. For four dishes of dessert Pears, Mr. Duncan, gr. to C. Lucas, Esq., Warnham Court, was 1st, with first-rate samples of Doyenné du Comice, Conseiller de la Cour, Beurré Diel, and Baronne de Mello; Mr. Ford, of Leonard's Lee, taking 2d, Durondeau and Marie Louise being both very fine. For four kinds of dessert Apples, Lieut.-Colonel C. B. Cave was 1st, with fine fruit of Adam's Pearmain, Omar Pacha, Cox's Orange, and Blenheim; and Mr. Duncan the 2d, having King of the Pippins and Ribston Pippin, both good. For culinary Pears, Mr. Ford was 1st, with grand fruit of Uvedale's St. Germain, and Mr. Bunney with similar fruit of Catillac. Mr. Ford again won 1st with culinary Apples, having Mère de Ménage, Blenheim, and Hollandbury, each kind making a fine dish; Mr. Standing coming 2d with Shepherd's Fame, of extra size, also a fine dish of the old Russet.

VEGETABLES formed a strong class, the samples in each collection being of a high order of merit, Mr. Duncan takiag 1st, having strong points in Brussels Sprouts and Tomatos; Mr. Manton, of Hurstpierpoint coming 2d, and showing fine Long Surrey Carrots and Parsnips; Mr. Bunney being 3d, with extra fine Onions and Veitch's Autumn Giant Cauliflowers: but a few points separated the latter lots from the first, so close were they to each other. In the competition for Messrs. Sutton's prizes for Potatos some fine samples were shown by Mr. Manton, taking 1st, having Reading Russet and Schoolmaster, with four other kinds, very good; 2d, to Mr. May, of Littlehampton, in whose lot Sutton's Prize-taker was prominent.

In MISCELLANEOUS CLASSES for plants there were fine Primulas (doubles) from Mr. Manton, that took 1st in their class; Mr. Godby, of Burgess Hill, following 2d, with singles and doubles. Some very pretty table plants were arranged between the cut blooms of Chrysanthemums, Mr. Turner winning 1st for six, arranged so as to form three pairs, being two Crotons, two Dracænas, and two Palms; a very pretty 2d prize lot coming from Mr. Spottiswoode. Cyclamens were hardly sufficiently advanced, but were well grown plants. Around the orchestra Mr. George Miles, Victoria Nursery, Brighton, arranged an effective group of Chrysanthemums, that formed a capital background to the platform. *H.*

Kingston and Surbiton Chrysanthemum Society.—The eighth annual exhibition of this Society took place in the Drill Hall, Kingston, on Tuesday and Wednesday, November 11 and 12. The exhibits all round were exceptionally fine, and the Society is to be congratulated for having provided such a substantial treat to visitors. The view of the show, as seen from the gallery, presented an unusually attractive appearance—the groups of miscellaneous plants and Chrysanthemums staged round the outer part of the hall having a most pleasing effect, and forming a striking background to the exhibits of cut blooms, which were staged principally on three large tables running down the centre of the hall. These again were tastefully arranged, as the plants for table decoration, berry-bearing plants, Primulas, Cyclamens, &c., were exhibited on a small raised platform running down the centre of each table, relieving the monotony of the large exhibits of cut blooms effectually. Three tables were devoted to miscellaneous exhibits, amongst which we noticed some nice epergnes of cut blooms, bouquets of Chrysanthemums and buttonhole bouquets. Messrs. T. Jackson & Son, nurserymen, Kingston, exhibited four stands and two baskets of excellent Grapes; and Mr. W. Bates, gr. to J. E. Meek, Esq., Poulet Lodge, Twickenham, showed six nice dishes of fruit, consisting of a Charlotte Rothschild Pine-apple, Black Alicante and Muscat of Alexandria Grapes, two dishes of Pears and one of Apples. For the best group of miscellaneous plants arranged for effect Mr. T. A. Glover, gr. to W. Erill, Esq., Worcester Park, was 1st, with a remarkably well arranged lot of the usual varieties of decorative plants; Mr. C. Attril, Bank Grove Gardens, Kingston, 2d; and Mr. J. Martin, gr. to J. Fforde, Esq., Elm Lodge, Surbiton Hill, 3d. For the best collection of Chrysanthemums in pots, arranged for effect, Mr. C. Orchard, gr. to J. Galsworthy, Coombe Warren, Kingston, was 1st, with a telling lot of nice dwarf well-bloomed plants, with grand foliage; Mr. J. Buss, gr. to A. S. Price, Esq., Park Side, Ewell, 2d; Mr. W. Burns, gr. to H. A. Rigg, Esq., Wykeham Lodge, Hersham, 3d; Mr. T. A. Glover 4th, and Mr. J. Lyne, Wimbledon, extra. For six incurved specimen plants with single stems, distinct, Mr. G. King, gr. to R. Few, Esq., Wolsey Grange, Esher, was 1st, with grand examples of Prince of Wales, Mrs. Dixon, Mrs. Glenny, Lady Hardinge, Lord Wolseley, and Mrs. Halliburton, fine plants, well bloomed; Mr. J. Sallows, gr. to J. J Flack, Esq., Hampton Road, Twickenham, 2d; and Mr. R. Watson, gr. to D. Macrostie, Esq., Eden Street, Kingston, 3d. For three ditto, Mr. Trussler, gr. to J. Shand, Esq., Fullbrooks, Old Malden, was 1st; and Mr. R. Caute, gr. to J. P. Robinson, Esq., Brookleigh, Esher, 2d. For three specimen standards of incurved varieties, Mr. R. Caute was 1st, with grand plants of Prince of Wales, Mrs. G. Rundle, and Mrs. Dixon; Mr. H. Trussler 2d, and Mr. J. Sallows 3d. For three specimen Japanese plants, Mr. G. King was 1st, with splendid plants of La Nymphe, Safrano, and Bouquet Fait; Mr. H. Trussler 2d, Mr. J. Sallows 3d, and Mr. C. Orchard extra. For six specimen plants (single stems), pompons, Mr. J. Lyne was 1st, his best being St. Thais, Rosinante, St. Michael, and White Cedo Nulli; Mr. R. Watson 2d, Mr. J. Child, gr. to Mrs. Slade, Claygate, and Mr. J. Martin equal 3d. For the best three standard pompons, Mr. J. Lyne was 1st; and for the best single trained specimen pompon Mr. J. Child was 1st, with a fine plant of Miss Wheeler; Mr. R. Watson 2d, and Mr. J. Lyne 3d. For the best nine plants for table decoration, Mr. J. Lyne was 1st, Mr. W. Bates 2d, and Mr. J. R. Chard, Floral Depôt, Clapham Common, 3d. For the best six ditto, Mr. G. King was 1st; and for the best six Cyclamens, Mr. J. Wiggins.

The competition for the Champion Vase, always one of the most interesting in the kingdom, with cut blooms, lacked no interest this year. The present is the third challenge vase offered, the first having, after a long tussle, fallen into the possession of Mr. Harding, of Roehampton. The second one soon found an owner, as Mr. Molyneux, the champion Hampshire grower, and gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, took it off two years in succession, and now this year the same famous grower has taken possession, for one year at least, of the new cup, which is a large and handsome silver bowl—quite a splendid trophy in its way. There were in the class, which requires twenty-four incurved flowers and twenty-four Japanese, four competitors; but the contest—a keen one certainly, taking five judges to decide upon, and nearly an hour of time—laid between Mr. Molyneux and Mr. Gibson, gr. to J. Wormold, Esq., Morden Park, Mitcham. The former had the best incurved flowers by some twenty points, whilst the latter had rather the best Japanese. Mr. J. Himmell, gr. to F. A. Davis, Esq., President of the Society, was placed 3d; and Mr. Macpherson, gr. to S. Page, Esq., Surbiton, 4th. Amongst the best flowers shown in the class were, of incurved:—Lord Alcester, Golden Empress, Empress of India, Prince of Wales, Cherub, Baron Beust, Jeanne d'Arc, Jardin des Plantes, Alfred Salter, John Salter, Bendigo, Mrs. Heale, Queen of England, and Refulgence. Of Japanese, very fine were Mons. Ardene, Thunberg, Baron de Prailly, Garnet, Album-striatum, Album-plenum, J. Delaux, or F. A. Davis (the most prominent dark flower in all the stands), Madame Andiguier, Criterion, Mdlle. Lacroix, and Japonaise. Only three lots of twenty-four incurved flowers were staged, Mr. Molyneux being again a good 1st, with some superb clean flowers; Mr. Woodgate, gr. to Lord Wolverton, Kingston Hill, was

2d; and Mr. D. Powell, Powderham Castle, Devon, was placed 4th, the 3d prize being withheld. His blooms were far below the metropolitan standard. Amongst good blooms in this class were—Mr. Horne, Lord Wolseley, Princess Beatrice, Hero of Stoke Newington, Novelty, Beverley, and Mr. Brunless, with others previously named. No less than twelve dozens of incurved blooms were staged, making a brave show, and comprising a fresh lot of exhibitors. Here Mr. J. Strong, Thames Street, Weybridge, was 1st with a capital lot of blooms of well known kinds. Mr. E. Coombs, gr. to F. A. Browne, Esq., Teddington, was 2d; Mr. W. Fyfe, gr. to W. F. Dick, Esq., Thames Ditton, was 3d; and Mr. Stephenson, Teddington, was 4th. The class for six incurved blooms was also well filled. Then with six incurved, of one kind, Mr. Molyneux was an easy 1st, with grand blooms of Princess of Wales; Mr. J. Strong coming next with good Queen of England; and Mr. G. King, gr. to R. Fewe, Esq., Esher, with Golden Empress. Turning now to the beautiful Japanese section, the class for twenty-four blooms included eight lots—a grand floor of flowers. Here local exhibitors held their own, the 1st place being taken by Mr. G. King; Mr. J. Child, gr. to Mrs. Slade, Claygate, came 2d; Mr. Woodgate 3d, and Mr. Bates, gr. to J. Meek, Esq., Poulett Lodge, Twickenham, 4th. Very fine indeed in this class were Mons. Burnet, Mdlle. Lacroix, Marguerite Marrouch, F. A. Davis, Triomphe de la Rue de Châtelet, Madame C. Andiguier, Balmorean, Fanny Boucharlet, Mons. Delaux, Hiver Fleur, Soleil Levant, Père Delaux, and Magnum Bonum. The class for twelve Japanese produced eleven lots, and was again a grand lot of blooms, the prizes falling chiefly to previous named exhibitors. The class for six blooms of one kind of Japanese brought ten lots, of which seven were of Madame C. Andiguier, but the 1st prize was taken with grand blooms of F. A. Davis, shown by Mr. Fyfe, Mr. Woodgate coming 2d, with excellent Madame C. Andiguier; Mdlle. Lacroix coming 3d. Some large blooms of Thunberg were also shown. With reflexed flowers Mr. Molyneux was again well 1st, his dozen blooms being exceptionally fine. These, permitting duplicates, comprised King of Crimsons, Golden and Pink Christine, Mrs. Forsyth, Cloth of Gold, and Phidias. Mr. C. Slade, gr. to Lady Bowater, Richmond Park, and Mr. J. Child were 2d and 3d in this class, both having some capital blooms. The Anemones were again a strong class, eleven dozens being staged, but Mr. Molyneux was an easy winner again, with grand flowers, including such Japanese kinds as Mdlle. Cabrol, Fabias de Maderanaz, Fleur de Marie, Dorothée de Souille, Mrs. Pethers, and Lady Margaret. Mr. Stephenson who was 2d, had some fine blooms of Empress, King of Anemones, and Georges Sand. Mr. Gibson was 3d. With twelve pompons, again Mr. Molyneux was 1st, having fine selected blooms in trebles of Marabout, Madame Marthe, and Eldorado, Rose d'Amour, St. Michael, Toussaint, Mauriossett, Pygmalion. Mr. W. Clarke, gr. to A. Nagle, Esq., Kingston, was 2d; and Mr. Lyne 3d, these showing bunches rather than selected blooms. Finally, the last principal class was the pompon Anemones, Mr. W. Furze, Teddington, coming 1st, with some charming flowers; Mr. Molyneux was 2d; and Mr. Lyne 3d. Of the best were Antonius, Mr. Wyness, Marie Stuart, Mr. Astie, and Madame Montels. All the smaller classes for cut blooms were well filled.

Certificates of Merit were awarded to Beauté des Jardins, a medium-sized, but elegant tasselled flower of a rich purplish-magenta hue, that should make it exceedingly popular; to Val d'Andorre, a large, but full flower, petals narrow and rather straight, of reddish-buff hue; and to Flamme du Punch, a loose petalled kind, of a soft silky buff colour. These were shown by Messrs. Jackson & Sons.

Cheshunt Chrysanthemum.—The first exhibition of this Society was opened under circumstances of great promise in St. Mary's Hall, Cheshunt, on Friday, November 7. The President is the Right Hon. Viscount Grimston, and the energetic committee have the advantage of the matured experience of Mr. George Paul, of the Old Nurseries, Cheshunt. Besides the prizes offered for Chrysanthemums, Cyclamens, Chinese Primulas, fruit and vegetables were included in the schedule. It was pleasing also to see that cottagers of Cheshunt parish were asked to compete with vegetable products of their gardens, substantial prizes being offered. A leading feature of the exhibition was the prizes offered for a group of Chrysanthemums in pots. There were three competitors, by far the best being that of Robt. Ewing, Esq., Burton Grange (gr. Mr. Bettisworth). The plants had been grown in a natural manner, were in excellent condition, and the flowers were of superb quality. In the class for twenty-four blooms, twelve of them to be incurved and twelve Japanese, the same exhibitor easily held the 1st place; the flowers had not been dressed or manipulated in any way; but the whole of them were very fine in size and quality; they were fit to hold a leading place in any exhibition in England. Of Golden John Salter no finer bloom has ever been grown. Bendigo, a sport from Eve, yellow, was very fine. Emily Dale, Golden Empress of India, Empress of India, and Princess of Wales were fine. In Japanese Soleil Levant, Elaine, Grandiflorum, Flambeau, and Peter the Great were the best. Mr. Ewing was a leading prize-taker in most of the classes, his blooms throughout giving evidence of skilful cultivation. His reflexed varieties, and also the large-flowered Anemones, were not anything behind the other kinds in quality. Of the former the old Dr. Sharpe, crimson, and the much older Cloth of Gold were very beautiful, add to these King of Crimsons, and we have a trio of the best reflexed kinds. The Anemones included in their number Madame Cabrol, a distinct and very beautiful kind, of a purplish-blush colour; the pure white Fleur de Marie, Mrs. Pethers, Prince of Anemones, Madame Godereau, Gluck, and Acquisition. James Warren, Esq. Capel House, Waltham Cross (Mr. Green, gr.), gained a 1st prize with six beautiful blooms of the golden-yellow Gluck. The same exhibitor likewise gained a 1st prize in a good competition for six Japanese. He had good blooms of Elaine, Source d'Or, one of the best; Mons. Lemoine, James Salter, Agrements de la Nature, and Chinaman. J. W. Carlile, Pondsborn (J. Pringle, gr.), was successful in taking the 1st prize for six incurved blooms with a good stand. Before passing from the Chrysanthemums a word of praise must be given to Mr. Ewing for his six large-flowering specimen plants. They had been allowed to grow in their own way, but formed handsome heads of large well formed blooms.

Miscellaneous Plants, comprising Heaths, Calanthe Veitchii, Ferns, &c., well grown, were sent from the last-named exhibitor, and a collection scarcely inferior from W. G. Rowlett, Esq. (gr., Mr. P. Perry). In this group was a nice flowering plant of Odontoglossum crispum. Chinese Primulas were wonderfully fine, the best being from A. C. Crocker, Esq. (Mr. Dudley, gr.), Wormley, Bury. H. J. Bushby, Esq. (Mr. Stratford, gr.), was 2d, with a fine group, composed entirely of Swanley Red. Mr. Warren gained a 1st prize with excellent Mrs. Pince's Grapes, Mr. Ewing being awarded 1st prizes for his Apples and Pears.

Besides the ordinary exhibits, Messrs. Paul, of Cheshunt, sent, not for competition, excellent examples of incurved and Japanese Chrysanthemums, the latter being very fine. The best were F. A. Davis, Thunberg, Safranot, Harlequin, Source d'Or, Rubrum striatum, La Cossack, Bouquet Fait, Madame Lacroix, Henri Jacotot, Mons. Astorg, M. Delaux, &c. A box of Bendigo was fine in the incurved section. The same firm also decorated the orchestra with flowering and foliaged plants; conspicuous amongst the former were some excellent Cyclamens. A large pure white variety of the giganteum type was well worthy of the varietal name of Joseph Chamberlain. Tea Roses Niphetos, fine white, and Sunset, the colour of Madame Falcot, were very fine; the latter is a sport from Perles des Jardins, consequently it is a full Madame Falcot. Dwarf Carnations of the perpetual flowering type, Madame Carle, pure white, and Bernhardt bright red, with a reddish-violet flake, were very pretty in the group.

Mr. J. W. Springhett, Holly Nursery, Hammond Street, Cheshunt, also exhibited, not for competition, two stands of Japanese varieties, comprising the best of the old and new kinds; they were well grown and neatly set up. Album plenum, fine white; Margot, distinct rose; and Hiver Fleur were conspicuous.

It would take too much space to give the names of all the prizetakers, and the vegetables must also be omitted, with the remark that the collection sent by Mr. Rowlett's gardener was fine, especially the dish of autumn Broccoli.

Stoke Newington Chrysanthemum.—The annual exhibition in connection with the above Society was held in the Assembly Rooms, Stoke Newington, on Monday and Tuesday, November 10 and 11, and must be considered a great success. The committee must have taxed their ingenuity to the utmost to arrange the numerous exhibits in the manner they did in the space allotted to them. The exhibits, taking them all round, were highly creditable, some of them especially so; for instance, the splendid specimen plants exhibited by Mr. Monk, gr. to W. Fowler, Esq.; the incurved bloom by Mr. Udall, Shirecliffe Hall, Sheffield, for which he received the Silver Cup for the best twenty-four in the show; and the Japanese blooms by Mr. Calvert, gr. to G. Kent, Esq., Southwood, Highgate. A miscellaneous collection of choice fruits, baskets of flowers, bridal and other bouquets, and a wreath, cross, and anchor of white flowers, exhibited by Mr. J. Smith, Stoke Newington (not for competition) were also greatly admired, and imparted a pleasing variety to the exhibition. For the best collection of nine large-flowering Chrysanthemnms in pots, Mr. Monk, gr. to W. Fowler, Esq., Forest House, Leytonstone, was 1st, with exceedingly fine plants of the following varieties:—Peter the Great, La Charmeuse, Mons. C. Hubert, Dr. Sharpe, Mrs. G. Rundle, To Kio, Sœur Melanie, Cossack, and La Nymphe. Mr. Payne, gr. to C. Paine, Esq., Cedar House, Stamford Hill, was 2d; and Mr. Archer, gr. to J. Griffiths, Esq., The Grange, Highbury, was 3d. For six and four plants respectively, Mr. Monk was also 1st, staging splendid stuff; also for four standards, Mr. Monk was 1st, but Mr. Archer ran him very close in this class. For three plants in pots, for those who have never before taken a prize for Chrysanthemum plants, J. Evans, Esq., Fernside, Stamford Hill, was 1st; amongst his three was a fine well grown plant of Peter the Great. For the best six specimens, pompons, in pots, Mr. Payne was 1st. For the best four specimen and best four standard pompons, respectively, Mr. Gilbey, gr. to B. Booth, Esq., The Cazenoves, Upper Clapton, was 1st. Mr. Archer was 1st for the best six foliage plants, having a nice Areca lutescens, Pandanus Veitchii, and Dicksonia antarctica. For the best six plants for table plants, Mr. Gilbey, Mr. Archer, and Mr. Payne, were respectively 1st, 2d, and 3d, with nice clean stuff. In the open class for twenty-four incurved blooms, distinct, Mr. J. Udall was justly 1st, staging fine examples of A. Salter, White Princess, Empress of India, Nil Desperandum, Refulgens, Golden Jardin des Plantes, Plenipo, Isabella Bott, John Salter, Golden Empress, Prince Alfred, Mrs. Rundle, and others; Mr. Monk was 2d, and Mr. Calvert, gr. to G. Kent, Esq., Southwood, Highgate, was 3d. For the best twelve incurved blooms Mr. Calvert was 1st, Mr. Udall 2d, and Mr. Chalkley, gr. to J. R. Droop, Esq., Stamford Hill, 3d. For the best six blooms, distinct, for those who have not taken a prize for cut Chrysanthemums before, Mr. Smith, gr. to S. Gardner, Esq., Spring Hill, Upper Clapton, was 1st; Mr. Francis, gr. to G. Mumford, Esq., Homeleigh, Stamford Hill, 2d; and Mr. Harding, gr. to F. Wright, Esq., Rosslyn, Stamford Hill, 3d. For the best twelve Anemone blooms, Mr. Harding was 1st; Mr. R. W. Wright, Darnley Road, Hackney, 2d; and Mr. Osborne, gr. to W. S. Girdner, Esq., Lawn House, Stamford Hill, 3d. For the best twelve Anemone pompons.—Mr. Smith, gr. to S. Gardner, Esq., Spring Hill, Upper Clapton, was 1st; Mr. R. Wright was 2d, and Mr. Chalkley 3d. For the best twelve Japanese blooms, distinct.—Mr. Calvert was 1st, with fine examples of the following:—Mr. Barnes, Père Delaux, Fair Maid of Guernsey, Cry Kang, La Rouge, Peter the Great, and others; Mr. Gilbey 2d, and Mr. Monk 3d. For the best six Japanese blooms.—Mr. J. Westwood, The Lake, Shuresbrook, was 1st; Mr. Cooper, gr. to J. Johnston, Elm Field, Upper Clapton, 2d; and Mrs. Harding 3d—a very close competition. In the classes for the district, for twenty-four incurved blooms, Mr. Gilbey and Mr. Langdon, gr. to Messrs. Monroe & Morris, Brook House, Clapton, were equal 1sts, with fine even lots of well-known varieties; Mr. Payne being 3d. For the best twelve incurved blooms Mr. Martin, gr. to H. Matthew, Esq., The Cedars, Woodberry Down, Finsbury Park, was 1st; Mr. Cooper 2d, and Mrs. Smith 3d; and for the best six ditto, Mr. Langdon was 1st, Mr. Cooper 2d, and Mr. Payne 3d. The next three classes for amateurs who do not keep a regular gardener, were well represented. For twelve incurved blooms, distinct, Mr. F. Bingham, 22, Manor Road, Stoke Newington, was 1st; Mr. W. Goldsmith, Grove Road, Stamford Hill, 2d; and Mr. F. France, 82, Park Road, Crouch End, Hornsey, 3d. Mr. F. Bingham was also 1st for the best six incurved blooms; Mr. White, Evering Road, Clapton, 2d; and Mr. C. Handley, Elms, High Street, Stoke Newington, 3d. Mr. Goldsmith was 1st for the best six Japanese, Mr. White 2d, and Mr. Handley 3d.

Putney and District Chrysanthemum: *Nov.* 11.—This is a well-known Society, and for years past has held an exhibition of Chrysanthemums in the South-Western District. This, for a small exhibition, was one of the most charming one would well wish to look upon, for plants and cut flowers alike were very good; but the Assembly Rooms, near the South-Western Station, are altogether inadequate for such a purpose; for when the plants, &c., were staged, but little space remained for locomotion. Some of the plants had to be put away into small side galleries inaccessible to visitors, and particulars of the awards could only be ascertained by clambering over specimens, to their risk of injury. It is beyond our power to give a thoroughly correct prize list.

Plants.—Groups of Chrysanthemums were a leading feature, and they were well done. A collection of some thirty plants or so, on straight stems, set up by Mr. C. W. Knowles, gr. to G. M. Attenden, Esq., Solina, Putney Park, were well grown and had magnificent heads of bloom; at the back were Japanese varieties, and in the front incurved types; they were splendidly grown and bloomed, and the exhibitor deserves the highest credit. Mr. A. Newell, gr. to Sir Edwin Saunders, Fairlawn, Parkside, Wimbledon, was 2d, with a good lot also; Mr. J. Carter, gr. to H. J. Parry, Esq., Heatheside, Wimbledon, being 3d; and Mr. G. Stevens, St. John's Nursery, Putney, 4th, None of the plants were named, but the collection included leading varieties in the incurved and Japanese sections. In the amateurs' class for a smaller group Miss Toppin, Brierley, Upper Richmond Road, Putney, was 1st, with both Japanese and incurved, and very good they were; J. Pepper, Esq., East Lodge, Putney, was 2d; and W. Dumper, Esq., St. John's Road, Putney, 3d. It must be admitted that Chrysanthemum plants are well grown in the district.

Trained Specimens were of medium size, but well grown and flowered. Mr. J. Bentley, gr. to Sir Thomas Gabriel, Bart., Edgcombe Hill, Wimbledon, was 1st, with four specimens, having Lady Slade, Mrs. Dixon, Dr. Sharpe, and Mrs. Halliburton; 2d, Mr. C. W. Knowles, with Mrs. Dixon, Mr. G. Rundle, Prince of Wales, and George Glenny; 3d, Mr. J. Tyte, gr. to Mrs. Reed, Heathercroft, Putney. Mr. Bentley appeared to be the only exhibitor of two plants, having Dr. Macary and Elaine, both Japanese. The best specimen standard large flowering was Mrs. Dixon, but the name of the exhibitor did not transpire; Mr. Bentley was 2d, with George Glenny; Mr. J. Tyte being 3d. The latter had the best four pompons, staging well grown and flowered plants of Minnie Warren, Mdlle. Marthe, Golden Mdlle. Marthe, and Liliputienne; 2d, Mr. Bentley, with President, St. Michael, Mdlle. Marthe, and Dick Turpin; 3d, J. Burt, Esq. Mr. Tyte had the best pan of pompons, staging admirable plants of St. Michael and Salamon; Mr. Bentley was 2d, with Mdlle. Marthe and President; Mr. J. Smollett being 3d. The best specimen pompon was St. Michael, from Mr. Tyte, a plant fully 5 feet through, and grandly grown and flowered; Mr. Smollett, gr. to Mrs. Roberts, Putney Park Lodge being 2d, with a huge plant of Perle pompon; and Mr. C. Bentley, gr. to J. C. Baring, Esq., M.P., Wimbledon, 3d, with President. Mr. Tyte had the best standard pompon, staging St. Michael.

Cut Flowers.—These were both numerous and good. In the class for twenty-four incurved flowers Mr. M. Sullivan was 1st, with admirable blooms of Empress of India, Lord Wolseley, Jeanne d'Arc, White Globe,

Queen of England, Mrs. Shipman, Empress Eugénie, Lady Hardinge, Orange Perfection, Lady Slade, Mabel Ward, Mr. Corbay, Golden Queen of England, Mr. Bunn, John Salter, Beauty, Princess Beatrice, George Glenny, Golden Empress, and others; 2d, Mr. A. Holmes, gr. to A. B. Hill, Esq., Clapham Park, with a collection only just inferior; 3d, Mr. J. Bentley. Mr. W. Smith, gr. to J. F. Schwann, Esq., Oakfield, Wimbledon Park, had the best twelve blooms, staging fine examples of Prince of Wales, Princess of Wales, Lord Wolseley, Mr. Bunn, Nil Desperandum, Prince Alfred, John Salter, Jardin des Plantes, Refulgens, Mrs. Halliburton, Venus, and Mrs. G. Rundle; 2d, Mr. C. Bentley, with Prince Alfred, Empress Eugénie, Prince of Wales, Queen of England, Mr. Brunlees, and others as good; 3d, Mr. J. C. Grant, gr. to J. Brunlees, Esq., Argyle Lodge, Wimbledon. The best six blooms of incurved varieties came from Mr. J. Bennett, gr. to F. Rodewald, Esq., Field House, Wimbledon, who had Empress Eugénie, Mabel Ward, Princess of Wales, Mr. Brunlees, Hero of Stoke Newington, and Lord Alcester; 2d, Mr. J. Bentley, with Golden Empress, Queen of England, White Venus, and Princess of Wales; 3d, Mr. J. C. Grant.

The large Anemone-flowered varieties were well shown, some of them very finely developed. Mr. M. Sullivan had the best six, staging Fabias de Maderanaz, Mons. Chate, Louis Bonamy, Gluck, very fine; Marguerite d'Anjou, and Empress. 2d, Mr. C. Bentley, with Georges Sand, Lady Margaret, Fleur de Marie, King of Anemones, Louis Bonamy, and Gluck. 3d Mr. J. Bennett. One very interesting class was for four Japanese, four incurved and four Anemone-flowered, and here Mr. G. House, gr. to B. Gray, Esq., Westcombe Lodge, Wimbledon, was 1st, with fine blooms of Elaine, Mons. Delaux, Comte de Germiny, and Madame C. Andiguier, Japanese; Queen of England, Prince Alfred, Empress Eugénie, and Golden Empress, incurved: King of Anemones, Lady Margaret, Fleur de Marie, and Prince of Anemones; 2d, Mr. J. Bennett; 3d, Mr. Sullivan. Japanes Chrysanthemums were shown in very fine condition, and they appeared to have a great attraction for visitors. Mr. Smith, gr. to J. F. Schwann, was 1st, with splendid blooms of Baronne de Prailly, Mons Delaux, Mons. Ardenne, Triomphe de la Rue des Châtelets, Madame Lacroix, Curiosity, Comte de Germiny, Mrs. Mahood, Thunberg, Val d'Andorre, Cry Kang, and F. A. Davis—the last in very fine condition; 2d, Mr. M. Sullivan, with Madame C. Andiguier, Triomphe de la Rue des Châtelets, Baronne de Prailly, François Delaux, Hiver Fleur, Triomphe du Nord, Perle des Blanches, Mons. Desbreux, Cry Kang, Meg Merrilies, and Marguerite Marrouch; 3d, Mr. House. The latter had the best six varieties, staging fine blooms of Comte de Germiny, Cry Kang, Elaine, Curiosity, Thunberg, and Fanny Boucharlet; 2d, Mr. M. Sullivan, with Triomphe de la Rue des Chatelets, Baronne de Prailly, Peter the Great, Mons. Desbreux, François Delaux, and Meg Merrilies; 3d, Mr. J. Bentley.

Pompons were also shown in remarkably good form. Mr. Moore, Richmond Nursery, Putney, was 1st, with twelve bunches, nine blooms in a bunch—very good indeed, but unnamed; 2d, Mr. J. Bennett, whose best varieties were Mr. Astie, Liliputienne, Mdlle. Marthe, Calliope, Brilliant, Antonius, Model of Perfection, Rosinante, and Cedo Nulli.

There were two classes for single-handed gardeners; one for twelve incurved blooms, and one for twelve Japanese. In the first of these Mr. J. Carter, gr. to H. J. Parry, Esq., was 1st; and Mr. W. Furze, Roselands, Teddington, 2d; 3d, Mr. J. Skeggs, gr. to J. Potter, Esq., West Hill, Putney. In that for twelve Japanese Mr. Furze was 1st, Mr. Carter 2d, and Mr. A. Jackson, Heathfield, Wandsworth, 3d. In these, and also in a few classes for amateurs, the blooms fell short of the quality of those in the open classes.

MISCELLANEOUS PLANTS.—There were a few classes for these, and as they were placed between the richly coloured groups of Chrysanthemums they materially helped to vary the effect. Mr. C. Bentley had the best four Ferns, staging good specimens of Gymnogramma ochracea, Davallia Mooreana, Adiantum formosum, and Neottopteris nidus; 2d, Mr. C. Woodham, gr. to R. Davis, Esq., Earlsfield, Wandsworth Common, who had Lomaria gibba, Gymnogramma ochracea, Adiantum formosum, and A. cuneatum. Mr. C. W. Knowles had the best four stove and greenhouse plants—Acalypha Macafieana, Dieffenbachia Bausei, Cissus discolor, and Maranta zebrina; 2d, Mr. M. Sullivan, who had Croton Weismanni, C. Disraeli, Anthurium crystallinum, and A. species; 3d, Mr. C. Woodham. Mr. C. Bentley had the most valuable as well as the best arranged group of mixed plants, consisting of Dracænas, Palms, Ferns, Crotons, Eucharis amazonica, Calanthes, Primulas, Bouvardias, &c. Messrs. Mahood & Sons also had a good group.

FRUIT.—The best three bunches of Black Grapes were Alicante, from Mr. R. Holmes, gr. to T. Wallis, Esq., Clapham Common; H. Richardson, Esq., Springfield Lodge, Putney, was 2d, with Black Hamburgh; Mr. C. W. Knowles being 3d with the same. Mr. Knowles had the best three bunches of white Grapes, staging Foster's Seedling; Mr. Bentley being 2d, with Muscat of Alexandria. The only exhibitor of Apples and Pears was Mr. J. Whitbread, who was 1st in each class for three dishes of dessert Apples, three of Pears, and three of kitchen Apples, all good, but unnamed.

VEGETABLES.—Mr. Coombes, gr. to Sir H. Meux, Bart., Sheen, had the best collection of vegetables—a very good lot indeed; Messrs. Tugwell & Son, Mortake, being 2d, also with good examples.

Zonal Pelargoniums, Primulas, table plants, and bouquets, were also shown, but nothing of a character to require special mention.

THE MANGO: ITS PROPAGATION AND IMPROVEMENT.

EUROPEANS have never thought of keeping and sowing the infinity of Mango-stones of the best kinds, but have invariably thrown them away as worthless. One might ask how did all these fine kinds of Mango come into existence? There is, in my opinion, no other way of explaining the phenomenon than by referring them all back through many ages to the wild kind, the Mangifera indica of botanists. Natives of course account for them much more simply, viz., by God's will.

The jungle Mango, bad as it is, is eaten by natives. They throw the seeds about, and in the rains a large number of them germinate. The native has a very tender feeling for any plant that bears fruit, however bad. In weeding he never attempts to uproot a Mango seedling, or any other fruit seedling, even if he found it in the midst of your choicest flower-beds. This feeling, and the ease with which the Mango-seed germinates in the rains; the turpentiny taste of the leaves; there being in the rains a lot of sweet herbage for the cattle to feed on, so that they would neglect the Mango seedlings; all give this tree a great advantage in its struggle for existence; so that man has been unconsciously sowing Mango seeds since the beginning of time, and thus new varieties in course of generations were created. As new and better varieties came to his notice he of course preferred them to the jungle kind, and went on for ages unconsciously selecting and sowing new kinds, until he learnt, by means of grafting, to propagate the very kind that most took his fancy, and so he multiplied the good kinds. When he wanted timber for his dwellings he naturally cut down the trees that he liked least—that is, those which produced inferior fruit; and so continued selecting, propagating, and reproducing by seed, until our present day, when we find hundreds of charming varieties of one of the finest fruits in the world. The native name of the Mango is Âm, which means provisions. This name shows that from time immemorial the fruit of the Mango has been used by natives as food. Even now, when Mangos are plentiful and cheap, natives almost live on them. For a native to eat fifty at a sitting is no uncommon thing.

Some time before I left Lucknow I had commenced sowing seeds of good kinds of Mangoes with the view of raising new varieties; and Mr. Ridley, in his Report for 1879—80, stated that of four seedlings which I had planted, and had been fruiting, one, which I had called *Runtra*, turned out good and well-flavoured, the other three were not worth keeping. Well, one in four is twenty-five per cent., and that is a very fair percentage for seedling fruit trees to turn out worth keeping. Some horticulturists would probably be satisfied with one in a thousand if that one turned out a treasure.

No real progress, however, can be expected in the creation of new and improved kinds without systematically planting seedlings of good kinds by thousands in orchards, or what natives call *baghs*. Then there would be a chance of a number of new and possibly startling varieties turning up. Attempting to produce new varieties by sowing seed on a small scale is likely to prove disappointing. The Mango seedling takes about seven or eight years to flower, so that, say within ten years, the result would be known. The Mango tree, although it may not produce first-class fruit, is by no means valueless; the fruit, even of the commonest kinds, is saleable, and often, though stringy, is very palatable. When of a certain age the tree can be sold for timber, which is universally used by natives for all purposes.

A correspondent of the *Bombay Gazette* states that Mango trees over 18 feet in circumference are not uncommon. Considering that the numerous splendid varieties we have could have originated from no other than the wild Mango there is no good reason for supposing that, starting from the seeds of the present good kinds, provided they are planted in sufficient numbers, still better varieties would be created. It should not, however, be hastily concluded that grand results can be obtained in a few years. It should be remembered that the present kinds, for all we know, may have taken hundreds, nay, thousands of generations, to bring to their present state of perfection, although probably it was all done by a natural and unconscious selection through the fondness of the natives for this tree, and probably also through its inherent fitness for the struggle of life. If planting good seed, and selection of the best for propagation, be done systematically and scientifically, there is no reason to believe that even one generation might not witness a vast number of additional superb varieties.

Judging from the multiplicity of aromas of which this fruit is capable, it may probably have a great future before it. The great want is late and early kinds. The Mango generally comes with a rush, and lasts for only a couple of months. Of very early kinds I think there are few; of late kinds I know only one called *Bhadanya*, which ripens its fruit towards the end of September.

Young Mango trees are liable to be killed or badly injured by frost. On the morning of January 8, 1874, when the temperature on the grass in Lucknow was 5° Fahr. below freezing-point, and when fifty Mango trees of the youngest were killed outright, and 325 more or less injured, this very *Bhadanya* stood the frost very much better than all the other kinds; so that it is evident there is much room for new kinds, especially hardy, late, and early varieties. In my experiments I found that grafts taken from old trees thrived badly, and many of them died, while of those taken from young trees very few died. For two or three years after the graft is separated from its parent it requires especial nursing.

I know of only two animals which are injurious to the Mango tree; one is the larva probably of some kind of beetle, which natives call *Macrora*. It burrows between the bark and the wood, and if not dug out will eventually kill the tree. The other is an underground rat. In its mining operations if it should come across the main root of a young Mango tree it does not hesitate to gnaw its way through it, and thus kill the tree.

I have lately made an attempt to set on foot an Imperial Mango Society for the whole of India. The objects of this Society would have been to obtain coloured drawings of all the cultivated varieties in the Indian empire, with the characteristic foliage of each, and with a letterpress description giving the average weight of each variety, its texture, flavour, &c., as also the average weight and size of the stone, and all information connected with the constitution of the particular variety, &c. Another object of this society would have been to form a Mango orchard on an extensive scale, in a favourable situation, for the purpose of collecting therein all the known cultivated varieties, propagating, studying, and classifying them; discovering and studying the diseases to which the tree is subject, and the insects that are injurious to it; for experimenting on it in various ways; for improving the fruit, and raising new kinds from seed; in short, for the purpose of making a complete, scientific, and exhaustive study of this interesting tree, and for discovering the most advantageous mode of cultivating it.

If this fruit has reached its present stage of perfection as if it were by natural selection only acting through the palate of man, one may fancy what fine things would be produced if the subject were taken up scientifically, with the direct object of improving and increasing the fine qualities of this fruit by bringing to bear on it, not only the selective power of man's palate, but all the scientific information that might be collected through observation and experiment, in addition to the knowledge that horticulturists already possess of man's power of creating new varieties by hybridisation.

Such a scheme would have been sufficiently ambitious, and such a monograph as I have here projected would have been a worthy contribution to the science and art of fruit culture. Unfortunately, however, it appears to be premature. The Mango is the only thing, it would appear, that natives take an interest in; nevertheless they do so, even the educated ones, only in so far as it is "something to eat." The scientific and the æsthetic stage of civilisation do not appear, as yet, to have dawned upon them; and without the co-operation of a large number of natives, both with their purse and their intelligent observation, such a scheme could not be carried out.

E. Bonavia, M.D., Etawah.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 12, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind. Average Direction.	Rainfall.
Nov	In.	In.	°	°	°	°	°	°			In.
6	29.83	+0.01	55.0	49.0	6.0	51.3	+ 6.2	50.1	95	E. : W.SW.	0.33
7	29.72	−0.08	60.0	44.0	16.0	51.3	+ 6.6	49.3	93	S.	0.08
8	30.16	+0.36	53.6	38.0	15.5	46.0	+ 1.7	40.0	81	W. SW	0.00
9	30.15	+0.35	54.2	14.5	9.7	50.0	+ 6.1	44.4	82	S.S.E.	0.03
10	30.35	+0.55	55.5	47.0	8.5	50.3	+ 6.8	47.2	92	E. N.E	0.00
11	30.07	+0.27	49.5	42.0	7.5	44.4	+ 1.2	42.7	95	E. N.E. : E.S.E.	0.00
12	30.12	+0.33	48.0	43.0	5.0	44.7	+ 1.8	39.2	82	E.S.E. : E. N.E.	0.00
Mean	30.06	+0.27	53.3	43.9	9.8	48.3	+ 4.3	44.7	88	E. N.E	0.44

Nov. 6.—Rain all morning, very dull day, fine clear night.
— 7.—Fine bright morning, rain in afternoon, fine clear night.
— 8.—Very fine day and night.
— 9.—Dull day and night
— 10.—Fine, dull day and night.
— 11.—Fine day, clear sky mostly; fine night, overcast.
— 12.—Fine day and night, overcast.

LONDON: *Atmospheric Pressure.*—During the week ending November 8, the reading of the barometer at the level of the sea decreased from 30.02 inches at the beginning of the week to 29.86 inches by 3 P.M. on the 2d, increased to 33.11 inches by 3 P.M. on the 3d, decreased to 29.83 inches by midnight on the 4th, increased to 30.06 inches by 9 A.M. on the 6th, decreased to 29.78 inches by 3 P.M. on the 7th, increased to 30.38 inches by 9 A.M. on the 8th, and was 30.33 inches by the end of the week.

The mean reading of the barometer for the week was 30.02 inches, being 0.04 inch higher than last week, and 0.05 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 60°, on the 2d and 7th, the highest on the 3d was 49°. The mean of the seven high day temperatures was 56°.

The lowest temperature was 36°, on the 4th; on the 5th the lowest temperature was 50°. The mean of the seven low night temperatures was 42°.6.

The greatest range of temperature in one day was 19°, on the 4th; the smallest range was 6°, on the 6th. The mean of the seven daily ranges was 13°.4.

The mean temperatures were — on November 2, 51°.6; on the 3d, 42°.3; on the 4th, 48°.2; on the 5th, 54°.4; on the 6th, 51°.3; on the 7th, 51°.3; on the 8th, 46°; and these were all above their averages by 5°.6, 5°.5, 2°.6, 9°, 6°.2, 6°.6, and 1°.7 respectively.

The mean temperature of the week was 49°.3, being 0°.8 higher than last week, and 5°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 104°, on the 7th. The mean of the seven readings was 92°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass was 26°.5, on the 4th. The mean of the seven readings was 34°.7.

Rain.—Rain fell on three days, to the amount of 0.67 inch, of which 0.26 inch fell on the 2d, 0.33 inch on the 6th, and 0.08 inch on the 7th.

ENGLAND: *Temperature.*—During the week ending November 8, the highest temperatures were 61°.5 at Brighton, 60°.7 at Cambridge, 60° at Blackheath; the highest at Bolton was 55°.8, at Liverpool 56°.3, and at Wolverhampton 57°.8. The general mean was 58°.4.

The lowest temperatures were 29°.3 at Wolverhampton, 29°.8 at Cambridge, and 32° at Truro; the lowest at Liverpool and Preston was 38°.5, at Bradford 37°.6. The general mean was 34°.5.

The greatest ranges were 30°.9 at Cambridge, 28°.5 at Wolverhampton, 26° at Truro; the smallest ranges were 17°.8 at Liverpool, 19°.5 at Preston, and 21°.2 at Bradford. The general mean was 23°.9.

The mean of the seven high day temperatures was highest at Plymouth, 56°.8, at Hull 56°.7, at Cambridge 56°.2; and was lowest at Preston, 52°.3, at Bolton 52°.6, and at Liverpool 52°.9 The general mean was 55°.

The mean of the seven low night temperatures was highest at Brighton, 45°, at Plymouth 44°.4, at Preston 43°.5; and was lowest at Wolverhampton, 37°.6, at Bolton 38°.8, and at Hull 40°.3. The general mean was 41°.8.

The mean daily range was greatest at Wolverhampton and Hull, 16°.4, at Cambridge 14°.4; and was least at Preston, 8°.8, at Brighton 11°.1, at Liverpool 11°.2. The general mean was 13°.2.

The mean temperature was highest at Plymouth, 50°, at Brighton 49°.9, at Blackheath 49°.3; and was lowest at Bolton 45°.1, at Wolverhampton 45°.2, and at Liverpool 46°.7. The general mean was 47°.8.

Rain.—The largest falls were 1.33 inch at Bristol, 0.94 inch at Truro, and 0.92 inch at Wolverhampton; the smallest falls were 0.22 inch at Brighton, 0.35 inch at Hull, and 0.43 inch at Cambridge. The general mean fall was 0.68 inch. Rain fell every day in the week at Truro.

SCOTLAND: *Temperature.*—During the week ending November 8, the highest temperature was 58°.6, at Aberdeen; at Dundee the highest was 55°. The general mean was 56°.4.

The lowest temperature in the week was 35°, at Perth; at Paisley the lowest temperature was 39°.3. The general mean was 37°.5.

The mean temperature was highest at Leith, 47°, and lowest at Dundee, 44°.7. The general mean was 46°.

Rain.—The largest fall was 2.77 inch, at Glasgow, and the smallest fall was 0.95 inch, at Leith. The general mean fall was 1.62 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to announce the death of Mr. OCTAVIAN BLEWITT, K.L., F.R.G.S., many years secretary of the Royal Literary Fund. He was born in 1803, in St. Helen's-place, Bishopsgate, where his father was settled as a merchant. Mr. Blewitt spent much of his early life in the medical profession, and was for some time engaged as tutor in classics to the son of Sir James Clark, the eminent physician. He subsequently travelled much in Italy, Egypt, Greece, Turkey, and other countries, and on his return to England was, in 1839, elected to the post of secretary to the Royal Literary Fund. In this capacity Mr. Blewitt spent many years in arranging the papers, literary, financial, and historical, which constituted the records of the association. In 1872, on the occasion of the King of the Belgians presiding over the anniversary of the Literary Fund, His Majesty testified his appreciation of the services of Mr. Blewitt by conferring upon him the Knighthood of the Order of Leopold. Mr. Blewitt was for many years editor of the newspaper portion of the *Gardeners' Chronicle*, and he was also the author of several well-known works, including, *The Panorama of Torquay*, published in 1828, and afterwards reprinted in an enlarged edition as *A Descriptive and Historical Sketch of the District comprised between the Dart and Teign*, also the *Handbook for Central Italy and Rome*, and the *Handbook for Southern Italy and Naples*, being two of the series of Murray's guide-books.

Enquiries.

"*He that questioneth much shall learn much.*"—BACON.

HIBISCUS HAGELONI.—What is the history of this plant? It is a lovely plant, but difficult to propagate by cuttings, and some seeds would not germinate, though apparently good. *R. T. C.*

Answers to Correspondents.

CALANTHE DISEASED: *B. B.* Next week.

CARNATION: *G. B. Charlton.* The colour is uncommon, but the flower is poor.

GRAPES DISEASED: *Hibernia.* The sample was badly shanked, which may be the consequence of unhealthy roots, from wet ill-drained borders, or from some previous over-cropping. The absence of healthy bloom on both, and the reddish tinge when they should be black, point to over-cropping, and possibly deficient ventilation.—*J. R.* There must be something wrong with the roots of your Vines. Or have noxious fumes gained access to them? You must examine the roots, as it is possible Phylloxera is present. Vines are hardy subjects, and do not readily succumb as yours appear to have done.

GRAPE LEAVES SPOTTED: *W. J. G.* It is an obscure fungus-growth of no account, quite accidental as to its appearance, and will probably not be seen another year. The germs of these things are constantly floating about, and when they meet with favouring conditions they mature themselves.

GREENHOUSES: *Scotland.* We do not know if Scottish law is different from English on this matter, but here no one may take away a wooden structure resting on a brick foundation to which it is fastened by metal ties, screws, bolts, &c., without incurring a penalty. Of course that may be set aside by covenant to the contrary.

HIBISCUS: *R. T. C.* Must have been mislaid.

INSECTS: *Scolopendrium.* Your plants are attacked below the crowns by the larvæ of the brown weevil (Otiorhynchus rugosus). The plants should be taken carefully out of the ground, and the earth finely sifted and burnt before replanting the specimens. *W.*

LAPAGERIA ALBA: *J. Rose.* A very fine spike indeed.

NAMES OF FRUIT: *J. Day.* 1, Blenheim Orange Pippin; 3, like Duchess of Oldenburg; 4, Blenheim Orange; 6, Reinette du Canada; 2 and 5, not recognised. Pear not known.—*Thomas W. Simpson.* Not known; similar in appearance to Golden Pearmain, but much sweeter than that variety. —*C. A. M. C.* We know of no other name of the Apple sent named Tamworth.—*M. J. P. Pears:* 1, Marie Louise; 2, Glou Morçeau. *Apples:* 3, Syke House Russet; 4, Pearson's Plate; 5, Flat Nonpareil; 6, King of the Pippins.

NAMES OF PLANTS: *W. T. Crouch.* 1, Vaccinium sp.? 2, Pyrus arbutifolia; 3, Myrica cerifera; 4, perhaps a Vaccinium—impossible to name from leaves only; 5, Leucothoe axillaris? 6, Spiræa prunifolia.—*Lymington.* Quercus rubra, the American Champion Oak; they are no larger than usual.—*G. Coleman.* Arundo donax.

ORCHIDS: *Peter Walker.* Cattleya labiata var.; Cymbidium Mastersii, poor var.

PEACH FOR FORCING: *J. Wallis.* The sort you name will do for early work. The early ripening Peaches are precisely the ones to start early, using, if you like, some late kind in the same house for a succession.

ROYAL ARMS: *Ignoramus.* No; not without a special licence, which is signed by the Comptroller of the Household.

TWIN CHRYSANTHEMUM: *G. Edwardes.* Pretty; would be still more so if a plant were covered with such blooms. These malformations are very common.

UNIVERSAL SAVOY: *R. G.* We shall be enabled to say more about this well reputed vegetable after testing it.

CATALOGUES RECEIVED.

MR. LAXTON, Rose and Seed Grower, Bedford — New Seedling Roses; also Select Novelties in Roses, Fruits, Plants and Vegetables.

ARCHIBALD SMITH & STEVENS, 48, Leicester Square, London—Hydraulic Door Springs.

JOHN LAING & CO., Forest Hill—General Wholesale List of Seeds, Roots, Trees, Plants, &c.

FRED. BURVENICH, Sen., Ghentbrugge, Belgium — List of Trees, Shrubs, Fruit Trees and Hardy Plants.

J. C. SCHMIDT, Erfurt, Prussia — List of Novelties for 1885.

W. SMITH & SON, Kintore—Forest Trees, &c.

DICKSON & SONS, Newton Nurseries, Chester — Forest and Fruit Trees, Roses, &c.

MR. CORNWELL, Barnet—Roses.

T. KENNEDY & CO., Dumfries — Forest, Fruit, and Ornamental Trees.

JAMES T. ANDERSON, 149, Commercial Street, Shoreditch, London —Sacks, Bags, Russia Mats.

COMMUNICATIONS RECEIVED: — T. Mills.—H. Crux.—W. L. Buster.—W. Divers.—W. K.—W. M.—L. C.—T. H. Crasp.—Captain J. B. Tibbits.—M. A. Bradstock.—Dr. G. Hoggan (next week).—R.—J. T. R.—H. Ward.—W. Pamplin.—W. Preston.—R. D.—F. C.—T. P. B.—C. S. D. J. Mcludoe.—J. F. W.—J. R. J.—E. J. L.—A. O.—W. Richardson.—M. M.—W. Barron.

Markets.

COVENT GARDEN, November 13.

LARGE supplies of all classes of goods to hand, with a limited demand, heavy consignments of Nova Scotia and Canadian reaching us in good condition. Kent Cobs heavy at a fall. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Pine-apples, Eng., lb.	3 0	3 6
Cobs, per 100 lb.	60 0	72 6	Peaches, per doz.	8 0	12 0
Grapes, per lb.	0 6	3 0	Pears, French, doz.	1 6	3 6
Lemons, per case	21 0	..	Pines, St. Michael's, each	3 0	6 0
Melons, each	1 6	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	4 0	6 0	Lettuces, Cabbage, per doz.	1 6	..
Beans, French, lb.	0 6	..	— Cos, each	0 2	..
Beet, per doz.	1 0	..	Mint, green, bunch	0 4	..
Cabbages, per doz.	1 6	2 0	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 6	..	Onions, per bushel	4 0	..
Cauliflowers, English, dozen	1 0	2 6	— Spring, per bun.	0 6	..
Celeriac, per root	0 4	..	Parsley, per bunch	0 4	..
Celery, per bundle	1 6	2 6	Radishes, per doz.	1 6	..
Cucumbers, each	0 6	1 0	Salsify, per bund.	1 0	..
Endive, English, per dozen	1 0	..	Seakale, per punnet	1 6	2 0
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	2 6	..
Horse Radish, bun.	3 0	4 0	Tomatos, per lb.	0 6	1 0
			Turnips, bun.	0 5	..

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.*; Champions, 45*s.* to 60*s.* per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Abutilon, 12 bunches	2 0– 4 0	Marguerites, 12 bun.	3 0– 6 0
Arum Lilies, 12 blms.	3 0– 6 0	Mignonette, 12 bun.	1 0– 4 0
Azalea, 12 sprays ..	1 0– 1 6	Pelargoniums, per 12 sprays	0 9– 1 6
Bouvardias, per bun.	0 9– 1 0	— scarlet, 12 sprays	0 4– 0 6
Camellias, per doz ..	2 0– 6 0	Primula, double, bun.	1 0– 1 6
Carnations, 12 blms.	1 0– 2 0	Roses (indoor), doz.	2 0– 6 0
Chrysanth., 12 bun.	2 0– 6 0	— (outdoor), 12 bun.	6 0–12 0
— large, 12 blooms	0 6– 2 0	Stephanotis, 12 spr.	4 0– 8 0
Cyclamen, 12 blooms	0 3– 0 6	Tropæolum, 12 bun.	1 0– 2 0
Dahlias, 12 bunches	2 0– 4 0	Tuberoses, per doz..	1 0– 1 6
Eucharis, per doz. ..	3 0– 6 0	Violets, 12 bun. ..	1 0– 1 6
Gardenias, 12 blms..	3 0– 6 0	— French, bunch..	1 0– 1 6
Gladiolus, various, 12 spikes	1 0– 2 0	— Parme, French, per bunch	3 0– 4 0
Heliotropes, 12 sp. ..	0 6– 1 0	Wallflower, 12 bun..	4 0– 6 0
Lapageria, white, 12 blooms	2 0– 3 0	White Jasmine, per bunch	0 6– 1 0
— red, 12 blooms	1 0– 2 0		

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0–24 0	Ferns, in variety, per dozen	4 0–18 0
Arbor-vitæ (golden), per dozen	6 0–18 0	Ficus elastica, each	1 6– 7 0
— (common), dozen	6 0–12 0	Foliage Plants, various, each	2 0–10 0
Begonias, per doz. ..	4 0–12 0	Fuchsias, per doz. ..	3 0– 6 0
Bouvardia, dozen ..	9 0–18 0	Marguerite Daisy, per dozen	8 0–15 0
Chrysanth., dozen ..	4 0– 9 0	Myrtles, per doz. ..	6 0–12 0
Cyperus, per dozen	4 0–12 0	Palms in variety, each	2 6–21 0
Dracæna terminalis, per dozen ..	30 0–60 0	Pelargoniums, scarlet, per dozen ..	4 0– 6 0
— viridis, per doz.	12 0–24 0	Primula sinensis, per dozen	4 0– 6 0
Erica, various, doz.	9 0–18 0	Solanums, dozen ..	9 0–12 0
Euonymus, various, per dozen	6 0–18 0		
Evergreens, in var., per dozen	6 0–24 0		

SEEDS.

LONDON: *Nov.* 12.—Inactivity continues to characterise the trade for field seeds. Of new English Cowgrass the supply exceeds the demand, and quotations are consequently easier. Foreign samples of Clover seeds meet at present with no attention. There is nothing doing in either Alsike, white, or Trefoil. Kœnigsberg Tares are offered at a slight reduction, but without finding buyers. The stocks of winter Vetches seem now quite used up. Lower rates are accepted for both Canary and Hemp seed. Blue Peas move off slowly on last week's terms. Feeding Linseed is cheaper. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday trade was dull in nearly every department, but more especially so in the Wheat and flour trades. Wheat is 6*d.* to 1*s.* lower on the week for English, whilst sales of foreign have been hardly practicable at the decline. Flour was quite 6*d.* per sack lower. Medium grades of malting Barley were very dull of sale at the recent decline; grinding sorts in favour of buyers. Maize was firm, although the demand was only limited. The market for Oats was steady, and Peas showed no quotable change.—On Wednesday there was only a very limited demand for either Wheat or flour, and no tendency to improvement in prices. In Barley sales were not readily effected. Beans and Peas were quiet and unchanged. Rates for Oats were rather easier, common qualities ranging down to 15*s.* There was not much passing in Maize, but the market was firm.—Average prices of Corn for the week ending Nov. 8:—Wheat, 32*s.*; Barley, 31*s.* 10*d.*; Oats, 19*s.* 4*d.* For the corresponding period last year:—Wheat, 40*s.* 1*d.*; Barley, 34*s.* 2*d.*; Oats, 19*s.* 5*d.*

CATTLE.

At Copenhagen Fields on Monday trade was not very ast in any of the markets, but prices ruled fairly steady all round, Quotations:—Beasts, 4*s.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 3*s.* 4*d.* to 5*s.* 8*d.*; sheep, 4*s.* 8*d.* to 5*s.* 4*d.*, and 5*s.* 8*d.* to 6*s.* 6*d.*; pigs, 3*s.* 8*d.* to 4*s.* 4*d.*—Although quiet, Thursday's trade was firm for both beasts and sheep, and prices were well maintained. Calves and pigs sold at late prices.

POTATOS.

The Borough and Spitalfields Markets reports state that for good samples there is a steady demand, but inferior sorts are neglected. Quotations:—Kent Regents, 70*s.* to 80*s.*; ditto kidneys, 60*s.* to 70*s.*; Essex Shaws, 50*s.* to 60*s.*; Victorias, 70*s.* to 80*s.*; Magnum Bonums, 50*s.* to 70*s.*; Champions, 50*s.* to 65*s.*—The imports into London last week consisted of 224 bags 10 sacks from Hamburg, 73 bags Ostend, and 3 bags 14 sacks from Rotterdam.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Ravensworth West Hartley, 14*s.* 9*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.*; Hetton Lyons, 16*s.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; Hartlepool, 17*s.*; Hulam, 16*s.* 3*d.*; East Hartlepool, 17*s.* 3*d.*; South Hartlepool, 16*s.* 3*d.*; Tees, 18*s.* 2*d.*

Government Stock.—Consols closed on Monday at 100⅜ to 100½ for delivery, and 100⅜ to 100½ for the account. Tuesday's final prices were, 100⅜ to 100⅛ for delivery, and 100⅛ to 100⅛ for the account. The closing figures on Wednesday and Thursday were, 100⅜ to 100½ for delivery, and 100⅜ to 100½ for the account.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s.* per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s.* per ton per Truck. Sample Bag, 5*s.*: 5 Bags, 22*s.* 6*d.*; 10 Bags, 45*s.* Bags included. Fresh SPHAGNUM, 10*s.* 6*d.* per Bag. SILVER SAND, Coarse or Fine, 52*s.* per Truck of 4 tons. WALKER AND CO., Farnborough Station, Hants.

EUREKA INSECTICIDE.—The only Insecticide worth using. Recommended by the Principal Gardeners in Scotland. The only Insecticide awarded Diploma, Forestry Exhibition, Edinburgh.—Wholesale Agents, CORRY, SOPER, FOWLER AND CO., Finsbury Street, London E.C.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to

THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

BEESON'S MANURE

Is the best for all Horticultural Purposes.
In Tins, 1s., 2s. 6d., and 10s. 6d. each; also in Sealed Bags, 1 cwt., 13s.
MANUFACTURED BY
W. H. Beeson, Carbrook Bone Mills, Sheffield.
Wholesale Agents in London: Corry, Soper, Fowler & Co., Limited, 18, Finsbury Street, E.C., and Shad Thames, London, S.E. Supplies can be obtained through all respectable Seedsmen and Florists in the Kingdom.
Pure Crushed Unboiled BONES, any size, for Vine Borders.

KEEL'S GARDENERS' FRIEND and BLIGHT DESTROYER.—Best winter dressing for Peach Trees, &c. No painting nor washing required. Syringe as directed with Keel's Insecticide. Wonderful results—destroys all Blight—imparts no flavour to Fruit—clean, healthy, and very cheap. Send orders early to W. G. KEEL, Newton-St.-Loe, near Bristol (late Keel & Hawes, Bath); or to Nurserymen. Empties to Bath Station.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

Good and Cheap Insecticides.

TOBACCO PAPER and CLOTH (Roll).—Thoroughly reliable quality; low prices. Trade supplied. RICHARDSON AND CO., Tobacco Works, Leith, N.B.

SILVER SAND, coarse, 6*s.*, 8*s.* and 10*s.* per ton. Sussex and Kent PEAT and LOAM, 6*s.*, 8*s.* and 10*s.* per cubic yard. Free on rail by truckloads. In sacks at moderate prices.
W. SHORT, Horticultural Company, Midhurst, Sussex.—Established 1862.

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DENNIS PARK IRONWORKS, STOURBRIDGE.

The "Expansion Joint."



The Best and Quickest Made.

4-in. Expansion Joint Hot-water Pipes, 9 feet long, 4*s.* 3*d.* each; 4-in. Socket Hot-water Pipes, 9 feet long, 4*s.* 6*d.* each.
Price List on application.

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Terra-Cotta! Portable! For Coal!
ROBERTS'S PATENT.
Pure and ample Heat 24 hours or longer for about 1*d.*, without attention. For Greenhouses, Bedrooms, or almost any purpose. Pamphlet and authenticated Testimonials sent. In use daily at Patentee's—THOMAS ROBERTS,
112, Victoria Street, Westminster, S.W.

Russia Mat Merchants.

ARCHANGEL MATS and PETERSBURG MATS, for covering, packing, &c., and RAFFIA FIBRE. For Wholesale Prices apply to
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SPECIAL GLASS FOR CONSERVATORIES, VINERIES, &c.
All sizes in stock. Price and List of Sizes on application.
T. & W. FARMILOE,
Rochester Row, Westminster, London, S.W.

ARCHANGEL and PETERSBURG MAT MERCHANTS and IMPORTERS.—All the usual kinds at reduced rates. Sacks and Seed Bags, new and second-hand, of every description. Raffia Fibre, Netting and Tiftany, Tarpaulins, Rick-covers, Horse-cloths, Ropes, Lines, and Twines. Price LIST on application to J. BLACKBURN AND SONS, 4 and 5, Wormwood Street, London, E.C.

TUBULAR GAS BOILERS, for Heating Conservatories.—Half Price will be taken for three No. 2 HARTLEY AND SUGDEN'S "ALEXANDRA" MULTI-TUBULAR GAS BOILERS, Copper Tubes, equal to new; each capable of Heating 100 feet of 2-inch pipe.
Apply to G. N. BURDEN, Ironmonger and Hot-water Engineer, Teignmouth.

FOR SALE, 40 yards (in two lengths of 20 yards each) of MERRYWEATHER'S REDKUBBER GARDEN HOSE, fitted with Joints, Swivels, and Hose End—as good as new. Cost £3 15*s.* five months ago. May be had for £2 15*s.*, entire; or, in separate length, for 3*os.* each. Apply, as early as possible, to
Rev. Dr. ROGERS, The Grove, Durham.

Under the Patronage of the Queen.

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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
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The Marvel of Power is

WATSON'S GREAT WATER HEATER or PATENT DOULE ACTION SUSPENSION BOILER, to Heat from 200 to 2000 feet of 4-inch pipe at half the cost of an ordinary Boiler. Well suited for Heating in any place where an ordinary Saddle can be applied. For Prospectuses
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THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.





GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
Illustrated Price LISTS Free by Post. The Trade supplied.

ORNAMENTAL PAVING TILES, for Conservatories, Halls, Corridors, Balconies, &c., from 3*s.* per square yard upwards. Pattern Sheet of Plain or more elaborate Designs, with Prices, sent for selection.
WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, Baths, &c. Grooved and other Stable Paving of great durability, Wall Copings, Drain Pipes and Tiles of all kinds. Roofing Tiles in great variety. Slates, Cement, &c.
F. ROSHER AND CO., Brick and Tile Merchants.
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SILVER SAND, fine or coarse grain as desired. Price, by post, per Ton or Truckload, on Wharf in London, or delivered direct from Pits to any Railway Station. Samples of Sand free by post.
FLINTS and BRICK BURRS for Rockeries or Ferneries.
KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

SUPERIOR VARNISH.



It is applied cold, and may be laid on by any farm labourer or other unskilled person. It dries quickly, giving a hard, brilliant polish, and looks equally as well as oil paint, yet at one-fourth the cost.

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HORTICULTURAL BUILDERS,
121, BUNHILL ROW, LONDON, E.C.

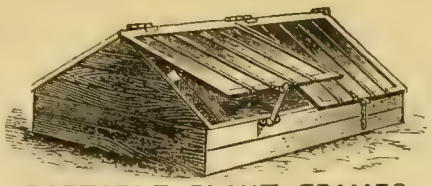


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The above are without exception the most useful kind of Frame for Plant Growing, and every one with a garden should possess one. The sashes turn right over one on the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide, " " "	4	15	0
6 feet long, 5 feet wide, " " "	3	15	0
12 feet long, 5 feet wide, " " "	6	10	0

The glass is nailed and puttied in.

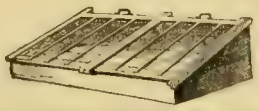
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ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

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GEAR for Greenhouses.—120 Ventilators can be opened and closed in one minute. No cords required; can be worked by a boy, and cannot get out of order. Information and references on application to

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BOULTON & PAUL
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No. 75. Melon or Cucumber Frames.

CASH PRICES, CARRIAGE PAID. Packing Cases.

No. 2, 8 ft. long, 6 ft. wide,	£3	7	6	3s. 6d.	Allowed for in full if returned at once.
No. 3, 12 ft. long, 6 ft. wide,	4	17	6	4s. 0d.	
No. 4, 16 ft. long, 6 ft. wide,	6	7	6	4s. 6d.	

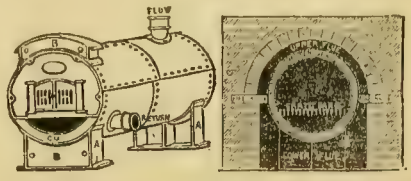
13 inches deep in front, and 24 inches at the back; lights 2 inches thick, with iron bar and handle to each light. All painted four coats of best oil colour, the lights glazed with 21-oz. English glass.

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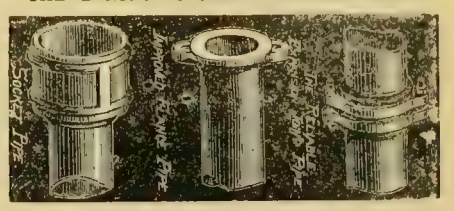
The Original and only Genuine Trentham Rivetted Boiler.

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HOT-WATER PIPES AND FITTINGS
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HIGH and LOW PRESSURE and HOT-AIR HEATING APPARATUS ERECTED and GUARANTEED.

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GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames St., London, E.C.

HORTICULTURAL STRUCTURES of EVERY DESCRIPTION, in EITHER WOOD or IRON, or BOTH COMBINED.
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HOT-WATER APPARATUS for WARMING CHURCHES, SCHOOLS, PUBLIC BUILDINGS, MANSIONS, HARNESS ROOMS, DRYING ROOMS, HOTHOUSES and BUILDINGS of EVERY DESCRIPTION.

"Haud desinam donec perfecero."

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(Late of the THAMES BANK IRON COMPANY),

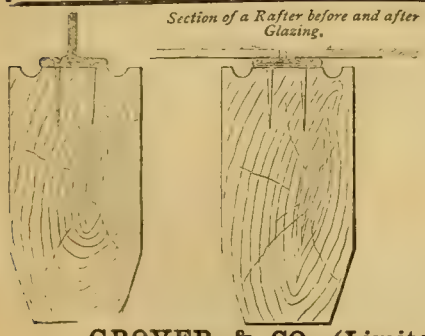
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HOT-WATER PIPES	2-inch, 1s. 1d.;	3-inch, 1s. 7d.;	4-inch, 2s. 0d.	per yard.
" " ELBOWS	2-inch, 1s. 4d.;	3-inch, 2s. 0d.;	4-inch, 2s. 6d.	each.
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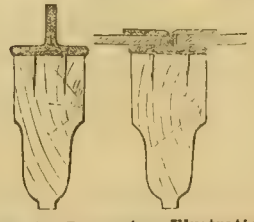
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N.B.—The Lead Strips, which are the special feature of this System, require no Skilled Labour to fix; breakages can be repaired by any one; and ALL OUTSIDE PAINTING IS DISPENSED WITH.

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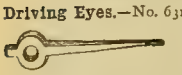
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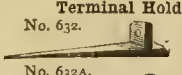
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ALL GALVANISED.
Straining Bolt and Holdfast. — No. 635.
As illustrated above, price 4*s.* per dozen.

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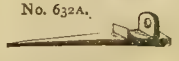


2 2½ 3 3½ inches.
3*d.* 4*d.* 5*d.* 7*d.* per doz.

Terminal Holdfasts.
No. 632. Per doz. 2*s.* 6*d.*



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BEST QUALITY GALVANISED WIRE.
1*s.* 9*d.*, 2*s.*, and 2*s.* 6*d.* per 100 yards.
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Oil Paint No Longer Necessary.
HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(*Registered Trade Mark.*)



This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

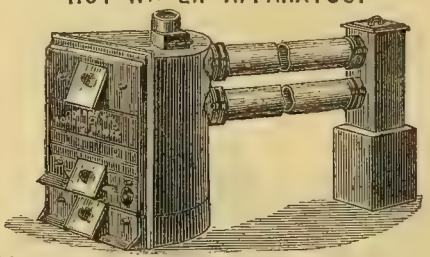
CAUTION—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to
HILL AND SMITH, Brierley Hill Ironworks, Staffordshire; 118, Queen Victoria Street, London, E.C.; and 196, St. Vincent Street, Glasgow.

BELGIAN GLASS for GREENHOUSES, &c.
Can be obtained in all sizes and qualities of
BETHAM & SON,
9, LOWER THAMES STREET, LONDON, E.C.
B. & SON have always a large stock in London of 20 in. by 12 in., 20 in. by 14 in., 20 in. by 16 in., 20 in. by 18 in., in 16-oz. and 21-oz.; and also large sizes in all qualities for cutting-up purposes, in 200-ft. and 300-ft. cases.

THE LOUGHBOROUGH GREENHOUSE HOT-WATER APPARATUS.



Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4-inch hot-water pipe, and patent joints complete, £4 4*s.*
Delivered free to any Station. Discount for cash.
This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.
It burns over 12 hours without attention at a nominal cost.
"Loughborough" Boilers to heat up to 650 ft. of 4-in. pipe, with hot-water pipe, joints, &c., always in stock.

COST OF APPARATUS FOR HOUSES OF ANY SIZE ON APPLICATION.
The measurement of Greenhouse being given, every apparatus is delivered with pipes cut and fitted ready for fixing.

Illustrated LIST with full particulars, post-free.

NOTE.—All genuine Boilers have "The Loughborough Boiler" cast on.

DEANE & CO.,
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THE "LANKESTER" HOT-WATER BOILER.—A Cast-iron, Solid, Waterway End Boiler. Distinguished for its Durability, Efficiency, and Economy of Fuel. Entire Waterway Back, Two Side Flues, Two Waterway Flue Dividers. We guarantee this Boiler as the best with which we are acquainted.

	Long.	Heat of 4-in. Pipe.	Price of Boiler and Fittings.
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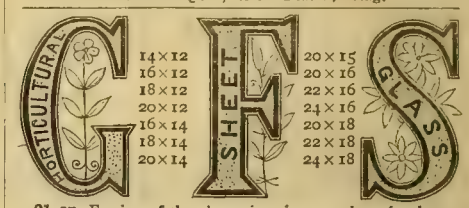
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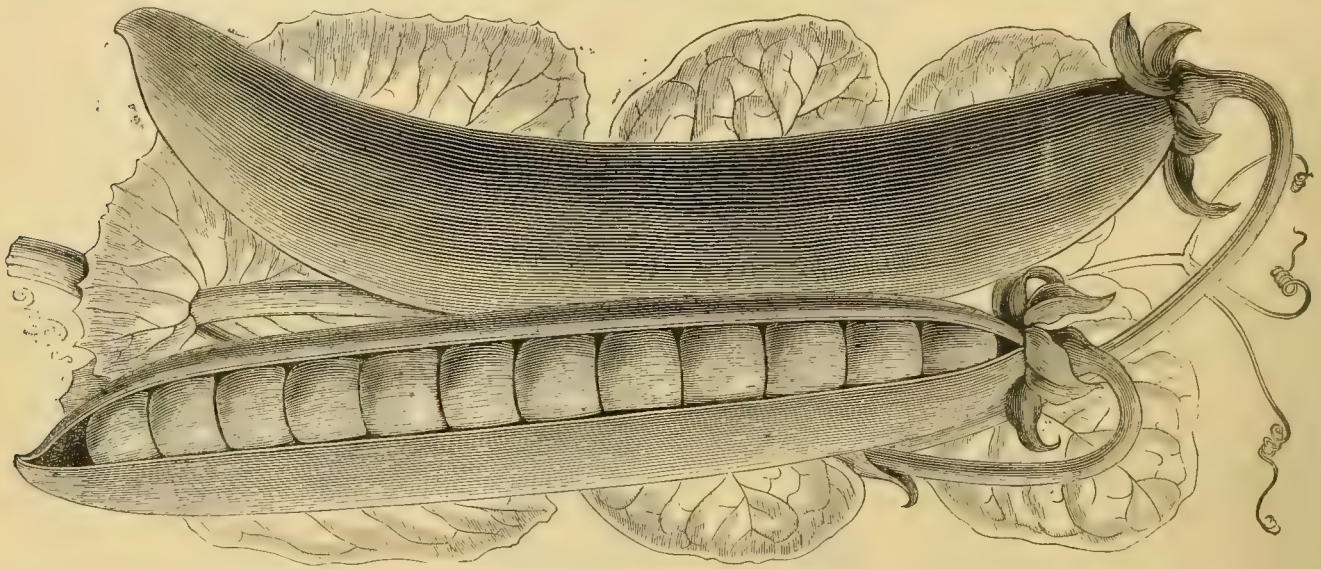
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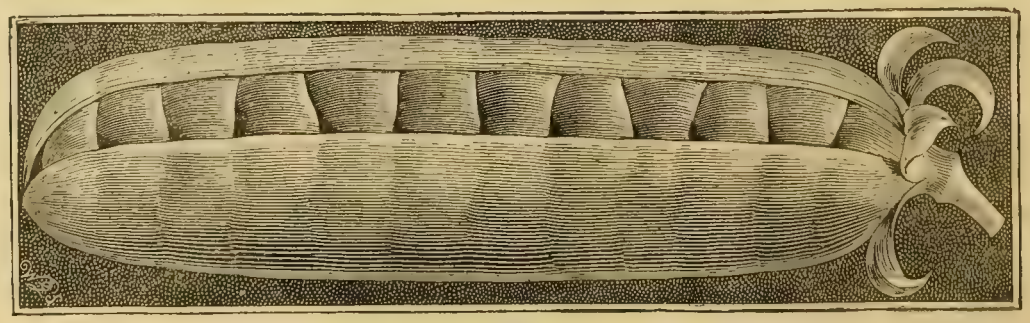
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 569.—Vol. XXII. {New Series.} SATURDAY, NOVEMBER 22, 1884. {Registered at the General Post-office as a Newspaper.} Price 5d. {Post-free, 5½d.}

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The FIFTH GRAND EXHIBITION of CHRYSANTHEMUMS and FRUIT will be held in St. George's Hall, NOVEMBER 25 and 26, when in addition to a Silver Cup value 10 Guineas for Cut Blooms, upwards of TWO HUNDRED POUNDS will be given in Prizes for PLANTS and FRUIT, in Collections and Single Dishes. Also GRAND EXHIBITION of EARLY SPRING FLOWERS in the month of MARCH next, 1885. For Schedules and further information, apply to
JOSEPH GORE, Secretary.
51, Maple Grove, Sefton Park, Liverpool.

SCHOOL of the ART of LANDSCAPE GARDENING and the IMPROVEMENT of ESTATES, CRYSTAL PALACE, S.E.
Principal—Mr. H. E. MILNER, A.M. Inst. C.E.
Lecture and Demonstration Rooms near the North Tower. Public Lectures, WEDNESDAYS at 4 P.M. Prospectus and full particulars on application to the SUPERINTENDENT of the School of Art, Science, and Literature, Crystal Palace.
Mr. MILNER has moved his Offices to the above address, where his professional work is now carried on.

To Osier Growers, Basket Makers, and Nurserymen.
BRADFORD AND SONS, Yeovil, Somerset, now Grow and Cut yearly 100 acres and upwards of OSIER BEDS, and will quote prices to the Trade, according to quantity required.
Samples and prices of Osier "Sets" on application.

STRONG MANETTI STOCKS, fit for immediate working, 25s. per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Dedemsvaart, by Zwolle, Holland.

Prices of Alpine Plants.
CHRISTOF STEINPOCK, of Altlengbach, Lower Austria, offers :— HELLEBORUS NIGER (Christmas Roses), splendid strong roots, at 26s. per 1000; CYCLAMEN EUROPÆUM, from 12s. to 24s. per 1000; VERATRUM ALBUM, 45s. per 1000; NARCISSUS POETICUS, 13s. per 1000; LEUCOJUM VERNUM, 13s. per 1000; 20 assorted FERNS, in a collection of the most saleable sorts, highly ornamental, 8os. per 100.

Notice of Removal.
NUTTING AND SONS beg to give notice that owing to the expiration of the lease of 60, Barbican, they have removed to more extensive premises,
106, SOUTHWARK STREET, S.E.
where all communications should be addressed.
NUTTING AND SONS, Wholesale Seed Merchants, London, S.E.

DESCRIPTIVE CATALOGUE. — Roses, Rhododendrons, Fruit Trees, Deciduous and Evergreen Trees and Shrubs, Conifers, Clematis, and other Climbing Plants, &c. Our new CATALOGUE of the above is now ready, and may be had, free, on application.
H. LANE AND SON, The Nurseries, Berkhampstead, Herts.

PHŒNIX RECLINATA. — New Seed, 1s. per oz. (about 80 seeds).
HOOPER AND CO., Covent Garden, London, W.C.

CAMELLIAS—CAMELLIAS with Buds.—Many thousands are on Sale, white and striped. Apply to JULES DE COCK, Nurseryman, Ghent, Belgium.

LARCH.—1,000,000 to offer, Cheap, lifted last Spring. All strong, with good roots : 3 to 4 feet, 16s.; 4 to 5 feet, 18s.; 5 feet, 20s. per 1000. Apply
FRANCIS BELL, Nurseries, Easingwold.—Nov. 8, 1884.

FOR SALE, a few thousand MANETTI STOCKS, clean-eyed and well-rooted, cheap for cash. Also 10 bushels McLean's WONDERFUL PEA. Address GEO. BOLTON, Nurseryman, Wyddial, Buntingford, Herts.

Strong Thorns for Edging.
THOMAS METHVEN AND SONS can supply the above, in large quantities.
Leith Walk Nursery, Edinburgh.

EUCHARIS CANDIDA.—Good Bulbs by the 100 or 1000. The flowers of this free flowering species are extensively used for cutting. Price on application.
Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

CHESTNUT (Spanish), Larch, Hazel, Ash, Birch, Alder, Willow, Oak, and Thorn Quick. Stout, well-rooted, transplanted. A large quantity to be sold.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

LILIUM AURATUM.—Fine strong sound plump Bulbs. Prices, and where desired samples, on application.
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

STANDARD ROSES, good plants, £3 10s. per 100; Dwarfs, strong, on Brier and Manetti, 30s. per 100.
W. JACKSON, Blakedown, Kidderminster.

HYBRID RHODODENDRONS, fine plants, 1½ to 2½ feet, all colours, mixed, 40s. per 100. Hardy AZALEAS, bushy, and mostly with buds, 40s. per 100.
W. JACKSON, Blakedown, Kidderminster.

To Market Gardeners and Others.
ROBERT J. DARBY, of the Cirencester Nurseries, has 400 or 500 excellent Bush APPLES and PEARS for Sale, cheap, that must be cleared. No reasonable offer refused. Cirencester, Nov. 21, 1884

FRUIT TREES for SALE.—Favourite Cluster DAMSON, Victoria Bush and New Orleans PLUMS, 10,000 Lad and Bob GOOSEBERRIES, Black and Red CURRANTS, COB TREES, 20,000 true DAMSON SPAWN, 3 to 4 feet
A. SEAR, Mr. Skinner, East Farleigh, Kent.

GRAPE VINES, strong Fruiting and Planting Canes; also STRAWBERRIES in pots. LIST on application.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

TWO THOUSAND VINES for immediate fruiting and for permanent planting, thoroughly ripened Canes. CATALOGUE on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

GOOSEBERRY TREES and Carter's Prolific RASPBERRY.—Strong 2 and 3-yr. old Lancashire Lads amd Raspberry Canes for Sale.—Apply to
W. WARREN, Worton Gardens, Isleworth, W.

To Grape Growers.
W. UNWIN is open to RECEIVE CONSIGNMENTS of GRAPES in any quantity. High prices realised. Established 10 years.
W. UNWIN, SALESMAN, 15, James Street, Covent Garden, London, W.C.

WANTED, Large CYCAS REVOLUTA PLANTS, in good condition. State length of trunk and number of fronds, &c., to
W. ICETON, Nurseryman, Granard Gardens, Roehampton.

WANTED, GARDENIAS, EUCHARIS, ROSES, ORCHIDS, TUBEROSES, CHRYSANTHEMUMS (large-flowered, with long stalks), and other CHOICE CUT FLOWERS.
WILLIAM DENMAN, Salesman and Horticultural Agent, Covent Garden, W.C.

TO THE TRADE.—Special offer of SPIRÆA JAPONICA, extra strong clumps; LILY OF THE VALLEY, extra strong clumps; LILY OF THE VALLEY, finest German Crowns; GLADIOLUS BRENCHLEYENSIS, extra large; AFRICAN TUBEROSES, first quality. Prices upon application to
JAMES CARTER, DUNNETT, AND BEALE, 237 and 238, High Holborn, London, W.C.

ADIANTUM CUNEATUM. 20,000 extra strong, in 60's.
LASTREA ARISTATA, var., 10,000 in 60's, 20s. per 100.
WATSON AND EDEN, Merton Abbey Nursery, London, S.W.

FOR SALE, Twelve large CAMELLIAS and Fourteen AZALEAS, clean and well set with buds. For price, &c., apply to
S. DANIEL, Gardener, Elsham House, Grantham.

Aquatics.
J. V. REES (late Robert Parker) has the finest Collection of above in the country, and can supply Hardy Herbaceous and Alpine Plants, in 100 showy varieties, from 50s. New CATALOGUE now ready.
Exotic Nursery, Tooting, Surrey, S.W.

HYBRID GLADIOLI.—The cheapest and the best in the Trade. HOOPER'S WHOLESALE LIST will be forwarded on application.
HOOPER AND CO., Covent Garden, London, W.C.

New East Lothian Stock.
THOMAS METHVEN AND SONS beg to intimate that they will send out this season their NEW WALL-LEAVED CRIMSON variety of the above, which will be found a valuable addition to these already well known Stocks, in packets 2s. 6d. and 5s. each.
15, Princes Street, Edinburgh.

Autumn Planting.
THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, have, as usual, an extensive Stock of healthy, well grown seedling and transplanted FOREST and ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., special offers of which will be made on application.

ROSES.—ROSES.—ROSES.—Forty choice Perpetuals sent on receipt of remittance for 21s.: purchaser's selection from 300 best varieties. List of names on application. Twenty choice Standards, or Half-standards, 21s.
JAS. WALTERS, Mount Radford Nursery, Exeter, Devon.

Tea Roses.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

Spiræas—Spiræas.
JULES DE COCK, NURSERYMAN, Ghent, Belgium.
SPIRÆA JAPONICA, first-class clumps.
Many thousands for sale. Prices on application.

LARGE ARAUCARIA EXCELSA for Sale. Also large SPECIMEN CAMELLIAS, from 3 to 12 ft.
E. COOLING, Mile Ash Nurseries, Derby.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

CŒLOGYNE CRISTATA ALBA.—The New Snow-white Cœlogyne. One of the most lovely of Orchids. Sizes and prices on application.
WILLIAM BULL, F.L.S., Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

FREESIA REFRACTA ALBA. Long white bell-shaped flower for early blooming. Very sweet scented. One of the most useful bulbs that can be grown. See our Bulb CATALOGUE, free on application.
WATKINS AND SIMPSON, Seed and Bulb Merchants, Exeter Street, Strand, W.C.

FOR SALE, splendid Williams' Bon Chrétien and Doyenné du Comice PEAR TREES, from Jersey. Four years old.
Price £7 10s. per 100.
Apply to Messrs. S. SOLOMON AND CO., Auctioneers and Fruit Salesmen, Covent Garden Market, where samples can be seen.

For Sale.
RASPBERRY CANES, Red and Black CURRANT TREES, and Victoria RHUBARB SETS.
Apply, R. BATH, Wansunt Farm, Crayford.

SEAKALE, for Forcing; VINES; PEACHES and NECTARINES in pots—fruiting trees; Dwarf Maiden FRUIT TREES, Dwarf ROSES. LIST on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

To the Trade.
CUCUMBER SEEDS.—Tender and True and Telegraph, of our own saving. Carefully selected stocks which we can offer with confidence. Price on application.
GEO. COOLING AND SON, Seedsmen, Bath.

SALES BY AUCTION.

Bulbs.—Mondays, Wednesdays, and Saturdays.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., regularly three times a week AS ABOVE, large consignments of first-class DUTCH FLOWER ROOTS, lotted to suit both large and small buyers. The Sales commence at half-past 12 o'Clock, finishing generally about 5 o'Clock.
On view mornings of Sale, and Catalogues had.

5000 Lilium auratum, from Japan, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, November 25, at half-past 12 o'Clock precisely, an importation of 5000 splendid Bulbs of LILIUM AURATUM, just received from Japan in fine condition; 2000 TUBEROSES and other ROOTS, from South Africa; 260 LILIUM CANADENSE and 50 MERTENSIA VIRGINICA, from America; Home-grown LILIES in great variety, including many of the finest species in cultivation; Clumps and Crowns of LILY OF THE VALLEY, SPIRÆA JAPONICA and PALMATA, also several hundred lots of first-class DUTCH BULBS, &c.
On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6780.)
PLANTS and BULBS, from English, Dutch, and Belgian Nurseries.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, November 26, at half-past 12 o'Clock precisely, first-class Standard ROSES, of sorts; Pyramid and Dwarf-trained FRUIT TREES, in variety; and a quantity of HERBACEOUS PLANTS, from English Nurseries; 50 choice named CAMELLIAS, from Ghent; STOVE and GREENHOUSE PLANTS, and several hundred lots of BULBS from Holland.
On view morning of Sale and Catalogues had.

Thursday Next.—(Sale No. 6781.)
VALUABLE IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 27, at half-past 12 o'Clock precisely, by order of Mr. F. Sander, valuable imported ORCHIDS, consisting of a grand lot of healthy and fine Cattleyas, Odontoglossums, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6781.)
3000 LILIUM AURATUM from Japan in fine condition; 5000 TUBEROSES from South Africa.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 27.
On view morning of Sale, and Catalogues had.

Every Monday, Thursday, and Saturday.
DUTCH BULBS.—GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., every MONDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock precisely, each day, extensive consignments of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, SNOWDROPS, and other ROOTS, from Holland, in lots to suit the Trade and Private Buyers.
On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Important Sale of a First-class Collection of Dutch BULBS, a Superb Assortment of 500 handsome Standard, Dwarf and other ROSES; Selected FRUIT TREES, Hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, November 25, at 12 o'Clock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.
ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 25, at half-past 12 o'Clock precisely, ORCHIDS in flower and in bud from various well-known collections, and including several rare and valuable species, in all about 300 lots.
On view morning of Sale, and Catalogues had.

Wednesday Next.

450 LILIUM CANADENSE and 75 CYPRIPEDIUM ACAULE, received direct from America; 1000 African TUBEROSES, CAMELLIAS, AZALEAS, FICUS, AZALEA MOLLIS, FERNS, &c., received direct from Belgium; 300 best named Standard and other ROSES, from a well-known English Nursery; a choice assortment of Hardy English-grown LILIES and BULBS, SPIRÆA JAPONICA, LILY OF THE VALLEY (immense crowns), and a variety of PLANTS and BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 26, at half-past 12 o'Clock precisely, in consequence of the great number of lots.
On view morning of Sale, and Catalogues had.

Wednesday Next.
IMPORTANT SALE of LILIES from Japan.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, November 26, at half-past 12 o'Clock precisely, in consequence of the great number of lots, an unusually large consignment of LILIES and IRIS from Japan, just received in splendid condition, comprising—

7000 Lilium auratum	2500 Lilium Krameri.
1100 ,, ,, extra large bulbs.	2500 ,, longiflorum.
	1500 ,, Thunbergianum.
600 ,, speciosum roseum.	70 ,, speciosum album.

200 clumps of Japanese Iris, the native drawings of which will on view day of sale, and containing several beautiful varieties.
On view morning of Sale, and Catalogues had.

Ascot.
IMPORTANT SALE.
To the Trade and other Large Buyers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Standish & Co. to SELL by AUCTION, on the Premises, The Royal Nurseries, Ascot, on WEDNESDAY and THURSDAY, November 26 and 27, at 12 o'Clock precisely each day, several acres of remarkably well-grown NURSERY STOCK, including 40,000 Pinus austriaca and 30,000 P. Laricio, 2-yr. transplanted and seedlings; 1500 ditto, 2 to 4 ft.; 6000 Spruce, 1 to 4 ft.; 15,000 seedling Scotch Fir; 12,000 ditto, 2 to 5 ft; 3500 Weymouth Pines, 6000 Ornamental Trees, 6 to 9 ft.; 3000 green Hollies, 2 ft.; 15,000 common Laurels, 1 to 3 ft.; 6500 Laurus caucasicum, 1 to 3 ft.; 2000 Retinosporas, 1000 named Rhododendrons, budded; 500 Border Shrubs, 650 Cupressus Lawsoni alba and compacta, 1½ to 2½ ft.; Retinospora plumosa alba, 3000 Conifers, of sorts, 2 to 7 ft.; 1000 Standard, Pyramid, and Trained Fruit Trees; 1000 Standard, Half-standard, and Dwarf Roses, and a quantity of GREENHOUSE PLANTS in variety.
May now be viewed. Catalogues may be had on the Premises; or of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Friday Next
VALUABLE IMPORTED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, November 28, at half-past 12 o'Clock precisely, valuable IMPORTED ORCHIDS, including new and rare species.
On view morning of Sale, and Catalogues had.

Friday Next—Without Reserve.

MESSRS. PROTHEROE AND MORRIS will include in their SALE, on FRIDAY NEXT, November 28, Without Reserve, a quantity of ORCHIDS, collected and brought home by a Gentleman, from the West Coast of Africa, including various Angræcums, some of them probably new, and a variety of other distinct looking and unknown species.
On view morning of Sale, and Catalogues had.

Important Sale of Established Phalænopsis
AMABILIS and SCHILLERIANA,
The Property of C. M. Satow, Esq., of Clapton.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 2, about 50 PHALÆNOPSIS AMABILIS and 50 P. SCHILLERIANA. The plants are in splendid health, and comprise specimen pieces with 4 to 6 leaves, some measuring 10 to 12 inches long by 4 to 4½ inches wide. The varieties are specially fine, having been selected from time to time when in flower from Messrs. Low & Co.'s immense stock. Nearly all the plants are showing flower.

The Fallowfield Collection of Orchids.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will SELL the REMAINING PORTION of the above well-known Collection of ORCHIDS, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 2, at half-past 12 o'Clock precisely.
Further particulars will appear next week.

To Orchid Fanciers and Cut Flower Growers.
UNRESERVED SALE of a Collection of ESTABLISHED ORCHIDS grown specially for Cut Flowers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 2, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, comprising altogether about 1500 plants, including 100 Phalænopsis, 350 Odontoglossum Alexandræ, 60 Cœlogyne cristata, large quantities of Dendrobes and Odontoglots, in variety; Sophronites grandiflora, Lælias, Cattleyas, Cymbidium eburneum, Burlingtonias, Pilumna fragricans, &c.
On view morning of Sale, and Catalogues had.

New Hampton, Middlesex.
About ten minutes' walk from Hampton Railway Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Tangley Park Nursery, New Hampton, on WEDNESDAY, December 3, at 12 o'Clock precisely, by order of Mr. W. Lane, to clear the ground, a large quantity of well grown NURSERY STOCK in good condition for removal, comprising an assortment of specimen Evergreens and Conifers, 1500 Laurels, 3 to 5 feet; 1300 Lilacs, 4 to 7 feet; Deciduous Shrubs, Fruit Trees, 1000 Aucubas, 1 to 4 feet; 1000 Rhododendrons, 1 to 5 feet; 12,000 Box, 1 to 3 feet; 700 Hollies, 6 to 14 feet; and other stock.
May now be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

WANTED, a GLASS NURSERY, with One or Two Acres of Land and Cottage, within 20 miles of London.
L. H., Vulcan Villa, Truro Road, Wood Green, N.

Wannock, near Eastbourne

FOR SALE, the well-known (Freehold) STRAWBERRY GARDENS, DWELLING-HOUSE, GLASS-HOUSES, and PREMISES.
Particulars of H. T., 18, Marine Parade, Eastbourne.

TO BE DISPOSED OF, the GOODWILL of a FLORIST.—Place comprises splendid Shop and good Dwelling-house with every convenience, and occupies one of the best positions in the suburbs of the Metropolis. Letters to W. CALE, 18, Southampton Street, London, W.C.

To Florists, Market Gardeners, and others.

TO BE DISPOSED OF, a FLORIST'S and MARKET GARDENING BUSINESS. Returns about £150 per annum. Five Glasshouses, Stock, and Goodwill, £250; House and 3 acres of Land, Stable, and Cart House. Rent only £16 per annum. Fourteen years' lease, immediate possession.
To view, and for further particulars, apply at the Nursery Woodford, near Berkeley; or to D. LEGGE AND SON, Auctioneers, &c., Berkeley, Gloucestershire.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

JOHN KENNARDS, HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

Hyacinths in Pots.

POTS made expressly for HYCINTHS can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Rhubarb and Seakale Forcing.

STRONG well-made POTS for the above can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, Choice FLOWERS, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

To Nurserymen, Private Growers, &c.

A. CATTANEO, COMMISSION SALESMAN, 44, Hart Street, and New Flower Market, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantities. Terms on application.

Notice to Senders.

WISE AND RIDES have now a good demand for GARDENIAS, TUBEROSES, STEPHANOTIS, and large specimen blooms of CHRYSANTHEMUMS; also good GRAPES, Gros Colmar, Alicantes, &c.; CUCUMBERS, and TOMATOS.
WISE AND RIDES, Fruit and Flower Salesman, Covent Garden, W.C.

WANTED, American SEAMLESS Cotton Clover BAGS, if in good condition.—State price and quantity to HOWCROFT AND WATKINS, Wholesale Seedsmen, Covent Garden, London, W.C.

"MARY MORRIS," BORDER CARNATION.—Two First-class Certificates, 3s. a pair, 15s. a dozen. Cash with order. Direct from raiser.—H. G. SMYTH, 21, Goldsmith St., Drury Lane, W.C.

BARR'S DAFFODILS.—A beautiful Illustrated LIST, describing more than 450 varieties, free on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

To the Seed Trade.
PHACELIA CAMPANULARIA.

W. THOMPSON, SEEDSMAN, Ipswich, begs to announce that he is now able to supply Seed of the above SPLENDID NEW ANNUAL, with large flowers of the deepest blue, and which received the award of a First-class Certificate from the Royal Horticultural Society.
Retail packets 1s each.
WHOLESALE PRICE LIST of this and other New, Choice, and Rare Seeds will be sent free on application.

To the Trade.

EAST LOTHIAN STOCK.—Purple, White, Scarlet, New Crimson, and White Wallflower Leaved. All saved from the purest strains. Prices on application.
IRELAND AND THOMSON, Seed Warehouse, 20, Waterloo Place, Edinburgh.

NEW CHRYSANTHEMUMS.—Orders are now being booked for the New Varieties of 1884 at 10s. per doz.; Cuttings, 1883 varieties, 5s. per doz.: best Old Varieties, 1s. 6d per doz. Post-free for P.O.O.
R. OWEN, Floral Nurseries, Maidenhead.

PAUL AND SON'S ROSES, The "Old" Nurseries, Cheshunt.—The Champion Rose Growers of 1884 respectfully solicit orders for extra fine STANDARD and DWARF ROSES, ROSES in POTS for Forcing or Exhibition, NEW ROSES (magnificent plants). Specialty of STANDARD TEA ROSES, CLIMBING ROSES of sorts, fine grown, and in pots.
THE NEW ROSES include:—
H.P. GRANDEUR OF CHESHUNT (Paul & Son), Standards and Dwarfs, 2s. 6d. each.
H.P. GLOIRE LYONNAISE (Guillot), the New Yellow H.P., strong grown Dwarfs, 8s.
TEA SUNSET (Henderson), the Falcot coloured Perle des Jardins; good dwarfs, 5s each
THE NEW WHITE H.P.'s:—
WHITE BARONESS, Standards, 2s. 6d; dwarfs, 2s.
MERVEILLE DE LYON, Standards, 3s.; dwarfs, 2s.
All the above are fine Plants, giving good bloom next Summer.
Priced descriptive CATALOGUES post-free, on application.

ONE HUNDRED THOUSAND Dwarf ROSES, on Manetti, fine, 23s. per 100, £10 10s. per 1000; 200,000 ASPARAGUS, Giant and Connover's, 2-yr, 10s., fine; 3-yr. very fine, 15s.; 4-yr., extra, 20s.—all at per 1000.
MANETTI STOCKS, strong, for immediate working, 30s. per 1000. Cash with all orders. The best money can buy.
R. LOCKE, Royal Rose Farms, Red Hill, Surrey.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

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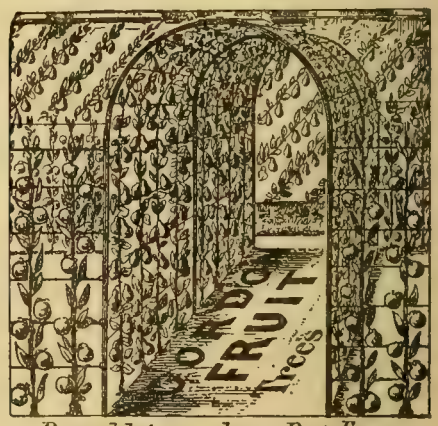
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 22, 1884.

GREYSTOKE.

GREYSTOKE, the place of residence of Mr. Henry C. Howard, is said to have taken its name from the badgers, brocks, or grays which frequented it. One might easily be lost in the genealogical mazes of the house of Howard, but we must be brief in this part of our recital. The barony, according to Sir Bernard Burke, was first granted to the ancestors of the Howards in the reign of Henry I. It passed through the families of Greystoke, Grimethorpe, and Dacre, to that of its present possessors. By gift of the Earl of Cumberland Lyulph of Greystoke became the first baron of that name, and from Lyulph is derived a modern Christian name, and also the name of the tower—Lyulph's Tower—standing in Gowbarrow Park, 9 miles from Greystoke, and used by Mr. Howard as a shooting box.

The last lord of the house of Greystoke died in 1306, and left his estates to a cousin, a Grimethorpe, or Grimesthorpe—one cannot be sure of the spelling of names of the fourteenth century, many different forms occurring. This second house ended within two hundred years in a female—an heiress—who carried the property to the house of Dacre by her marriage with Baron Dacre, of Gilsland. The heirs male of this house failed within half a century, when Dacre, Baron of Greystoke and Gilsland, left his estates to three co-heiresses, his sisters, one of whom married Philip Howard, Earl of Arundel, and henceforth Lord of Greystoke; and another Lord William Howard, second son of the Duke of Norfolk, who thus came into possession of Gilsland; and from that time to the present the two properties have remained with the Howards.

The old castle of the fourteenth century was among those which Cromwell bombarded and destroyed. It was rebuilt in the last century by Charles Howard, enlarged by his grandson, the fourteenth Duke of Norfolk, destroyed by fire a few years since, and is now again a noble residence, standing on the old site at the south end of the great park, near the village of Greystoke, with the lion of the Howards and their pious motto, "Sola virtutus invicta" over the door. When the American clergyman, Mr. Coxe, author of *Impressions of England*, passed through Greystoke *en route* from Keswick and the Lake Country to Penrith and Brougham Hall, and thence to "Do-the-boys' Hall, "he observed, to his surprise, some castellated places named Bunker's Hill and Fort Putnam. There is a third, called Spier Hall, and in the four-mile drive from Penrith to Greystoke, or the two-mile stroll from Blencow Station, you will see them, and will at once detect the eccentric work of their builder, the Duke of Norfolk. The forts are fictitious, but some very good farmsteads lie hid behind them, and their builder, in spite of occasional freaks, effected very great improvements on the estate. He was not only a builder but an extensive planter. The Duke bequeathed the estate to his nephew, Mr. Henry Howard, the father of the present

owner, and forestry still continues to be made a feature in its management, the planting and management of woods being skilfully conducted under an educated and highly competent manager. Mr. Wilson kindly showed me the park and grounds, and explained his management of the woods. The park, which formerly contained 3333 acres, was enlarged by the Duke of Norfolk, and is now one of the largest, if not quite the largest, in England, containing 5000 to 6000 acres without a single public road or footpath passing through it and entirely enclosed by a grand wall 7 feet in height and 10 miles in length, the substantial work of the Duke of Norfolk. There were formerly a thousand head of red and fallow deer, the number of which has been wisely reduced. Mr. Wilson's house at the upper end of the village is about 600 feet above the level of the sea, and the shepherd's house, which is said to be the highest inhabited house in Cumberland, is situated in the middle of the great park, and is just 1140 feet above the level of the sea. During our walk through the castle grounds to the "Craggs," a limestone ridge adjoining the shepherd's perch and as high, we made sundry observations in regard to timber, which may not be out of place in these columns, though some of them were too technical and minute in detail for repetition, except in an article on forestry. In the first plantation we entered, in the precints of the Castle, sad proofs of the effects of the gales which swept the North of England last winter, were manifest. This estate lost 30,000 trees, chiefly Conifers, whose heavy, evergreen foliage caught the full pressure of the wind; and the shallow-rooted Spruce and Silver Firs suffered most.

When true nobility looms in view there is no mistaking it, but you could not pass the Silver Fir that rears his head 120 feet high and measures 17 feet round as high up the trunk as you can reach, without pausing to admire it. This great tree stands by the side of some ornamental water near the Castle, on a cool, moist bottom. It shows the effect of exposure in its comparatively rough bark, for if Silver Firs are grown in sheltered woods their peculiar ash-coloured bark will be as smooth by comparison as the rind of an Orange. Rough bark is regarded here as a sign of health. The Silver Fir contains 600 cubic feet of timber, and the estate boasts of a Larch containing 400 cubic feet. In the timber yard of the Home Farm I was interested to observe the roughness of the bark of a number of young Larch trees, which were blown down prematurely, when thirty years planted, by the three great storms, *i.e.*, one from the north in December, from the south in February, and from the south-east in March.

From the homestead near the hunters' stables, and beyond the laundry, the ground rises towards the Crags, a favourite high spot, where frequent festivals and pic-nics are held, the public being freely admitted. Near the homestead a turbine for the supply of the Castle with water has been fixed in connection with a reservoir, which is replenished from another reservoir fed by the natural springs flowing from the high ground.

There are some fine rows of Lime trees on this lower ground. The shepherd's house beyond the Crags stands on the limestone rock, and the Sycamore and Ash grow well around it, thriving in soil 12 inches deep. The Ash is grown here with profit, in large masses, not less than two acres in extent, at an elevation of 1400 feet, and the Sycamore thrives even at a greater altitude, provided the trees are planted in sufficient number for mutual shelter. The planting and improving Duke was particularly fond of surrounding the homesteads with Sycamores for shelter; and he could not have selected a better or more ornamental tree for the purpose. The timber, too, is of growing value in the case of trees of large size, and for that reason it is planted here in greater numbers every year. The Duke set an example of planting which his successors have not neglected. Eccentric as he may have been in some respects, his ideas on the management of great estate were in the main correct. You may see his works blending with Nature's from the "Summer-ground Crag," where a wide prospect lies around—first, a plantation of Larch in the rear—the Duke's—then in front a wide valley in the open park formed by Nature; then plantations and woods—the Duke's—covering the opposite slopes, with the Duke's wall, which passes through them, visible here and there, and beyond the boundary of the park (though that is nowhere made apparent) lies a most extensive prospect, whose chief features are fells and peaks and mountain sides, which Nature claims as her handiwork. There are parks in the South of England which excel in some respects those of the higher latitudes, but for grandeur, exclusiveness, and stately size we have nothing in the southern counties to compare with Greystoke, the Great Park at Windsor being far less wild and romantic. Such a park in a thickly populated district has become almost impossible. But we are here in Westmoreland. Across that moor—looking from the Crags—lies Carlisle, 17 miles distant; and beyond is the Solway. Further distant still several points are seen in Dumfriesshire, and in Durham and Northumberland. The eye can range west and east from Helvellyn, Saddleback, and Skiddaw, the most prominent points of the Lake Country to Crossfell, the highest peak of the Pennines.

Quitting the subject of scenery for that of forestry a distant fell is seen here on the north which the Duke planted. The wood now consists of 356 acres of Larch, ranging in size from mere bushes at the top, at an altitude of 1500 feet above the level of the sea, to timber trees of 60 or 70 cubic feet on the lower levels. It is interesting to observe the effects of shelter in the plantation of Larch at the Crags, where the outside trees on the exposed side are comparatively small, while those within have attained the average size of 60 or 65 cubic feet, the age of the plantation being sixty years. Hawthorn bushes grow exceedingly well at this elevation. Before the advent of the Duke, all these profitable plantations of Graystoke were natural woods, yielding very little timber. The best hardwood is on the freestone, on the eastern side of the estate. The Larch does tolerably well on this formation, but it prefers the limestone. There may not be much significance however in this fact, which can hardly be due to the composition of the soil, for the Larch is not a limestone plant. It requires moisture, but it is necessary that the water should run freely away from its roots as it does on the porous limestone of the Crags. It may be well to note that Mr. Wilson does not raise young trees to any great extent, preferring to obtain them from Messrs. Little & Ballantyne, of Carlisle. The nursery business, or the treatment of timber trees from the seed-bed till the final planting out, is an art in which special training is needed. I may add that a considerable portion of the park is grazed on the system of adjustment, and about a thousand head of cattle and horses are taken in from May 24 to October 12.

The horticultural department at Greystoke, under the care of Mr. Micklewright, is not pushed to extremes. The climate is not favourable to the production of fruit. Apples of all sorts require shelter, while the more tender sorts can only be grown on a wall. Peaches are out of the question out-of-doors, Morello Cherries do well. The altitude is about 700 feet, and I noticed that at lower altitudes, on favourable sites, Peaches ripened very well this year in Cumberland. The well sheltered kitchen garden is 3 acres in extent. The private grounds and shrubberies close to the Castle, watered as they are by a burn called the Petterill, are very delightful. The streamlet rises in the north-eastern part of the park, falls over several artificial cascades within sight and hearing of the dwelling, and fills some ornamental sheets of water in the shubberies below; so that woods and plantations, with a stream passing through them, hang over the grassy slopes of the pleasure gardens by the waterside. *H. E.*

New Garden Plants.

DENDROBIUM CHLOROPTERUM, *Rchb. f., et Sp. Le M. Moore* (Trim. *Lond. Journ. Bot.*, 1878, May, p. 137, t. 196).

This interesting plant made its European *début* at the Royal Kew Gardens; its origin was unknown then. Having, however, been informed by Mr. J. Smith, the indefatigable curator of that grand establishment, that some Dendrobia had been products of the *Challenger* Expedition, I then guessed the plant might be due to Mr. Moseley. Now, when I have finally a five-leaved bulb at hand, I am nearly sure that this is the same as one of the *Challenger* plants seen at Kew. The bulb may be compared to that of a Lælia. It is fusiform, thick, with four furrows each side between the blunt broad ribs, shining, consisting of three joints under the leaves and over the stalk. Long fascicles of woody fibres are spread like single hairs, the remainders of the decayed sheaths. The two leaves are cuneate oblong, narrowed, blunt acute, bilobe at apex, very thick. You might compare them to those of the *enfant terrible* of sales, Epidendrum ciliare, that is brought forward now and then as a new Cattleya. The leaves correspond very well with the description and the measurements given by Mr. Spencer Le Marchant Moore, *l.c.*, where the representation of the leaf on the plate would rather appear to have been submitted to rules of perspective. This is the constant difficulty for the draughtsman, who might attempt at all events to give one of each organ in the real dimensions. I had then only a single flower, and I hope the full specimen has been kept in the Kew Herbarium.

According to my skilful fellow workman's representation, the peduncle rises from the axil of the sheath, standing under the upper leaf. This peduncle makes a rather surprising impression, as it is long and bears at the top a lax few-flowered inflorescence, that might rather be called a corymb, as the stalks of the inferior flowers are longer. When seeing it I thought of Bulbophyllum umbellatum, notwithstanding its flowers standing very close together. The substance of the flowers is remarkably thick. Sepals oblong acute, with a long blunt chin. Sepals narrower, apparently with inflexed apices. Lip trifid before the short claw. Side laciniæ triangular, upright, anterior lacinia much greater, obcordate. A thick, saddle-like, fleshy callus between the side laciniæ with two sharp keels midway, and sharp keels outside, constricted in a pandurate manner. Column short, trigonous, with a tridentate margin around the anther, without any hollow at the base of the foot. Sepals and petals light green, with red streaks outside, and broken lines of darker colour inside, which appear as rows of blotches or very short lines. The lip is light reddish with dark lines, longitudinal inside, transverse outside on the side laciniæ. The front lacinia has a light yellowish border. Callus white. Column whitish. Anther light green, with a tumid border. Pollinia quite genetic, fine orange.

Considering the plant in relation to its position in the system, we may regard it as the sister of Dendrobium macrophyllum (Veitchianum, Lindl.). There is only one objection. Amidst the mass of specimens I have of this there is not one that has not a really terminal inflorescence, while this has a lateral one. It is very desirable that the possessors of Dendrobium chloropterum should examine their plants as to this. As to myself, I do not know anything about the origin of the peduncle. I rely on the drawing of Mr. Spencer Le Marchant Moore, who is well known as being absolutely trustworthy. I have, however, the belief that the inflorescence may

be as well lateral as terminal ones. We have several curious instances in Dendrobia, some of which bring flowers at various seasons, nay, years, from various internodes of the same bulb. Such is the habit of Dendrobium tetragonum, as I have well observed in the Hamburgh Botanic Garden. If I remember rightly, Mr. T. Day, an excellent observer, told me he had seen such things in Dendrobium densiflorum, and I have seen the same in Dendrobium chrysotoxum and other species.

Mr. B. S. Williams, my assiduous correspondent, tells me the plant comes from New Guinea. I had a fine-leaved bulb from the Victoria and Paradise Nursery, where there are some specimens. The peduncle, however, also sent by Mr. B. S. Williams, came from Mr. G. Heriot, Cholmeley Park, Highgate, who is so famous for his enormous Phalænopsis flowers. *H. G. Rchb. f.*

DENDROCHILUM CUCUMERINUM, *n. sp.**

This is much like Dendrochilum uncatum, that flowered with Messrs. H. Low & Co.; it is, however, very clearly distinct, both its lip and column, which are both very different. The lip has a toothed brown auricle each base, running out in an aristate extrorse narrow process. The mid-lacinia is obcuneate, retuse, with an apiculus in front mid. Two fine brown stripes traverse the disc. The arms at the base of the column are much curved and artistically acute. The top of the whitish-green column is retuse, with a small square prominence in the centre The flower is light hyaline green, standing in an elegant distichous bent raceme. Flowers are as pellucid as those of Pleurothallis longissima. The bulbs may be compared to Cucumbers. They are, however, finally full of furrows. Leaves shining, as if varnished. The plant grows in close tufts, as I see from the specimen kindly sent by Mr. W. Bull. I am not informed as to the origin; the plant presents, however, a Philippinese appearance. *H. G. Rchb. f.*

HYPOXIS COLCHICIFOLIA, *n. sp.*†

This is a new species of Hypoxis, imported by Mr. Bull from the Cape, which has just flowered for the first time. Its nearest allies are H. Rooperi, hemerocallidea (elata, Hook. fil.), and latifolia. There is nothing particular about the flower, but the leaves look very unlike those of an ordinary Hypoxis, being broad, bright green on the upper face, and perfectly glabrous on both surfaces. In the shape and arrangement of the leaves and general character of the leaf-bearing stem it roughly resembles one of the more robust Colchicums, such as C. autumnale or byzantinum.

Corm globose, 2 inches in diameter, the outer tunics thin and dark brown. Tuft of leaves at the flowering time about 1 foot high, the outer three or four small and rudimentary; produced leaves 6—8, oblong, or oblong-lanceolate, the largest 6—8 inches long, 1½—2 inches broad, moderately firm in texture, quite glabrous on both surfaces, bright green above, rather glaucous beneath, with a strong midrib and numerous close transparent vertical veins. Peduncle central, not reaching to the summit of the leaves, very slender, slightly pilose, bearing 3—4 corymbose flowers with short pedicels and lanceolate bracts. Ovary green, obconic, slightly pilose. Expanded limb 1½ inch in diameter; segments oblong-lanceolate, bright yellow inside, greenish-yellow and slightly hairy on the back. Stamens half as long as the perianth segments; anthers oblong; filaments shorter than the anther. Style cylindrical, ⅛ inch long. *J. G. Baker.*

CATASETUM CHRISTYANUM OBSCURUM, *n. var.*

A very fine variety of the original type, having both sepals and petals of the darkest black-purple. The lip's side laciniæ are of a dark rich purple, the mid-laciniæ sepia-olive-green. The wall around the mouth of apex is light ochre, painted here and there with red. Column, green. I have to thank for it Mr. T. Christy, F.L.S. It is a great satisfaction to see the Cataseta, which flowered first in 1882, now improved; and this is decidedly a proof of the skill of the gardener at Malvern House, Sydenham—Mr. E. Leaney. *H. G. Rchb. f.*

* *Dendrochilum cucumerinum*, n. sp.—Pseudobulbis oblongo-fusiformibus demum rugoso-sulcatis pollicaribus; juvenibus monophyllis; foliis cuneato oblongis acutis, superne vernixiis; pedunculo tenui nutante; racemo disticho; bracteis brevibus ovaria subæquantibus; sepalis oblongis acutis; tepalis subæqualibus denticulatis; labello trifido; laciniis basilaribus semioblongis denticulatis antrorsis in laciniam angustam triangulo-aristatam divaricatam extensis; lacinia mediana longe porrecta cuneato-oblonga antice retusa apiculata; columnæ androclinio retuso cum processa mediano quadrato; brachiis supra basin columnæ uncatis. Flores hyalino viriduli; labellum castaneo pictum. Basi columnæ castanea. *H. G. Rchb. f.*

† *Hypoxis colchicifolia*, n. sp.—Cormo magno globoso; foliis productis 6—8 oblongo-lanceolatis erectis subcoriaceis utrinque glabris facie viridibus dorso glaucescentibus venis verticalibus hyalinis; pedunculo brevi gracili centrali parce piloso; floribus 3—4 luteis corymbosis pro genero magnis; bracteis lanceolatis; ovario obconico parce piloso, segmentis oblongo-lanceolatis ovario duplo longioribus; staminibus limbo duplo brevioribus, stylo cylindrico. *J. G. Baker.*

THE FALLING LEAVES.

CONCERNING an article on the above subject, which appeared in our issue of October 25, we desire to state that the figures in the summary of analysis should have been preceded by a decimal point in each instance, otherwise they are untrue, and consequently misleading.

Probably the following will be a more intelligible method of expressing the facts:—

Constituents in 100 lb. of Leaves and Stable Dung.

	Oak Leaves.	Chestnut Leaves.	Stable Dung.
	Lb.	Lb.	Lb.
Water	30 00	30.00	70.00
Nitrogen	0.54	0.67	0.50
Potash	0.17	0 38	0.40
Phosphoric acid	0.26	0 23	0.50

At first sight these results appear to show that dead leaves are almost, if not quite, as valuable as stable dung, but if we convert each of them into an equally dry and water-free condition, then we find that 1000 lb. of the dried materials will be as follows:—

	Oak Leaves.	Chestnut Leaves.	Stable Dung.
	Lb.	Lb.	Lb.
Nitrogen	7.7	9.6	16.7
Potash	2.4	5.4	13 3
Phosphoric acid	3.7	3.2	16.7

We see, therefore, that average stable dung when dry is weight for weight about double the value of fallen leaves in the amount of nitrogen it will add to the soil; about four times richer in potash, and five times more valuable in the quantity of phosphoric acid.

We find, also, that season has much to do with the chemical constituents of newly fallen leaves, for while the amount of ash which leaves will yield when they are burnt is fairly constant, the ingredients of the ash itself is subject to great fluctuation, as may be instanced by some investigations of Professor J. Nessler * in newly fallen Oak and Beech leaves collected in the seasons of 1867 and 1868.

Constituents in 100 lb. of Dry Leaves.

	Oak Leaves.		Beech Leaves.	
	Potash.	Phosphoric acid.	Potash.	Phosphoric acid.
1867	0.347	0 224	0 503	0.360
1858	0.232	0 073	0.282	0.104

Similar observations have also been made by Zöller and Rissmüller.

Leaves are valuable to gardeners chiefly because they are more rich in mineral substances than the different kinds of straw usually employed as litter, and which make up a considerable part of the bulk of stable dung.

When foliage is used as litter it should always be collected immediately after it has fallen from the trees, and placed in some dry place; otherwise rain will wash out the saline parts, and so destroy much of their manuring properties. *J. J. W.*

—— Having to take my whole supply of manure from spent hotbeds in which there is used one-third to two-thirds of leaves, I was much interested in the article "The Falling Leaves," p. 531. But a little reasoning soon told me how misleading the deductions made from the analyses were. Supposing there may be many gardeners situated as I am in regard to their supply of manure, at least in places where hot-water pipes have not replaced fermenting materials, I think my notes on the subject may be of some interest to others.

I have no doubt about the correctness of the analyses themselves, though I hardly thought that fallen leaves had so much value. Sachs says in his *Textbook of Botany*, p. 711, "When the cells of the leaves become emptied of their contents at the close of the period of vegetation, and the deciduous parts die off, not only the last portion of starch which was formed in the latter, but also the material of the chlorophyll granules is itself absorbed and conveyed through the leaf-stalks to the reservoirs of reserve material; all the serviceable substances contained in the leaves become incorporated in the permanent organs. The constituents of the Ash which are serviceable to the plant, especially phosphoric acid and potash, are conveyed with the starch and the protoplasmic substances to the persisting parts, so that the falling leaves thus consist only of a skeleton of cell-walls and of the subsiding products of metastasis which are of no value to the plant." That is about the same as is said in the beginning of the article alluded to, but I should think the writer means that rather more than "the larger part" is withdrawn. Be that as it may, let us suppose that the leaves picked on Nov. 13 had lost all they should, and that the analyses are correct, how much have we then got in 100 lb. of leaves of the three substances we regard as valuable manure—potash, phosphoric acid, and nitrogen? The analyses tell it plainly enough, we only have 3.4 lb. albuminoids, and these contain about 15—16 per cent. nitrogen, which makes .5 or ½ lb. of nitrogen, potash .17 or ⅛ lb., phosphoric acid .26 or about ¼ lb. To get the quantity stated in the article as contained in 100 lb. Oak leaves we want 10,000 lb. or 4½ tons. But I suppose when we take them wet from the park or hotbed we shall have to take about double the quantity. These figures have not much value for practical men; therefore a comparison with stable manure, as attempted in the article, would be of much value if correct; but this is even more misleading, at least from a practical point of view, for we only want to know the value of leaves compared with stable manure. The writer tells us that stable manure contains in 100 lb. 5 lb. nitrogen, 6 lb. potash, and 3 lb. phosphoric acid. Here I am fortunate enough to be able to refer to one of your own authorities. Mr. T. Macadam, in his article on Vine soils, August 11, 1883, says that a good sample of farmyard manure contains in 100 lb. .54 lb. ammonia (or about .44 nitrogen), .52 lb. potash, and .3 lb. phosphoric acid. You will find that your writer's quantities are about ten times too large for farmyard manure and a hundred times too great for Oak leaves.

To make an easy comparison we will take 10,000 lb. of each—farmyard manure and Oak leaves. In that quantity is contained:—

	Oak Leaves.	Farmyard Manure.
	Lb.	Lb.
Nitrogen	50	44
Potash	17	52
Phosphoric acid	26	30
Water	3000	7000

This looks very favourable, indeed, for the leaves, but the comparison is not quite fair, as may be best seen when we look at the constitution of water and remember that the analysis of Oak leaves of course was taken of dry leaves as picked from the tree. What enormous difference there is between dry and wet leaves will be known by every one who has handled them in both states, and it is easily understood when we remember that leaves are merely "a skeleton of cell-walls," which, of course, will get filled with water at the first opportunity, besides, a great deal of water will adhere to the surfaces. How much this water amounts to I am not able to say, but I should think it is more, or at least quite as much, as in stable manure. Only putting it at the same figure (for my own part I believe it to be greater) then the comparison looks thus: 10,000 lb. contain:—

	Oak Leaves.	Farmyard Manure.
	Lb.	Lb.
Nitrogen	35	44
Potash	12	52
Phosphoric acid	19	30
Water	7000	7000

This still shows leaves to be very valuable manure, though, of course, as every one knows from experience, they are inferior to stable manure; it will be

* *Jahresbericht Ag. Chem.*, xi., 360.

seen that it is mostly potash that is wanted, and this want is so much the worse, as most of our crops, principally roots and fruits, require much more potash than most farm crops. This defect I try to rectify by using wood-ashes, which, as known, contain a great deal of potash. But I am afraid it is not many gardeners in England who are able to produce much wood-ashes, and to say the truth I do not regard it as an advantage myself to be thus situated; it simply means that we still work in the old way, use big stoves and brick flues, and for fuel use green wood as taken from the forest. Most gardeners in England I am sure are not used to that way of stoking, neither are they familiar with that exclusive use of leaves and dung for bottom-heat which is necessarily associated with it. Certainly I do not recommend it, and I am doing my best to get the method changed and to get coal and hot-water pipes instead of it; and I have within the last few years got a couple of small boilers, for which I use coal, but I am not quite certain about the value of coal ashes: hitherto it has been mixed with the wood ashes, so I have no experience of its effects as used alone. I have the notion that it is nearly valueless or perhaps injurious, but should be very thankful for information about the matter, and England should be a good source in this respect. But I digress—it was to justify my interest in leaves and ashes.

About utilizing leaves there is not much to be said in general, it depends so much on locality. As the soil here is stiff clay or sand, I always use them (as hotbed manure mixed with dung) as manure direct from the hotbeds, or after another year, according to my requirements, and find their humus doing such good service in bettering the physical condition of the land that I do not care to destroy that part by mixing with lime or other caustic materials; but if I had a soil already rich in humus I should very likely do so. As recommended in the article, muriate of potash will, in default of wood-ashes, be a good addition to leaf-manure, as it supplies the wanting potash, and very likely is the cheapest form in which that important plant food can be bought. I believe I have seen somewhere that the chlorine (which with potassium in about equal parts make muriate of potash) contained may be injurious, but I never saw it have that effect when used in small quantities as an addition to other manures. *M. P. Andersen.*

THE MICROVEGETATION OF BANK NOTES.*

THE recent researches of Paul Reinsch in Erlangen have revealed the occurrence, on the surfaces of the coins of many nations, of different bacteria and two minute algæ (Chroöcoccus monetarum and Pleurococcus monetarum, P. Reinsch), living in a thin incrustation of organic detritus composed especially of starch-grains, fibres, &c., deposited upon their surfaces during the course of long circulation. This thin incrustation renders the coins very suitable for this microvegetation, but the same phenomenon is exhibited by paper money, and, indeed, by notes of clean, and to the naked eye, unaltered surface.

I have scraped off some of these minute incrustations with hollowed scalpels and needles, and divided them into fragments in distilled water that had been boiled shortly before, and, upon examining them with lenses of high power (R. T. Beck's 1-10th inch), have seen the various Schizomycetes distinctly.

I can now proceed to give a brief account of the results I have obtained from the investigation of the paper money. I have investigated the Hungarian bank and State notes, recent and old (from the years 1848-49), also Russian rouble notes, and have found bacteria upon all of them, even upon the cleanest.

On the surface of all the paper money is always to be found the special bacterium of putrefaction, viz, Bacterium Termo, Dujardin.

In the thin incrustations on the paper money I ascertained the occurrence of starch-grains (especially those of Wheat), linen and cotton fibres and animal hairs, and, in this deposit upon the florin State notes, the Blastomycete Saccharomyces cerevisiæ in full vegetation.

Various Micrococci, Leptotriches (many with club-shaped, swollen ends) and Bacilli are also the most frequent plants in the deposit on the paper money.

The two new species of algæ described by Paul Reinsch are very rare on paper money. The green Pleurococcus cells have been observed in some cases on 1 and 5 florin State notes, and the bluish-green minute Chroöcoccus on the border of the 5-florin State notes.

The vegetation of the paper money is, according to my researches, composed of the following minute plants:—

1. Micrococcus (various forms); 2. Bacterium Termo; 3. Bacillus (various forms); 4. Leptothrix (species?); 5. Saccharomyces cerevisiæ; 6. Chroöcoccus monetarum; 7. Pleurococcus monetarum. From a hygienic point of view, an investigation of the commonest household objects, and especially of books, &c., used by students, may not be superfluous. *A. K., Klausenburg, Hungary, in "Bulletin of the Torrey Botanical Club."*

* *The Microvegetation of Bank Notes.* By Dr. Jules Schaarschmidt, Privatdocent of Cryptogamic Botany and Anatomy of Plants, Assistant of the Botanic Institutes and Royal Gardens, Hungarian University, Kolosvár.

NARCISSUS PSEUDO-NARCISSUS AND ITS VARIETIES.

MANY of us would like to know more of the natural history of that variable species, N. Pseudo-Narcissus, the Trumpet Daffodil—what varieties there are which are really indigenous to any country, and to the production of which cultivation has given no help, and what is the native country of each of these varieties. It is probable that much information which is not at present before the public could be given on the subject, and any addition to our present rather scanty stock of knowledge would be welcome. I know there are some who believe that botanical science in this particular department has been retrogressive since the days of Parkinson, and with a deference to antiquity worthy of the ancient Stoics, think that we have only to rediscover what our ancestors knew in order to attain perfection in knowledge of Daffodils. However this may be, it is well to review what we at present know on the subject.

The wild varieties of N. Pseudo-Narcissus may for convenience be divided into four sections:—1, typical N. Pseudo-Narcissus; 2, var. bicolor; 3, self-yellows, or so-called Spanish Daffodils; 4, white-flowered. I have never seen a wild Daffodil which I could not at once assign to one of these sections, though it is easier for those who have studied Daffodils to recognise them by their general appearance than to define in writing their distinctive characters.

To speak of each section more in detail we begin with No. 1, the only section which has a truly wild representative in Great Britain—the common Lent Lily. Having examined an immense number of specimens from many parts of the country I find them vary but little, and within narrow limits. Some have the perianth petals pure white, and some have the trumpet darker than others, but the general type is the same. The trumpet becomes somewhat wider near the mouth, which is indented rather than lobed, and generally not much reflexed, but from Ayrshire and Dorsetshire I have had specimens from fields where the prevailing type has the mouth widely spread and reflexed. In two places specimens all white and all yellow occur mixed with the common form, but I feel sure that these are hybrids having their origin in cultivated varieties planted with the wild. In the South of France, near the base of the Pyrenees, the typical form of N. Pseudo-Narcissus varies much both in size and colour. Most of them have the trumpet paler than in England; sometimes it is quite as pale as the perianth, but though the latter is found pure white, I have never seen a white trumpet in this class. In cultivation this section passes through many gradations of size, under the names of Cambricus, Telamonius, double and single, Princeps, &c.; but though some of these are naturalised in fields and orchards, in many parts of the kingdom, I think it probable that all are of garden origin. The form called Telamonius is found both double and single, apparently wild, in the meadows by the Arno in Tuscany; but its existence along the banks of one river, and that often flooded, is hardly evidence of indigenous origin. Exactly similar single and double flowers are found growing together in orchards in Cornwall.

Of section No. 2, the bicolor class, the best wild original I have yet been able to find is N. muticus, or abscissus, which grows in profusion in many parts of the lower slopes of the Pyrenees, and which in its larger forms corresponds with some of the garden varieties of bicolor. It flowers late, has broad and thick leaves, and a cylindrical trumpet, hardly enlarged, or lobed, or reflexed at the mouth. Wild specimens have been sent to me hardly differing from the lorifolius, or rugilobus of gardens. Others have the broad elephant-eared perianth characteristic of the cultivated bicolor; but I have never seen any with the perianth pure white, and only suggest this origin in the absence of evidence of any other coming nearer the garden form.

In section No. 3—the self-yellows, or "Spanish Daffodils," as Parkinson calls them—I can get no direct evidence of any indigenous to Spain, except N. minimus, which was found there in abundance a few years ago by Mr. G. Maw and Mr. Harpur-Crewe, from whom I received bulbs. The character of the section, besides colour, is the large trumpet, widely expanded at the mouth and divided into deeply incised lobes. Are minor and major in this class wild forms or gradual developments of cultivation? With regard to that very interesting member of this section, the Tenby Daffodil, botanists seem always to believe that it is an introdured plant, though it is remarkable that until recently sent from England by Mr. Barr, the form was not known in Holland.

Section 4, the white-flowered Daffodils, have lately been found at a high elevation in great abundance on the Spanish side of the Pyrenees. The variety seems to be that known in gardens as N. cernuus. Whether the other garden forms are developments from this in cultivation, or whether they still remain to be found wild, is uncertain.

The above is a summary of all the authentic information I have been able to collect about wild varieties of this species. Conjectures and theories are of little value, but any one who can give additional information will, by doing so, help to clear up a difficult question. Unfortunately Daffodils flower at a time when few English tourists are on the Spanish mountains; still, the flowering season is not short, lasting from the beginning of February on the shores of the Mediterranean to the middle of June at an elevation of 7000 or 8000 feet on the Pyrenees. *C. Wolley Dod, Edge Hall, Malpas, Nov. 8.*

PRESERVED VEGETABLES.

THE preservation of vegetables and fruit (using the ordinary nomenclature to distinguish between these commodities) was well represented at the Health Exhibition, and the different methods of preservation illustrated. The exclusion of atmospheric air from the vessels containing them is among these methods; and this was effected many years ago by filling up the vessels containing the articles to be preserved with hot water or hot syrup. As long ago as 1807 Mr. Saddington obtained a premium from the Society of Arts for his method with hot water without sugar. He placed the fruit in a vessel of cold water, and heat was applied till it rose to the temperature of 160° to 170°. After standing in this temperature for half an hour, the vessels were filled with boiling water to within an inch of the top, and then hermetically sealed. Fruit and vegetables are still so preserved, a little alum being generally added to the water in the vessel for the purpose of hardening the tender skin of the fruit. A process not very unlike the preceding is that which consists in the destruction of the oxygen air in the vessel by heating the substance in it. This was M. Appert's plan, who in 1810 obtained the reward of 12,000 francs offered by the French Government for the best method of preserving food. In this process the vessels were wired and corked from the beginning, and kept so throughout. Another process was the artificial exhaustion of the air from the vessel. Various patents have been taken out to effect this, and in some cases arrangements were made for the admission of carbonic acid and other gases, or salt and water, or a warm solution of gelatine, into the vessel to supply the place of the exhausted air.

Vegetables are very successfully preserved by heat. Common kinds, such as Carrots, Turnips, Onions, and Parsnips, have been put up in large quantities for shipping purposes and exportation. It is to the French preservers, the disciples of M. Appert, that we look for the best productions in the higher classes. Beans, Celery, Spinach, Artichokes, Asparagus, and especially Tomatos, are so well preserved by the best French manufacturers that though they lose somewhat of their flavour they may be served by good cooks to the most critical company; while for soups, entrées,

stews, and also for garnishing the tins of *macédoines*, (mixed vegetables), are found most useful. But of all the vegetable preserves the tinned Peas hold the highest place. The best are preserved without any use of copper, their colour being retained, or rather restored, simply by a little Spinach juice. At South Kensington Messrs. D. A. McCorquodale & Co., of the Lochty Preserving Works, Carnoustie, N.B., exhibited Carrots, Onions, Parsnips, and other vegetables preserved in tins. They were most excellent, and having been prepared in pure spring water, without the addition of anything whatever, many connoisseurs considered that their flavour was actually improved—the cause, probably, of this being that the tins being pierced ("brogged") immediately after being taken out of the hot baths, as in the case of meat preservation, the air escapes, but the flavour and substance is retained by their being hermetically sealed up again. It is only within the last few days that newspaper correspondents in the Soudan have intimated that a large supply of such vegetables would be most acceptable "at the front."

The American preservers now send us, in tins large quantities of preserved Tomatos, a vegetable, (perhaps I should say "fruit") found, in some form or other, on the table at all meals across the Atlantic, but strangely neglected among ourselves. They are, perhaps, somewhat inferior in flavour to those produced in the South of France, but their cheapness should recommend them. From America we get, yearly, many thousands of tons of the various sweet products of Transatlantic gardens and orchards. In many parts of America, California, for instance, which seems likely to become "the garden of the world," fruit is a mere drug in the market, the supply of Peaches, Apricots, and Pine-apples, to say nothing of what we consider more common fruits, being unlimited.

The display of jams was, as might have been expected, very extensive; and one of the most attractive displays in the machinery in motion department was the admirable plant of Messrs. Pink & Sons, who showed the whole process of jam-making with different fruits as they came into season. The products of this well-known firm are sufficient in themselves to recommend them to the public; but the method of production, as illustrated at South Kensington, will doubtless lead to a still further patronage of their most excellent preserves, to which have been awarded high honours. Among other jams most worthy of notice were those ("whole fruit") shown by Bloxall & Co., of 70, Lamb's Conduit Street, W.C.; and special attention should be called to their Blackberry jam and jelly. Letters have recently appeared in more than one of our daily contemporaries reflecting on the general neglect of this fruit in many parts of the country. During a recent visit to Ireland I noticed that this neglect was very general, no one apparently caring to take the trouble of gathering of the unusual abundance of these berries, which hung exuberantly on the Brambles on every hedge, and in the woods. In Yorkshire and Lancashire there is a great demand for them, and the poor gather them for the jam-makers, who retail the preserve at about *6d.* per pound, and seldom can obtain a sufficient supply of fruit to meet the demand for jam. It is more than probable that the Bramble, if cultivated, would yield per acre a greater profit than any other fruit shrub or tree. The systematic cultivation of fruit for jam-making had attention directed to it by the display of the jams of Mr. T. W. Beach, who has in hand a fruit-farm of some 500 acres on the property of Lord Sudeley, at Toddington, in Gloucestershire. The establishment, however, of such an enterprise may be taken as an augury of the future development of jam-farms, in accordance with the advice given not long ago by Mr. Gladstone to the British farmer. Well-made jam is a most wholesome and nutritive article of food.

Desiccation. — The process of desiccation, or drying, is far better adapted to the preservation of vegetable than of animal substances. In this country the first recorded patent for the preservation of vegetables by desiccation was granted in 1780 to John Grafer, who dipped his vegetables in boiling salt and water before drying them. In November, 1850, Masson obtained his patent for drying and compressing them, so that they were reduced to one-seventh of their original bulk, a cubic yard containing rations for 16,000 men. The French, with M. Cholet at their head, have been very successful in this line of preservation, which has been followed by several English firms. C. Prevet & Co., of 134, Fenchurch Street, E.C. (who have now succeeded to M. Cholet's business) had one of the most interesting shows in the Exhibition, comprising chiefly dried vegetables, either as "chips" or in a compressed form, the whole dried Savoy Cabbage being a marvellously good exhibit. These dried vegetables, and especially those compressed in tablets, have become indispensable to sportsmen in wild districts, and to all in camp or at sea, having been largely used in all campaigns all over the world, since the Crimean war down to the present Soudan expedition. Cholet's "Julienne," which is composed of no less than nine kinds of vegetables and seasoning herbs, according to the recipe of the late *chef*, A. Soyer, is a most useful and tasteful combination; and the condensed vegetable soups of the firm are in every respect most admirable productions. And it may not be out of place here to mention their compressed "Bologna meat," known by the name of "Mortadella," which is all that the most fastidious *gourmet* can desire. Another admirable vegetable preservation at South Kensington was Edward's desiccated Potatos, exhibited by F. King & Co., 6, Bishopsgate Avenue, E.C., which are easily converted into dishes of "mashed Potato" without any loss of mineral salts and acid, as testified to in a Blue-book recently presented to Parliament, and containing a report of the committee on the outbreak of scurvy in the Arctic expedition, which shows the necessity of the Potato element in diet. This preparation, and the desiccated soups of the same firm, were largely used in Mr. Stanley's African expeditions, and have been abundantly supplied to the troops on the Nile expedition. Considering the high price generally charged by greengrocers for vegetables, and the waste in utilising them in almost every household, all housekeepers, even the poor, would probably do well to turn their attention to dried vegetables, and experimentise upon them. When soaked and carefully boiled they will be found not only economical in their use, but excellent in soups and stews, and even for eating with roast or boiled meat in lieu of ordinary fresh vegetables. *J. J. Manley, in the "Journal of the Society of Arts."*

CASTLE HILL.

The Forlescues, although not found at home, like the Crewses, "when the Conqueror came," have been settled in North Devon since the eleventh century, and now Lord Fortescue has around him at Castle Hill no less than 20,000 acres of good Devon soil. Sir John Fortescue, who was Lord Chancellor in 1461, and who was powerful enough, albeit a Lancastrian, to tell some home truths anent the English monarchy to the fourth Edward, was born seven miles off, at Barnstaple.

The old seat of the Bourchiers, Tawstock, is only about three miles up the Taw from the town favoured of the hero of Brunanburgh. This corner of Devon must then have had an important share in the government of the realm. Chief Justice Fortescue had but a mean opinion of the French, for, saith he, "Wherefore it is right seld that Frenchmen be hangyd for robbarye, for that they have no hertys to do so terryble an acte." Also it is this "lack of hartes and corage that kepith the French men from rysyng." All the Fortescues have been good men and true, and prime favourites around Exmoor, where a parson, unless he can shoot flying, like "Parson Bowden," and follow the chiming hounds after the wild red deer, is not of the approved pattern, and where an *argumentum baculinum* could, until far into our degenerate days, always be counted on at Dulverton Revels or South Molton Market.

The hereditary mansion of the family at Castle Hill is built at the sunny foot of a woody knoll, and is a rectangular building, of which the length is double or triple the breadth. The east and west wings of the long south front are built in the same style, and project slightly from the centre mass of building. The ground facing is a gentle ascent flanked by two shallow and fertile dales, one on either side, adown the eastern of which flows the Bray, where salmon harbour as well as trout. Immediately in front of the house, looking stright up from the south front, is a stretch of greensward, culminating in a green drive or avenue, which is closed at the turn of the upward undulation by a triumphal arch.

There are some parks that attract the fancy more than those which are far larger, of which this is one. Within its confines are no avenues like the Long Walk at Windsor, nor no Heaven's Gate as at Longleat; but it has a quiet peaceful beauty unsuggestive of grandeur that strikes a sympathetic cord in English hearts. Besides the glancing stream of the Bray, a tributary of it with plashy and sedgy brim, along which the village children have right of way, also winds through the park. The red Devon cattle which crop the herbage are the most effective of all in a landscape. In the near distance the church spire shoots up heavenward, and is seen through the embowering trees. And on the western side of this paradise, high above the tributary stream, is the hithermost shoulder of Oxford Down, russet-hued, and topped with scattered Firs. In the rear the tall Beech trees come close up to and seem to overshadow the house. In the park some trees are old and in a state of decay, but the majority are tall and vigorous, as befits a fertile soil. The finest are the Chestnuts, two very tall ones having girths of 17 feet and 23 feet 6 inches, 6 feet up the trunk. The bulk of trees that cover the eminence behind the house hide the deer park from the view which trends northward and towards Exmoor, across a pleasant upland, broken up by timbered coombes, as these Devon valleys are called.

The pleasure-grounds were formed in 1740, by which lord I do not know, but "*Si monumentum quæris circumspice*" is true to the very letter in his case. The flower garden doubtless has been altered, but the peaceful walks among the Beechen glades are very much as they were in the past. These wind up and around, in constant convergence and divergence, the umbrageous convex knoll at the foot of which the house is built. Round the base on the west side flows the tributary of the Bray. A short distance from the house, at a point where some Yews overshadow the stream, a path follows the winding of the banks. Following this path you come to a grove of old Yews that darken the surface of the stream below, and stand, as it were, as grim guardians of the "Sybil's cave." Close adjoining is an ancient moss-grown stone bridge green with Ferns in every cranny. The scene has the impress of a bygone time, and must have been a quaint device of some Elizabethan Fortescue. The valley further on is thickly studded with trees, and the walks that stretch up it are bordered by the perfection of woodland greenery. All the world wots of Exmoor Ferns and mosses, and here they are to be found in their element. The trees are chiefly Beech, and one huge fellow, standing sidewards in a natural dell, is a monarch amongst his fellows. Artificiality is nowhere apparent, albeit the walks extend for between two or three miles in this direction. The paths which lead to the top of the knoll are all springy and moss-grown, and edged on both sides—*i.e.*, upwards and downwards—with masses of Blechnum spicant and other Ferns, and the most lovely mosses imaginable. Further back, under the Beeches, the ground is covered with Whortleberries and Rhododendrons, a carpet of seedlings growing under and around them. Half-way up is an old stone cross with an inscription to the effect that the beauty of the scene ought to turn the thoughts Godward. It is well needed too, for though George Herbert might have found here the peace he sought for, yet full many, like Charles, Duke of Orleans, would retire here when disgusted with the ways of Courts, and seek "*le Dieu Nonchaloir.*" Higher up is "Sunset Temple," from which the distant sea is visible, the intervening ground being a true Devonshire coomb. On the summit is a sham castle, which, erected in the last century, is now moulded by Nature into conformity with the scene around. From here is a magnificent prospect down the Bray valley on one side, and on the other over the deer park. There is no county like Devonshire, and there are few more peaceful scenes than this. And though the ascent is but slight, the picture obtained is one of great loveliness, and as fine as that from more renowned mountain heights. Numerous pretty walks, but not of the like sweet woodland character, lead down the north side of the knoll. About half-way down another pilastered temple is met with. Eastward of this is a broad expanse of lawn, with numerous fine Conifers; a Douglas Fir, said to be 80 feet high, and a very old Pinus insignis, are the most noticeable.

Along the south front of the mansion is a large terraced flower garden, with a balustraded wall next the park. This garden is extremely well designed, and the quantity of bedding and other plants very large, and very harmoniously arranged. Irish

Yews stand at frequent intervals like sentinels, and contrast with the rotund looking Biotas. A gracefully carved stone seat is "erected to the memory of my dear old hereditary friend, E. S. Drive, the squire of Grange; generous, frank, genial; a staunch Whig, a good landlord and sportsman;" on the opposite side is another of the same pattern. I would like to linger and describe this elegant though formal garden at further length, but fear it might be wearying to the reader.

The kitchen garden is close to the house, and although an old site it has been remodelled and greatly extended within the last ten years. It has a direct southern exposure, and is well protected on the north and north-east sides. The soil is fertile and the crops of every kind are of excellent quality and quantity. The fruit trees are mostly young and fresh planted, and those on the dwarfing stocks.

The plant-houses are many and contain clean well grown specimens of Clerodendron Balfouranum Phyllanthus nivosus,and Phalænopsis amabilis, Ixoras and Crotons, and other popular subjects. A Peach wall, 350 feet long, has been covered with glass, the enclosed space being 10 feet in width at the ground level; this is one of the most imposing houses in the garden, the trees in which are mostly young. The varieties grown include most of the sorts cultivated in England. Pines have been for a long time grown well here, the house devoted to them is 160 feet long and is divided into five divisions, and is double-glazed at the sides to prevent the escape of heat. A more magnificent and healthy lot of plants it would be hard to find, the Smooth Cayennes averaging at a low estimate 7 lb. The good crop of fruit on the trees in the quarters has already been alluded to; that on the walls is equally abundant.

I had intended to walk from Castle Hill to Malmsmead, following the route of Master Jeremy Stickles. For who can resist revisiting, when breathing the same air, the spots made so famous by our great pomologist, Mr. Blackmore? However, the attractions of Lord Fortescue's beautiful domain were so many that it was mid-day before a start was made. *C. A. M. Carmichael.*

FERNERY AND ORCHID-HOUSE AT WOOLTON WOOD.

MANY of our large gardens have a planted-out rockery or a fernery under glass, and that part of the establishment always comes in for a large share of admiration. This is not to be wondered at, for the Palms, Ferns, and other plants employed in their embellishment, when left to grow naturally, have so much more beauty than is found when they are arranged in pots, which is in a great degree owing to their more luxuriant growth. Our illustration (fig. 111) gives a view in Mr. Holbrook Gaskell's fernery at Woolton Wood, near Liverpool, whose garden was described in our issue of Oct. 4, p. 436. Our illustration, of course, gives but a glimpse of a portion of the house, and fails to present the interesting caves and rocky terraces beyond, which are clad with such a profusion of loveliness. The illustration fig. 112 gives a group of plants in the Orchid-house, showing some of the fine Phalænopsis which are so well grown at Woolton Wood.

HERBACEOUS PÆONIES.

THESE very gorgeous subjects are not half so much planted as they should be; this, I am convinced, is owing to the comparative amount of ignorance amongst gardeners respecting them — I mean as regards the charming variation now obtainable. Of course their value as garden ornaments is patent to all who have seen a fairly representative collection. Some of the varieties, especially the white, primrose, and yellow-shaded kinds, usually exhale a very agreeable perfume. The delicate shades of pink exhibited are also very beautiful, while the deep reds and crimsons are most imposing. There are few gardens which should be without a fair number of them, while in large gardens they should be well represented, for well-established large clumps present a most attractive appearance, resembling—as, indeed, they were once named and admired in a leading provincial show (I will not mention where) — as "big Roses"; but they appear before the queen of flowers.

While, however, I would strongly recommend them to all interested in hardy flowers, I would urge the importance of judicious planting as regards position. For example, do not plant special beds or blocks of them, or such spaces will be devoid of floral display during a large portion of the year; the proper place for them is in the mixed border, shrubbery, or woodland, where, when in bloom, their gorgeous beauty will be thoroughly appreciated, and yet when they put off their gay dress there will not be the appearance of excessive barrenness. Where old stools exist, it is desirable to treat them liberally to manure at the present time—in my opinion preferable to doing so in the spring. It is an excellent plan to remove a spit of soil from the plants, and place a good supply of rotten manure about the roots, afterwards putting the soil back in its proper place. This method is much better than digging manure indiscriminately about the plants, especially if the soil is light and gravelly, as much of the goodness is thus lost to the plants. Where fresh plantings are intended, no time should be lost in making them. They are not fastidious as regards soil, but do best in a good holding loam, in which there will be less need of manure than with light sandy soil; with the latter an abundance of manure is absolutely necessary to ensure success.

In all cases it is desirable to trench or deeply dig the ground as the roots are large, fleshy, and grow very rapidly, consequently freeness of soil at once suggests itself. And here let me offer a hint, in cases where stiff or clayey soil exists: when planting in such, see that some loose free soil is placed about the roots, and well worked amongst them, so that the young ones can lay hold of it, and thus get partially-established previous to rooting into the less congenial stiff soil. If stiff lumps of the latter are placed against the roots it is more than probable that hollows will occur, affording ready means for severe frosts to cripple, if not destroy them altogether. Having accomplished the planting, nothing more will be required until spring, when the young shoots will require staking, and it is advisable to get this done early, as they grow rapidly, and being rather fleshy are liable to be easily broken off or injured by wind.



FIG. 111.—VIEW IN FERNERY AT MR. GASKELL'S, WOOLTON WOOD.

The number of varieties to select from is now very large, and there are also several natural forms and types or species which are well worth growing. Indeed, I think some of them are very showy: for example, P. tenuifolia, with finely-divided foliage and deep crimson flowers; the double form of this is one of the best border flowers in cultivation. Corallina produces single reddish-pink flowers, and is very handsome. Witmanniana is a single yellow-flowered, very beautiful plant, and, unfortunately, far too rare. Indeed it was almost lost to cultivation, but I am informed some good patches of it have been found in some old gardens in Ireland, and we are likely to see more of it in a few years.

Pottsii and the white variety, Whitleyi officinalis, and its double form (the common double crim-

son so freely met with in gardens), the typical sinensis arietina, paradoxa, and Browni are all handsome kinds, well worth the trouble and space required for them. But when one comes to the almost innumerable varieties now offered by English and Continental firms, which are mainly the progeny of albiflora, sinensis, and officinalis, it is perplexing. Fresh varieties, the result of hybridisation, are constantly finding their way into the market, so that one collection known to the writer contains nearly 400 named kinds; but it is doubtful whether a fourth of them are really distinct. The following varieties are all really good and distinct:—Alba superba, creamy white—very double and large; Artemise, rich purplish-pink, and tipped with white; lutescens, outer petals creamy-white, yellow at the base, inner ones yellow, the staminodes often carmine, sweetly scented—a charming form, very dwarf and free; Monsieur Rousselon, outer petals rich pink, inner ones blush, flaked carmine; Marshal MacMahon, deep purple-crimson—immense and very double; Marie Lemoine, delicate rose-pink and white; Queen Victoria, salmon-rose outside, the centre blush and white, frequently flaked carmine—very large and exquisite; Souvenir de Gasper Calo, purplish-rose, blushed and edged with white; Washington, dark rose, the centre sometimes carmine-flaked; Wellington, rich sulphur self—very double and large. *T.*



Fig. 112.—View in Orchid-house at Mr. Gaskell's, Woolton Wood. (see p. 652.)

tipped white—very full; Beauté Française, pale pink, tipped white, and often feathered crimson—a most beautiful variety; Caroline Allain, petals soft blush, sulphur base, tipped white; Charles Binder, rich lilac-purple—immense; Charles Van Geert, pure white—very large and double; Dr. Calot, very pale blush or salmon, sometimes tipped carmine—a most charming variety; Clarisse, rosy-pink, deeper at the base; Dr. Brettoneau, Anemone-flowered, white, slightly blush at the base; Duchesse d'Orleans, Anemone-flowered, outer petals rosy-lake, inner ones salmon-rose—very fine; Eugène Verdier, rosy-pink, pale centre—very large; grandiflora alba, immense double white, sometimes crimson-tipped; grandiflora carnea, soft flesh; grandiflora triumphans, pale pink, shading off to nearly white—a grand variety; Madonna, deep rose, centre petals feathered

DELPHINIUMS.

These rank amongst the showiest and most distinct of hardy perennials, and the outdoor garden, without them, is like a conservatory without Camellias, and is short at their season of a unique kind of beauty, for there are no other plants which can take their place. I refer now more particularly to the many beautiful garden varieties which have been so easily obtained through the cross breeding of normal and hybrid forms—some are double, others semi-double, while some of the handsomest are single flowered. I do not disdain any, but love and grow the old species by whatever name known, but for general garden ornamentation the palm must be given to the hybrid forms, than whom no one perhaps did more to make known than Mr. Robert Parker, late of the Exotic Nurseries, Tooting, who had in his time an excellent collection. There is not much difficulty attending their culture, as they are by no means fastidious. Like most flowers they have a few dislikes—such as absolute shade, very wet, stiff, undrained soil—and they do not hold their own against a strong muster of slugs. The last I find their greatest enemy, especially the small black leathery creature; these completely destroy the plants by eating away the buds as fast as they appear, and I have found it sometimes a difficult matter to get rid of them. The "early bird catches the worm," and no method for eradicating them is so sure as examine the plants at break of day, and when secured, drop the depredators in a jar of brine. Delphiniums revel in a good depth of soil—rich sandy loam, to wit, and plenty of rotten manure—then you will get stems like walking-sticks. The finest Delphiniums I ever saw were at Mr. Joseph Stevens' garden, at Byfleet, in soil of this character, which had been well trenched and manured, they were magnificent, and I believe they still are in the same place. So when planting fresh stock, do not simply stick them in the ground with a trowel, but take a spade and dig two spits deep, burying good rotten manure at the same time, after which put the plants in. Where the ground is free from slugs, and good strong plants can be obtained, I should recommend them to be planted as early as possible; but if these conditions do not obtain, it will be better to pot them, and keep in a cold frame until the young growth is 3 or 4 inches high in spring, when a much greater chance of success may be expected. It will be best to defer dividing already established roots until they commence growth in spring. Young cuttings taken off with a heel will root pretty freely in a close frame or cool house, and produce good plants the same season if planted out. It is important that staking should be done early, as the young stems are very fleshy and liable to break off. When the flower-spikes are past their best, have them removed so as not to allow seed to ripen, as this not only exhausts the plants to no purpose (unless seed is required) but prevents an early second crop of flowering stems making their appearance, which is the case if the first stems are quickly cut away.

I might name many varieties of the first order, but the following occur to me on the spur of the moment, which I know to be well worth growing and not at all difficult. Single flowered:—Belladonna, pale azure-blue, a dwarf and very charming free-flowering kind; Agamemnon, deep blue, with metallic centre, very vigorous; Enchantress, azure-blue, with bronzy-rose centre, producing magnificent spikes; Madame Chate, sky-blue, white centre, very large flower; Gloire de St. Maude, brilliant marine-blue, suffused with pink, immense spike, one of the finest varieties; Pulchrum, lavender, white centre, very free; Barlowi, dark blue, shaded bronzy-red, dwarf, and very effective; Hendersoni, brilliant blue, white centre, dwarf and free; Nahamah, bright glistening blue, crimson shaded; Madame Richalet, cobalt-blue, rose-tipped and suffused. Double and semi-double varieties:—Arc en Ciel, sky-blue, very double; Pompon Brilliant, violet-blue, lilac centre, very double, and a dense spike; Ranunculæflorum, lilac, the edges sky-blue, very free. Triomphe de Poissey, sky-blue, suffused rose, semi-double, very large; Globe, pale lavender, white centre, very double; Herman Stenger, violet-blue, centre rosy-lilac, very double and free; Keteleeri, pale blue, suffused lilac, grand spike; Jules Bourgeoise, amethystine-blue, pink flushed, very double, one of the best I have ever seen. *R.*

FLOWERS IN SEASON.

That there are still many of our choicest open-air autumn flowers gay with perfect blossoms in spite of our being now in the middle of November, we are reminded by a small collection of border flowers from Mr. Paul's nursery at Broxbourne, where they are grown on the rock garden. Of these Aster grandiflorus had still undimmed purple flower-heads with a bold yellow ray; a showy plant in masses in a border, or, still better, in a bed on the turf. Somewhat of the same colour, but with an eye bolder and larger, was Erigeron glaucus. The yellow Achillea tomentosa, another plant good for rockeries, with orange flowers. The delicate Iris stylosa, of the colour of the Neapolitan Violet, and large Linaria grandiflora, with a dark purple inflorescence of miniature Snapdragons; the yellow Crocus-like Sternbergia lutea, of an unusual colour in autumn-blooming bulbs. The pale purple Cheiranthus mutabilis, which Mr. Paul states had been blooming on the rockery for a whole year. A gem is Geum miniatum, orange-scarlet in colour; and, last and least, Cyclamen græcum, a pink and carmine bloom, small, but grateful at this season,

Notices of Books.

Les Plantes des Alpes. By H. Correvon, Directeur du Jardin d'Acclimatation, Genève.

The name of M. Correvon is already familiar to readers of the *Gardeners' Chronicle* as the writer of some useful notes on the cultivation of alpine plants, founded on an experience gained whilst curator of the Botanic Gardens at Geneva. He has now given us, in French, a small book on the same subject, containing some 260 pages of post 8vo, printed in large clear type.

The Jardin d'Acclimatation of Geneva was instituted last year, and seems likely to play an important part in the distribution of alpine plants. M. Correvon tells us that a few lovers of flowers, amongst whom he seems to have been the leading spirit, being horrified at the enormous number of alpine plants which are every year dug up in the Alps by tourists of all nations, and taken home when in full flower only to die, thought this the best remedy. "This new horticultural establishment," he says, "has for its object the raising of large quantities of the choicest alpines, to offer them to amateurs at a low price. We hope to be able to supply foreign nurserymen with these plants from seed, so they will have no more occasion to get their stock from the mountains."

After a hundred pages about the origin, and distribution, and native conditions of alpine plants, we come to the more practical part of the book, which concerns their selection and their cultivation. The flora of the Alps, we are reminded, is the richest in the world, containing about 230 species of flowering plants, which are found nowhere else. M. Correvon estimates that out of about 900 species of flowers found in the alpine districts upwards of 700 are worth cultivating. About fifty of these have hitherto defied all attempts to tame them, but even of these M. Correvon does not despair. Perhaps half of the remainder may strictly be called mountain or rock plants, but besides these we have a catalogue of all the best rock plants in cultivation from all the mountains in the world. These are all arranged according to their botanical orders, and the soil and aspect in which each is to be planted are given. We extract two examples of the way in which the directions are given:—

Polygala chamæbuxus.—A somewhat capricious plant; sometimes it grows very well in ordinary soil, provided it has shade, whilst in other cases no care or precautions will make it grow. In general it prefers bog soil, moisture, and sunshine. I have raised it from seed, and cultivate it in light soil mixed with sphagnum.

Gypsophila repens.—Indigenous to limestone rocks, but it grows so readily that one meets with it everywhere, even on granite. It is one of the best of rockery plants; it flowers from May to November, and suits itself to all soils and all aspects. It is also a useful basket plant, because of its long hanging branches, which are very effective when loaded with flowers.

These extracts are sufficient to show the style of the book; for the cultivation of some plants we have more precise and detailed directions. All who grow alpines know how difficult a plant Soldanella alpina is—not to make grow, but to make flower, and it is interesting to read the minute details of the plan by which M. Correvon succeeded in making it flower well.

The chapters which deal with the formation of rockeries and alpine beds cannot fail to be read with interest. We are rightly told that many alpines may be grown quite as successfully in level borders as on steep rockeries, provided the conditions of drainage and soil are suitable; if the soil is heavy and wet these defects may be remedied by the bed being raised 2 feet above the ground level, though it is not wet, but stagnant wet, which hurts alpines. We cannot, however, entirely agree with M. Correvon in the directions he gives for the formation of a rockery, when he speaks of cementing the stones together. Stones for a rockery ought to be so fitted as to interlock firmly without any possibility of their either sinking or slipping, and ought not to depend on the soil, or on mortar, for being kept in their places. There is one more point to which we would direct the special attention of those interested in the growth of alpines—the way in which old walls may be utilised for this purpose. In the concluding chapter of the work we have this subject treated of in such a way as to make us wish we could convert all our boundary walls into alpine gardens. We are told on the last page that the growth of alpines is "more a question of suitable conditions of soil than anything else," and we may say that every year's experience tends more to convince us of the truth of this maxim.

HERBACEOUS OR MIXED BORDERS AND BEDS.

It is to be hoped that the fashion of ribbon borders and beds, planted or filled with only a few kinds of plants, is now over, and that we shall in future see more variety in our gardens, which mixed borders and beds will afford, as instead of the red, white, and blue in endless long lines, or great masses of yellow and scarlet that may be seen afar off and taken in at a glance.

We have scores of perennials, biennials, and annuals that will make a fine show, and afford fresh interest nearly all the year through; very early in the spring there are hosts of bulbs that send up their gay flowers, and these are succeeded quickly by tuberous-rooted and other herbaceous plants till quite late in the autumn or winter. Even now Anemones are quite gay, and so indifferent are they to cold and frost that I have seen them with their many-coloured blossoms peeping up through the snow, and only waiting for the sunshine to unfold their bright petals, while later on the same plants have been radiant with bloom, which has been so thick as to almost cover the ground. Besides Anemones just now there is the Sternbergia, or Amaryllis lutea, with its rich yellow Crocus-like flowers, that seems proof against all kinds of weather, as they nestle among the foliage and brave the most pitiless storms. The same may be said of the Christmas Roses, which are earlier than usual this season, as many are now in, the first being Helleborus niger maxima, which is the finest and best of them all. Although these Hellebores do so well in some places they refuse to grow in others, either from unsuitability of soil or situation, and yet they may be found flourishing equally well in quite heavy loam and in very light peat. The position that seems to agree with them most is on the margin of a Rhododendron bed, as, like the generality of plants with thick leathery leaves, they seem fond of shade, and do not get robbed by the roots of trees. Following closely on the heels of the Hellebores comes the Winter Aconite, bidding defiance to frost and cold, then follow the lovely Squills and Snowdrops, succeeded quickly by the Crocus, Hyacinths, Tulips, and other bulbs that set the garden aglow. If these are not yet planted it is high time they were in the ground, where they will be making root and feeding the embryo flowers that are now formed within.

The way the Hyacinths and Tulips look best is in clumps of three or more, placed triangularly, as then they make a fine show. The smaller kinds need planting thicker in circular patches, and when putting them in, especially where the soil is at all stiff, it is a good plan to throw a pinch of sand over each, so as to insure free drainage, and thus save them from rot. Triteleia laxa and T. biflora are two beautiful spring flowering bulbous plants that should be planted now, the first-named having spikes of Tyrian-purple flowers, the shape of those of the Agapanthus, which are first-rate for cutting. Alströmerias, too, afford plenty of flowers for the same purpose, and are among the most showy and useful things any one can grow, sending up, as they do, numerous spikes, bearing large heads of lovely Lily-like blooms that last long in perfection. The place that suits the Alströmerias best is a warm sunny border, where they should have deep sandy soil, and be planted 6 inches below the surface, and then mulched with half-rotten leaves or cocoa-nut fibre, to keep out the frost from the tubers, which, after a time, run down low enough to take care of themselves. Tritoma aurea does well, treated in the same way, or the bulbs may be lifted annually when ripe, and replanted again in the spring, but when dug up they should be kept buried in dry earth or sand. Belladonna Lilies are grand, but, like the Alströmerias, they require a dry soil and a warm sunny position, for them to do well. The right time to plant the bulbs is now, and they should be put in 6 inches deep; and when the young leaves appear in the spring it is advisable to protect the clumps by placing a handlight over each, as their free blooming depends very much on the foliage they make, and if this is not protected it is apt to get cut by the frost. Plants of doubtful hardiness, such as Pentstemons, Anthuriums, &c, should have cuttings put in from them, or one of a sort lifted, potted up, and wintered in frames, ready for propagating from later on; but the earlier they are struck the better they do.

Many dig their mixed borders and beds; but except occasionally, when division of the plants and a rearrangement is necessary, it is not a good plan, and if carried out needs to be done with great care, as plants get displaced and injured by having their main roots disturbed, which being so, it is far better to top-dress with very rotten dung and fresh soil, and leave it to lie on the surface, where it will not only protect the exposed crown, but feed and nourish the plants. *J. S.*

The Hardy Fruit Garden.

Let there be no delay in transplanting any trees which require it, and it will tax the tree much less if the remaining leaves are cut off at planting time; and see that the tree is securely staked. Now is a good time to make a plantation of Raspberries. They prefer a medium soil, and somewhat shaded rather than otherwise. Carter's Prolific and Baumforth's Seedling are two excellent kinds, but if the soil is very stiff, Prince of Wales does best. It should ever be borne in mind that the Raspberry is a surface-rooting plant, therefore do not plant deep. Tie up at once, but do not cut the tops off till the spring: the frost, if severe, punishes them terribly if the knife has been used, so defer the final pruning till February or March. Spread rotten manure or half-decayed leaves between the rows, but do not dig between them for any reason. If Couch has found its way into the ground, of course that must be forked out, or it will overrun the entire plantation and impoverish it.

This is an excellent time to manure Strawberry plantations, more especially those which are two or three years old. If manure is brought fresh from the stables, and spread between the rows, one is rewarded with a good crop of fruit in the following year, but there comes also a crop of Oats and grass, &c., from seeds contained in the manure, but if it is partially heated the vitality of seeds of all kinds is destroyed, and the nutriment left for the plants is not much diminished. Do not dig between the rows; many a plantation is half ruined by this being done, seeing that most of the roots are cut off by the operation. Oftentimes the Strawberry, especially on light soils, suffers with the grub of the Burnished Brass and other moths; a good dressing with soot then is most beneficial in killing the grub if put on rather plentifully during the winter, and it will wash well down to the roots with the rains.

In most cases the Fig trees, after the glorious summer and autumn which we have had, are well ripened, and will withstand any ordinary frost; but in a case of ill-ripened growth they should be covered with straw, Fern, or matting, but do not prune them on any account till next March.

Filberts and Cob-nuts may now be planted, and, if necessary, they may be put in under the partial shade of other fruit trees. The pruning of mature bushes may be pushed forward, taking great care to leave plenty of catkins—the male blossoms, which, if afterwards considered to be overcrowded, can have the wood removed next April, when the blossoms are set.

Now is the proper time to plant Currants of all kinds. It is well to plant various kinds—early, mid-season, and late—thus prolonging their season, and some are hardier than others. The south, or the partially shaded side of other trees suits them best; but in the North it is otherwise, but seeing that the original plant is found wild in our woods, a great blaze of sun is not conducive to their well-being. The same treatment exactly suits Gooseberries. In districts where woods abound the tomtit and bullfinch, and near our towns the sparrow, will attack these bushes with great persistency, so that we recommend the pruning of these to be deferred till the spring. Manure can be wheeled in between the rows to forward the work, but defer the pruning.

Plant Walnut, Mulberry, Quince, Medlar, and Spanish Chestnut in sunny places, remembering that they are natives of warmer climates than England, and need all the encouragement we can give them both for the maturing of their wood and the crop. *J. Rust, Eridge Castle, Sussex.*

Fruits Under Glass.

Strawberries.—Owing to the continuance of mild weather there has been no necessity for moving the plants from their summer quarters, but now the time has arrived when we may expect severe frosts they will be safer if placed in their winter quarters. No pains should be spared to preserve the balls of soil in a moist, healthy state, and prevent the roots from injury from parching droughts; and therefore we would again remind gardeners of the utility of plunging the pots. Advantage should be taken of their period of rest to top-dress them; this should be done when the soil is moderately moist, but by no means when they are sufficiently wet that the ramming of the compost would cause the surface to paste. With a pointed stick carefully remove about half an inch of the surface and replace it with fresh compost, which must be firmly pressed. The compost should consist of good loam, mixed with about a fifth part of dried horse-droppings or dried cow-dung, and a small portion of soot or bone meal. Some persons object to top-dressing, on the ground that surface roots are disturbed; but although this is the case, no injury from it accrues, as the plants when placed in warmth readily form new roots, and are stimulated by the rich compost; and if the practice of top-dressing Strawberries is detrimental, that for Vines, Figs, and Peaches must be so likewise, for the same principle is involved in each case. About the last week in this month a batch of plants should be started to yield fruits in March; Vicomtesse H. de Thury, or Keens' Seedling, may be selected for this purpose. We do not recommend the system of plunging the pots in heat, having discontinued the plan, because it promotes root growth in advance of leaf development, and to which a check is given when the plants are removed to the shelves. In the early stages forcing must be carried on in a very gentle way, only enough fire-heat being used to maintain a night warmth of 50°, or 5° less during cold weather, and a day temperature of 5° higher; slight ventilation must be allowed whenever the weather is mild, and advantage should be taken of sunny days to close early, and dew the plants overhead with tepid rain-water. Successions should be brought forward to meet requirements, and an early Peach-house will do for this purpose if no other suitable place can be found.

Pines.—The time has come when little aid will be received from sun-heat, and the desired warmth must be furnished by artificial means—a state of things Pines are very impatient of and which, therefore, call for vigilance, in order to keep the plants in perfect health. The maintenance of suitable temperatures (which were given in the preceding Calendar for the several sections of plants during their season of rest) is a matter of first importance, as extremes of temperature would prove disastrous if too high, the plants rapidly becoming drawn and weakened during the short dull days when ventilation can rarely be given. Whilst on the other hand if the temperatures are too low a chill will be occasioned, to which no subjects are more susceptible. When frosts are severe and the fires have to be driven to keep up the heat, the bottom-heat (when that is obtained from hot-water pipes or tanks) is likely to become too high unless close attention is paid to the regulation of the valves. If structures can be covered at night suitable internal conditions will be maintained to the welfare of the plants. Attention has already been called to the utility of keeping the glass clean, where the houses or pits are situated near soot-producing premises: in such places they want washing down frequently. Another matter of importance at any time, but particularly so in winter, is to guard against water lodging in the hearts of the plants, and overhead syringings having been discontinued, and humidity only caused in moderation by damping the paths and walls, in preference to using evaporating troughs, so that moisture does not condense heavily on the roof and cause dripping, this should not happen. The most injury arises from negligence in seeing to the painting and glazing, and the water being cold causes much mischief. Attention has recently been called by a contemporary to a new Pine-apple of large dimensions, which, if it should prove to be of high flavour combined with other good qualities will doubtless be eagerly sought after. I have but limited experience of new varieties, and cannot speak very highly of those I have fruited, whilst, judging from what I hear of them, and their rare appearance at exhibitions, I am inclined to think they are not likely soon to supersede our best kinds.

Vines.—Owing to the weather having remained mild, forcing has begun under favourable conditions, as only a small amount of fire-heat has been requisite. When the buds of pot Vines begin to burst, a rise in the temperature of a few degrees may be allowed, but this must be done cautiously by opening the valves a little in the morning, and reducing again in the afternoon, so that the warmth falls to 58° at night; a gentle but steady increase of heat should accompany the development of the plants, and disbudding be proceeded with, as the strongest and most fruitful growths can be distinguished. Overhead syringing may be discontinued as soon as all the buds burst into growth, but the floors and beds must be moistened as is found necessary to maintain a healthy state of the air. Ventilating should be done on fine days, when the temperature reaches 70°, and where the pots are plunged in heat regulate it so that it keeps near 75°. For permanent Vines started at the commencement of the month keep a low temperature until their buds make perceptible progress, when a minimum night warmth of 55° may be maintained, while that for the day may range 10° higher, and reach 70° from sun-heat. Where fermenting material is employed inside the house it should be turned daily. If outside borders have been covered with a firm thick layer of dry leaves and protected from rain, no additional material will be necessary, but those who prefer a more violent heating material should make additions to it regularly, to prevent the temperature from becoming low, otherwise, if the roots are in their proper place—near the surface of the border—a check sufficient to cause serious disappointment may be occasioned. Pains should be taken to keep the buds belonging to Vines that are tied in a horizontal position level with each other, so that they may be induced to break into growth simultaneously. I have frequently observed that when the buds on one side of a rod—particularly upon young early forced ones—are placed over the others, the top row, owing to the sap flowing most freely through the uppermost surface, breaks earliest and strongest. Follow up the pruning and cleaning of Vines in succession-houses as they become cleared of fruit, and expose them as much as possible to the influence of the weather, unless sharp frosts set in, by this means securing a beneficial period of rest. I cannot remember the wood of Vines being so generally bright in colour and hard to cut as it is this autumn—a good augury for the crops next season. *Thomas Coomber, Hendre Gardens, Monmouth.*

Plants and their Culture.

Exotic Ferns.—The majority will now be comparatively speaking at rest, or making but little growth; with the exception therefore of arborescent or Tree Ferns, and a few other strong growing kinds, much less water will be needed at the roots. When applied, however, see that sufficient is given to penetrate the balls thoroughly, especially in the case of such as are pot-bound. These remarks are more particularly made in reference to specimen or half-specimen plants; small stock in 3 and 4-inch pots will require more frequent attention, the root-action of such being more active. These small plants, too, are more frequently placed in positions where they become dry at the root in a shorter time than large plants. The object to be aimed at in cautious watering of the larger sizes is to prevent any approach to a sodden state of the soil, when this occurs, the roots will perish more or less. The deciduous genera and species require even more caution, but the grower must not err on the extreme side and cause their fleshy crowns to suffer. In such instances the neglect will show itself in a weak growth the following spring. Of this section of Ferns, Lygodium (Stenochlæna) scandens is one of the best to grow, being accommodating to almost any structure except a cold greenhouse—a moist atmosphere or a dry one seeming to suit it equally well. Of insect pests, black thrips are its worst foes if not stopped in time. It will occur that some kinds may have made a dense growth and numerous fronds, a proportion of the older of these may be cut away with advantage, and especially if they show signs of decay or are in a way infested with scale or thrips. It is not well to remove a large amount at any one time, and should a considerable number appear to require this operation it had better be performed at two or three intervals. By this means no sudden check will be given to the roots, as is done by cutting away a large quantity of fronds at one time. The majority of Ferns will now be all the better if kept in a drier atmosphere for the next few weeks. They will then be found to start into fresh growth more freely in the spring. A drier atmosphere is at all times by far the best for the stock of all such as are kept for cutting purposes. Fronds of Adiantum cuneatum, if fully exposed to the light during the greater part of the summer, will last twice, and even thrice, as long if cut from the plants thus treated. Such fronds, too, are far more useful than from plants that are grown in the shade; although the fronds in the latter instance are apparently better developed when possessed of that deeper shade of green and larger pinnæ, they are not nearly so useful. Some of the best fronds that I ever had of this indispensable Fern were taken from plants grown in baskets, and suspended during the summer in a light, airy conservatory. I have previously recommended the covering of bare, damp walls with seedlings of the more useful kinds. One such wall here has been spontaneously covered for several years, and hundreds of fronds are taken from it, besides thinning out at intervals some of the worst, to make room for the younger ones. Adiantum Capillus-Veneris is the species best suited to this position; its creeping rhizomes cling tenaciously to any damp wall or other object. Seedlings of all the more useful kinds of Ferns should be looked after; many of them will be found in the pots of other plants. Do not let them remain, however, to injure the proper occupant, unless that be a plant that is in request for standing in ornamental vases in the mansion; in that case, the tiny Ferns will serve as a finish to its appearance and may, therefore, be tolerated. All such plants are greatly enhanced in effect when thus set off with either small Ferns or Selaginellas; and when any such plants are being repotted it is advisable to prick out a few of the small ones on the surface of the soil; the use of common moss is thus dispensed with, and the possibility of slugs or snails being introduced with it is prevented also. Of Ferns that are somewhat scarce Asplenium cicutarium is one of the best, and for using on the dinner-table in a small state it is not surpassed by any other Fern that has come under my notice. It is not one of the best to increase, but by devoting a little attention to its propagation we have at last succeeded in raising promising young stock, which will do us good service. Adiantum Paccotii is another capital addition, possessing more lasting properties than some Adiantums, when growing under adverse circumstances. Its compact habit of growth is very noticeable, and is decidedly distinct. It is as easy of increase as the best known of its class, and being suitable for greenhouse culture is also in its favour. Adiantum macrophyllum is another very distinct Fern that is attractive when in a young state. The use of small Ferns is becoming very general for filling little rustic baskets and vases, and none too soon either, considering their attractiveness. I would advise therefore that at this season several pots or pans be pricked off of the prettiest kinds in view of any emergency arising. If not needed for other purposes, they will form a nice finish to the fronts of the benches in the houses.

Tree Ferns.—Continue to supply them with water liberally, and on no account allow them toget dry, or their noble fronds will soon be injured past recovery. Some of the older fronds may be cut away, and thus allow more light and air to reach any plants that are growing underneath them.

Forced Plants and Bulbs.—Some of the earliest of this class may now be pushed on a little faster, so as to prevent a gap in the supply after the Chrysanthemums are over. Select a few Azalea indica with prominent flower-buds, and also Deutzia gracilis, which can always be relied on if the wood has been well ripened; Also Roman Hyacinths, and the earliest varieties of Narcissus and Tulips, of which a few pots should be brought into a moderate heat, so as to have them in bloom by Christmas time. If early Lilies of the Valley are sought for, by all means use single crowns in preference to clumps, for some time to come. *James Hudson, Gunnersbury House Gardens, Acton, W.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Nov. 24	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	Nov 25	Sale of 500 Lilium auratum, at Stevens' Rooms. Sale of Flowering Orchids, at Protheroe & Morris' Rooms, Sale of Roses and Bulbs at the City Auction Rooms, Manchester, by Protheroe & Morris. Chrysanthemum Show in Town Hall, Manchester. Fruit and Chrysanthemum Show in St. George's Hall, Liverpool
WEDNESDAY,	Nov 26	Sale of Hardy Plants and Bulbs, at Stevens' Rooms. Sale of Japanese Lilies, Roses, &c., at Protheroe & Morris' Rooms Sale of Nursery Stock at the Royal Nurseries, Ascot, by Protheroe & Morris (two days).
THURSDAY,	Nov. 27	Sale of Orchids, at Stevens' Rooms Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov 28	Sale of Imported Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 29	Sale of Hardy Plants and Bulbs, at Stevens' Rooms Sale of Bulbs, at Protherod & Morris' Rooms.

THE experiments carried out at Chiswick under the auspices of the Scientific Committee, for the purpose of investigating the merits of Mr. JENSEN'S plan of high-moulding Potatos as a preventative of the Potato disease, have, in the main, only yielded negative results. This is no fault of the Scientific Committee, nor of the sub-committee appointed to carry out the experiments. The trials were well devised, faithfully carried out, carefully watched, and, when the time came, neither pains, nor labour, nor time was spared to ascertain and record the results. It was not the energy, nor the zeal of the experimenters that was at fault; it was the fungus itself, which failed to put in an appearance, or to such a slight extent that no fair conclusions could be drawn from it. The fungus has its excuse—the weather was the reverse of propitious to its development! It was there ready to grow, but the weather would not let it. We greatly fear that the amount of sympathy shown for the experimenters who were prevented from presenting a report worthy of the Horticultural Society, and for the fungus which was prevented from doing its duty, will be slight in comparison with the complacency that will be felt at the happy conjuncture which rendered the labours of the committee void, and prevented the fungus from labouring at all. The poor experimenters have a greater demand on our sympathy than the fungus. At planting time they overhauled each tuber, rejecting all that had even the semblance of disease, though, as some of the tubers were planted whole, there was no guarantee that diseased tubers were not in some cases planted. Week after week they were at their post. Scorching sun or drenching showers had no more power to keep them away from Chiswick at the appointed times, than had the residence of the observers in Norfolk, or far-off Wales. The experimenters had something to do—and did it, though the results are of a negative character. The fungus had nothing to do—and did it? Nevertheless, negative though they be, the results obtained are not wholly valueless.

Although the cost of the plan as carried out did not enter into the calculations of the experimenters, who were guided by quite other considerations, yet it speedily became obvious to them that in the ordinary routine of field culture Mr. JENSEN'S proposals would prove very costly to carry out, and that, as a matter of practice, the grower for market would have to face the problem whether as a mere matter of cost the gain would be worth the candle.

The scheme followed by the committee, on the suggestion of Mr. PLOWRIGHT, was to grow two varieties, an early and a late one, in rows side by side. Each row was divided into five sections, the tubers in the first section being earthed-up in the Jensenian method early, those in the second section a fortnight later, those in the third after a further interval of fourteen days, and so on; some of the sections were thus earthed-up for many weeks longer than the others. The earthing-up was done much more efficiently than in the ordinary moulding, the object being to secure a steep slope on either side of the haulm, and so to enable any spores that might fall from the leaves to be washed down the slope by the rain, away from the tubers. Four "control rows" were instituted for the purpose of comparison, and in these control rows the haulms were not earthed-up at all, indeed nothing whatever was done to the Potatos in these four rows from the time of planting to that of lifting. Further, in some of the rows whole tubers were, as has been stated, used as sets, in other cases cut tubers were employed, and, again, while in some cases the haulm was allowed to grow as it would, in others the tops were bent over to one side, the bending being repeated at frequent intervals. Careful notes were taken of the progress and appearance of the plants at stated intervals, and ultimately the produce of each row and of each compartment of each row was lifted, weighed, and carefully scrutinised by fungus experts as well as by less skilled eyes.

The results of these elaborate investigations were duly tabulated and presented at the last meeting of the Scientific Committee. On a future occasion we may be in a position to give some further details as to the amount of produce under the varied conditions, but for the present we must content ourselves with the brief summary given in our report of the committee in the present issue. Brief as that summary is, it brings out certain points of interest, to which we would invite the attention of our readers.

Rather surprising, though here perhaps we are exposing ourselves to the reproach of telling tales out of school, was the difference of opinion that arose concerning the nature of certain brown spots, which became evident in some of the tubers when cut open and examined. Some were disposed to look on these as the initial stages of the disease, while others doubted their connection with the Phytophthora. Under these circumstances the term "suspects" was used in the report to indicate these tubers of doubtful character. It must be said in justice to those who from the first were of opinion that these spots were not due to the Potato disease, as usually understood, that no coaxing under bell-glasses or other device of the cultivator proved sufficient to develope the spawn of the Potato fungus, even though the cultivators in question included such men as DE BARY, KÜHN, and PLOWRIGHT. For some remarks from the pen of the latter gentleman on this subject, we may also refer to the report of the Scientific Committee in the present issue, and we hope shortly to be enabled to publish his remarks in full, accompanied by illustrations, as they are, in our opinion, of very great importance.

Another point of great interest was brought by Mr. A. S. WILSON before the Scientific Committee at this meeting, and one which, if further confirmed, will be of great moment in clearing up the history of this hydra-headed pest. It will be remembered that Mr. WILSON was the first to call attention to the presence in the leaves and other organs of "sclerotium"-like bodies, which he assumed to be a peculiar form or stage of the fungus in which it exists in the form of hard compact nodules without trace of spores or spawn-threads. These nodules in Mr. WILSON'S opinion, consist of masses of protoplasm, and form a definite phase in the cycle of the plant's history. We need not now repeat the remarkable sequence of events which follows if Mr. WILSON'S interpretation of these bodies be correct. It is so complete and so interesting that one could wish it were established. Unfortunately, Dr. FLIGHT and Mr. GEORGE MURRAY came to the conclusion, from the examination of Mr. WILSON'S specimens, that the bodies in question were mere masses of lime-oxalate, without any trace of protoplasm. Mr. WILSON now returns to the charge, and brings forward evidence to refute the chemical theory of FLIGHT and MURRAY. In this he is to some extent supported by Mr. WORTHINGTON SMITH.

It is quite clear that we have still much to learn concerning the Potato disease, and the means of dealing with it in practice; and this being so, we are by no means disheartened at the conflict of opinion among earnest seekers after truth, nor discouraged by the unusual conduct of the Clerk of the Weather, who, while irradiating the world in general during the last summer, may be said to have frowned on the Scientific Committee and its delegates at Chiswick.

—— RHODODENDRON GRIFFITHIANUM (fig. 113).—It is rather an unfortunate occurrence that the name of this noble species, originally dedicated to Lord AUCKLAND, at one time Governor-General of India, should, by the exigencies of botanical law, have to be changed. Nevertheless, as the plant had been previously named, there is no option but to acquiesce—and for the matter of that, GRIFFITH is better entitled, from a botanical point of view, to be commemorated by botanists than is Lord AUCKLAND, great as his merits were. The species is, perhaps, the handsomest of all the species originally introduced from the Sikkim Himalaya by Dr. (now Sir JOSEPH) HOOKER. Year after year its noble flowers may be seen in the Temperate-house at Kew, the brilliancy of its young growths being scarcely surpassed by the magnificence of the flower. The broad saucer-shaped calyx is specially characteristic of the plant. When one visits year after year in spring the noble Temperate-house one wonders that our garden lovers do not strive, even if on a smaller scale, to secure to themselves the glories and comfort of a temperate-house, available at all seasons of the year, without the inconvenience attaching to stove-houses. A house of tiffany, even, is sufficient in most cases, as was shown by our lamented friend, Mr. MANGLES, to secure a display of bloom that cannot be surpassed by any garden structure, however costly. For fine specimens grown out-of-doors we were indebted some time since to the Hon. and Rev. J. T. BOSCAWEN. The flowers were very fragrant, though characterised as inodorous in Sikkim.

—— "LES PLANTES DES ALPES."—We understand that Mr. R. I. LYNCH, of the Cambridge Botanic Garden, is about to publish a translation of M. CORREVON'S book on this subject. Those who read M. CORREVON'S articles in our columns will be glad to possess them in an extended and connected form.

—— "BRITISH APPLES."—This is the title of the Report of the National Apple Congress held in the Horticultural Gardens, Chiswick, October 5—25, 1883. This most useful book has been compiled by Mr. A. F. BARRON, the indefatigable Superintendent of the Society's Gardens at Chiswick. We shall be glad to go more fully into its contents, scope, and bearing on fruit culture at a future date.

—— "GARDEN ANNUAL FOR 1885."—We notice with much satisfaction this useful publication for next year, published by Mr. W. ROBINSON, at the *Garden* Office, Southampton Street, Strand. The book contains the usual information, Calendar, &c., with the corrections as regards gardeners' addresses, brought as far as is possible up to the latest date.

—— MR. GILBERT'S "UNIVERSAL SAVOY."—We find this miniature early variety tender when cooked, and wanting in that strong flavour common to other Savoys. The merits of the vegetable were recognised by the Royal Horticultural Society two years since by awarding it a First-class Certificate.

—— LAPAGERIA ALBA.—Dr. ALEXANDER PATERSON forwarded for our delectation a splendid bunch of this grand greenhouse climber. The cluster consisted of fourteen fully-opened blooms, all closely set on the end of a shoot. The shoot had probably been stopped, either by design or accident, with the usual result of having its yet undeveloped buds converted into flower-buds, precisely as happens to shoots of Apples and Pears on the same procedure.



FIG. 113.—RHODODENDRON GRIFFITHIANUM. (SEE P. 656.)

—— MIXED GLADIOLI.—We are requested to state that Mr. GUMBLETON is in a position to furnish applicants with seeds of LEMOINE'S hardy hybrid Gladioli on receipt of a stamped addressed envelope. If sown in February flowers may be looked for about next August twelvemonth. Address, W. E. GUMBLETON, Esq., Belgrove, Queenstown, Co. Cork.

—— EXPORTATION OF PLANTS.—The following notice, which has been sent to us by Messrs. PAUL & SON, has been issued by the German Imperial Government in reference to the importation of living plants, and its publication may save nurserymen and other much trouble:—(Copy). "According to the Imperial Ordnance of July 4, 1883, the importation of living plants into Germany from a country which does not belong to the International Phylloxera Convention is prohibited."

—— MESSRS. IRELAND & THOMSON.—These well known nurserymen have acquired by purchase (so we have been informed) the ground and the extensive hothouses and offices formerly in the occupation of the Lawson Seed Company, and have likewise rented about 30 acres of the land which it gave up this year, adjoining the land they have purchased, in which they intend to cultivate a large collection of trees and shrubs, in addition to their other places in and about Edinburgh.

—— AUTUMN LEAFAGE.—What appears to be Black Alicante Grape, growing on a south wall at the Bedfont Seed Grounds, gives in its foliage colour that fairly rivals the Virginian Creeper, and has the merit of being later and more enduring. The leaves all turn to a rich glowing red, and seem to hang on the wood with great tenacity. The kind, in any case, has other merits, for it ripens its fruit very well indeed in the open. It makes strong growth, and for the production of rich tints in foliage in the autumn merits wide cultivation. It would be interesting to learn how other Vines fare in the open, though it would seem that those rich leaf-tints are to be found only in those kinds which produce black fruit.

—— MESSRS. CARTER'S CHRYSANTHEMUM SHOW.—The display of Chrysanthemums, now to be seen at the nurseries of Messrs. CARTER & CO., Allenby Road, Forest Hill, is well worth a visit from the lovers of this fine autumn and winter flower. The collection is tastefully arranged in the conservatory; the flowers are large and in good condition, the colours distinct, the foliage deep green and clean, showing perfect health and cultivation. The plants are placed in a sloping position, so that the true character of each variety may be seen distinctly. There are over a thousand specimens displayed, not two varieties of a similar colour staged together, and all the newest and best varieties in cultivation are represented, making a very beautiful effect.

—— DR. GILBERT IN MANITOBA.—For the second time Dr. GILBERT has visited Canada and the United States. He speaks in high terms of the almost boundless fertility of the country as a whole, so that Wheat may profitably be grown on the same soil for years in succession, at the same time the conservation of the fertility must depend upon mixed agriculture eventually. In New York Dr. GILBERT delivered a lecture on the culture of Wheat, under the auspices of the New Jersey Agricultural Experiment Station, the State Board of Agriculture and the State Agricultural College. The lecture was confined to the interpretation of certain results arrived at in the culture of Wheat, but it made plain the value of experiments conducted with scientific accuracy through a long series of years. The occasion drew together a large number of men from New Jersey and neighbouring States eminent in various branches of agriculture and horticulture. It is noteworthy that the lecture was prepared with the approbation of Sir JOHN B. LAWES, in recognition of the deep interest manifested in the work at Rothamstead by the thoughtful farmers of this country. It is understood that Sir JOHN has made provision as a part of his general scheme to send a lecturer to the United States at stated intervals to illustrate and explain the experiments at our agricultural colleges, and to all others interested. Dr. GILBERT has already lectured at the Michigan Agricultural College at Lansing.

—— BRITISH FRESH-WATER ALGÆ.—The tenth and last part of Dr. M. C. COOKE'S illustrations and descriptions of these elegant organisms is now published. This part contains the Rhodophyceæ, and is specially remarkable for the highly enlarged representations of the various forms of Bactrachospermum. The letterpress includes an enumeration of all the authorities quoted; the names of the authors and their works being given in full, together with dates and places of publication. Amateurs will also welcome the glossary and the index, which includes all synonyms. Altogether there are 130 plates and 329 pages of letterpress.

—— THE DISQUALIFIED BUNCH AT DUNDEE.—We are requested to publish the following statement:—

"The charge against me in respect to Grapes at the late Dundee show has been now made so public that I feel it is only due to myself, as an exhibitor, to state exactly the facts of the case. The prize was for the finest flavoured Grapes, the bunch to be not less than 1 lb. in weight. On cutting the bunch I did not weigh it; it looked heavy enough for the requirements of the schedule. In placing it upon the stand a small shoulder hung loosely, and, no doubt unwisely, I padded it with a few berries of a similar kind, merely to keep up the appearance of the bunch during the exhibition. This was done in the presence of my foreman and one or two other of my men. I had no desire to deceive any one; I could not possibly deceive the judges. The weight was a matter of fact, as the bunch was weighed and found to be, as I am told, half an ounce short. I have letters from the two judges, who both corroborate my statement that there was no evidence whatever of the berries in question being tied in any way to the bunch. It would have been impossible to have done so, or to have deceived the judges in such a matter. Neither could they have fallen off from the bunch in question, as there was no stalk or stem to which they could possibly adhere. I trust this explanation will be satisfactory, and I think it entirely exonerates me from the charge of having attempted to deceive the judges. It was impossible for me to alter the flavour of the Grapes, neither did I attempt to add to the weight of the bunch. *James McIndoe, Nov. 12.*"

—— HAARLEM EXHIBITION OF FLOWERING BULBS, MARCH, 1855.—In 1855, the General Society for the Bulb Culture at Haarlem will celebrate the fourth century of its existence, and on that occasion an exhibition will be opened at Haarlem on a large scale, it being one of the quinquennial shows of the Society. Such large exhibitions as this will be were held in 1875 and 1880. The one now announced, however, will surpass all those held before, and if it should be as good as it promises to be, it will be the best show of flowering bulbs and tuberous-rooted plants ever held. It will be open from March 20—24, at Haarlem, in the large hall and its spacious annexes. The schedule of prizes has 140 entries, for which 381 medals are offered (Gold, Gilt, Silver, and Bronze, some of them with an additional money value). The total value of the prizes is more than £500 sterling. There are eighty-seven medals for Hyacinths, sixty for Tulips, seventeen for Narcissus, and smaller numbers for Crocus, Fritillaria, Galanthus, Leucojum, Scilla, Chionodoxa, Muscari, Erythronium, Anemones, Ranunculus, Lilium, Gladiolus, Iris, Helleborus, Hepatica, Trillium, Convallaria, Hoteia, Spiræa, Dicentra, terrestrial Orchids, Pæonia, Amaryllis, Imantophyllum, Eucharis, Orchids, Gesneriaceæ, Begonia, Anthurium, Caladium, Calla, Cyclamen, Tropæolum, Lachenalia, Sparaxis, Phormium, and Yucca, as well as for miscellaneous, rare, or new bulbous and tuberous-rooted plants. A large number of medals is, moreover, offered for table decorations, bouquets, arrangements of flowers, baskets, &c., with flowers or plants, with the one condition that all the flowers which are put in these arrangements ought to be those of bulbous or tuberous-rooted plants. This show will doubtless be a great attraction to all those who take an interest in bulb growing, and will give a better idea of the collection of spring bulbs grown in the neighbourhood of Haarlem than any show has done before, and will be well worth a trip to witness it.

—— HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* took place on Tuesday last, at the rooms, 1, Henrietta Street, W.C. Amongst those present were Mr. JOHN LEE, Dr. HOGG, the Rev. F. H. GALL, and Mr. TH. FLINTOFF; Messrs. STOLLENHOFF, DRUERY, IRONSIDES, COLLINGS, T. B. HALL, &c. Amongst the subjects brought under notice was a very varied collection of Chrysanthemum blooms of the different sections, from Mr. N. DAVIS, of Camberwell; a collection of dried fronds of Ferns of Athyrium Filix-fœmina, and some of its more remarkable varieties, such as thysanotum corymbiferum, clavissixium, and kalothrix, from Mr. H. M. STOLLENHOFF, of Lewisham. Mr. COLLINGS showed a remarkable frond of a Polystichum, which he had found on an imported Dendrobium, and which had a most powerful perfume, similar to that of the Tonquin Bean: it is believed to be new. The Secretary contributed for the dessert some remarkably fine specimens of Doyenné du Comice Pear, Cox's Orange Pippin, and King of the Pippins.

—— GARDENERS' ROYAL BENEVOLENT INTITUTION.—It has been decided, to meet the convenience of gentlemen who have collecting cards for the Pension Augmentation Fund, that the time for finally closing the list for this year be extended to Dec. 15. The correspondence on the subject of the Augmentation Fund increases in volume, but space forbids our publishing much of that which comes to hand. Notwithstanding, we have much pleasure in giving publicity to the following letter from a Head Gardener:—

"After reading Mr. COLEMAN'S letter I felt more convinced than ever that we all ought to lend a hand to help such an admirable institution. I accordingly brought it under the notice of my noble employers, who both very readily and with great pleasure gave me a handsome subscription; stimulated with my success I called on a few ladies and gentlemen who were in the habit of occasionally visiting the gardens, and I am happy to say that there was not one but what gave me something cheerfully. I feel sure that if the £500 is lost to the Society it will be entirely through the want of energy amongst gardeners, and as the time is now getting short, there is nothing like striking the iron while it is hot.—FREDERICK PRINCE, *Dantrey Gardens, Co. Monaghan, Ireland.*"

The committee met on the evening of the 17th ult., when it was decided to make an addition to the list of recipients of nine pensioners in January next, three of whom would come on by right as former subscribers, and six by election. The election will take place at the general meeting to be held on Wednesday, January 14. It was also ordered to invest £300 in Consols.

—— NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.—The monthly meeting was held at the Mechanics' Institute on Nov. 12, Mr. COOPER, Magdala Road, presiding. The display of Chrysanthemums was extremely fine, from Mr. Collins, Elm Bank; Mr. Germain, Malvern House; Mr. Meadows, Rock House, Basford; Mr. Walker, Hardwick House, The Park; Mr. Massey, Mapperley Hall; Mr. Hallam, Redmont House, Radcliffe Road. Messrs. Pearson, The Nurseries, Chilwell, exhibited fine collections. From Mr. Edington, Woodthorpe Grange, some fine examples of Primulas, grown in 6-inch pots, 18 inches to 2 feet through, a mass of flower, including Williams' Magnifica, Chiswick Red, Meteor, and choice seedlings of semi-doubles. Mr. Thacker, Minerva House, St. Ann's Hill Road, exhibited a small piece of Cypripedium Spicerianum, with medium-size flowers of fine form and colour. Mr. A. Pearson (The Chilwell Nurseries) contributed a paper on Hardy Fruits for the Midlands, which was well received, a hearty vote of thanks being accorded him, and the Chairman brought the proceedings to a close.

—— THE PROPOSED SCHOOL OF FORESTRY AT EDINBURGH.—A meeting of the committee appointed at the recent Forestry Congress held in the Exhibition Buildings, to take steps to establish a School of Forestry and a museum in connection therewith in Edinburgh, took place on the 14th inst., at which the Marquis of LOTHIAN presided, and among those present were the Lord PROVOST, Sir DAVID CHRISTISON, Bart., Dr. CLEGHORN, Mr. HUTCHINSON, Mr. NIEL FRASER, Mr. DUNN, Mr. BELFRAGE, C.E., and Colonel DODS, (Hon. Sec.). It was reported that the donations towards the formation of a museum received from various Governments and private exhibitors at the Forestry Exhibition had been carefully repacked, labelled, inventoried, and stored away in a large suitable warehouse, kindly granted for the purpose by the Lawson Seed Company. The donations in question consist of a vast number of valuable and interesting specimens of woods, barks, fibres, seeds, and other forest produce, illustrations of the new wood-pulp paper industry, implements of woodcraft, &c. This collection in

itself would form a museum of no inconsiderable size and importance. It was further stated that arrangements are being made for issuing an appeal to the public for the necessary funds to establish a School of Forestry in connection with the University ot Edinburgh, and to procure suitable premises for a Museum. Although the sum required for the purpose will be considerable, it is not anticipated that much difficulty will be experienced in raising it, owing to the impetus given to the movement, and the interest awakened in forestry matters generally, by the recent Exhibition. A copy of a letter was read from Sir JOHN LUBBOCK, Bart., disclaiming the idea which had got abroad that he is adverse to the establishment of a School of Forestry at Edinburgh; but, on the contrary, he quite approved of it, and wished the movement every success. The meeting regarded the communication as of considerable importance, considering the prominent interest which Sir JOHN LUBBOCK takes in forestry matters, and in view of the fact that he is to bring the subject before Parliament at an early date.

—— PRESENTATION. — Mr. WILLIAM PRIEST, who has been gardener to the Marquis of LOTHIAN, at Newbattle Abbey, for the last nine years, was entertained to dinner by a number of his friends in the "Cross Keys" Hotel, Dalkeith, on the 7th inst., and presented with a gold watch and chain, with a brooch and bracelet for Mrs. PRIEST, as a mark of respect and esteem on his leaving Newbatttle Abbey Gardens, at the Martinmas Term, November 11.

—— THE WEATHER.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Nov. 17, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W. :—The weather has been dry in nearly all parts of the kingdom, but at our extreme W. and N.W. stations heavy rain fell at the commencement of the period. Very cloudy skies have been reported generally, and in many places haze or mist has prevailed. The temperature continued above the mean during the earlier days of the week, but subsequently became considerably below. On the whole it has been slightly in excess in "Scotland, N." "England, N.E." and "England, S.W," about equal to its normal value in the Midland Counties, "Scotland, W.," "Ireland, N." and 1° below in all other districts. The maxima, which were recorded either on the 11th or 12th, varied from 58° in "Ireland, S." and 57° in "England, N.W." to 50° in "England, N.E." and "England, E." The minima were generally registered on the 14th or 17th, and ranged from 24 over the inland parts of Ireland to 32° in "England, N.E." and to 36° in the "Channel Islands." The rainfall has been less than the mean in all districts. Over England the fall has been especially slight. The bright sunshine has been (except in the "Channel Islands") less prevalent than for many weeks past. Over the greater part of England there was only 3 to 9 per cent. of the possible amount of duration, in "Ireland" 20 per cent., and in "Scotland, N.," 29 per cent., while in the "Channel Islands" there was as much as 42 per cent. Depressions observed :—During the earlier part of this period a high-pressure area (noticed as travelling north-eastwards towards Denmark at the close of last week) was established over the south of Sweden and Denmark, while depressions continued to move north-north-eastwards outside our western and north-western coasts, producing south winds at all our stations; on our west and north-west coasts a fresh to strong gale was experienced on the 11th. By 8 A.M. on the 13th the conditions had become rather complicated and the winds variable, owing to the appearance of a second anti-cyclonic system over Ireland. This distribution, however, was of brief duration, for on the following day a large anti-cyclone, which remained in about the same position till the 16th, covered Denmark, the south of Scandinavia, and the greater part of the North Sea, causing easterly winds in the south-east and south, south-easterly in the west, and southerly in the north. At the end of the period the highest pressure was transferred to our north-west coasts, a depression was moving south-easterly over Scandinavia, and the wind in our islands had shifted to the north-eastward or northward.

—— GARDENING APPOINTMENTS.—Mr. JOHN DUMBLE, late Principal Foreman with Mr. BETHELL, at Sudborne Hall, Wickham Market, has been appointed Head Gardener to C. E. G. PHILLIPS, Esq., Picton Castle, Pembrokeshire.—Mr. W. J. CLARKE, late Gardener to W. F. SPENCER, Esq., Spring Grove, Bewdley, as Gardener to W. H. POLE CAREW, Esq., Antony, Devonport.

PRUNING.

THE papers noticed in the two previous weeks' numbers of the *Gardeners' Chronicle* have been chiefly expositions of the reasons why such and such operations are performed on our fruit trees, but as yet the novice at his work would not be quite sure as to the methods to be adopted in carrying them out in

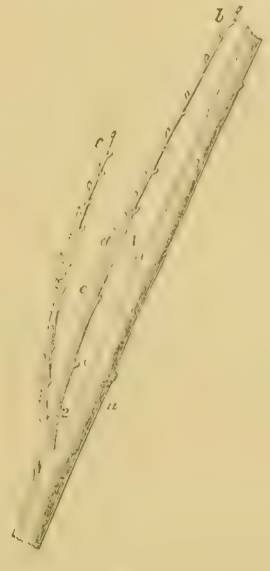


FIG. 114.—A PEACH TREE SHOOT.

practice. In view of this dilemma we will speak now of this, the practical part, for although a man may be acquainted with the science of his subject, if he cannot whet his knife well, and know when and where to use it, the filling of his fruit-room, and the furnishing the table and the kitchen, will be generally a matter of uncertainty, or he may in the absence of knowledge elect to let his fruit trees get into the distressing state

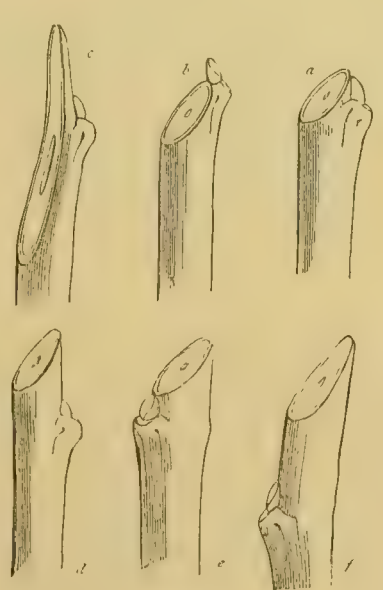


FIG. 115.—SPECIMENS OF PRUNING.

which a correspondent tells us the Devon orchards are exhibiting.

Having an object in pruning our trees, we will say now what that is; it is to fit the tree to the wall, if it be a tender fruit, and if a hardy one, to the espalier, or to form it into a standard or a pyramid or any modification of these. Then pruning and training must go together, for we can hardly speak of the one and be silent about the other. We will take for illustration a tender subject, the Peach, which refuses in this country to ripen either its wood or its fruits away from the forcing aid of a sunny wall. The plant arrives from the nursery, we will assume, as a maiden, that is, a little tree one year old; from the bud it is well ripened, and should not be very gross, or else it will be found that the large wounds necessarily made on it heal only after the lapse of two seasons, leaving a piece of dead snag under the healthy bark, which often developes into an unhealthy wound. The tree having been planted in the early autumn should be pruned after the hard frosts of February are past—not earlier, else it will be so long ere the sap rises and cicatrising of the cut begins; and owing to that the shoot may die further back to the loss of the bud; and if pruning be delayed till growth has begun there is so much sap lost, besides, the sap having acquired certain directions at the outset, is diverted with difficulty later. The best form for the Peach being the fan, or some slight modification of it, the young tree will need the foundation of the main branches formed at first, and this is best done by cutting it back to 2 inches in length, or even less; from this stump, and chiefly from the dormant and almost indistinguishable buds lying buried in the bark, these main shoots will take their rise. After cutting back, the tree should be only lightly attached to the wall, as the newly moved soil will settle yet more, carrying the roots with it. When growth commences the young growths are most misplaced—that is, those directly in front and those springing out from the back, none of which could be made to do duty as main branches without forming ugly, and, so far as the flow of sap is concerned, injurious bends. Then the shoots may be left for a week or so longer, when the final choice must be made, those being retained that are best placed, say two on either side or only one. The nursery trade usually adopt the practice of keeping three, one central and two side shoots, but stronger trees can do more than this. During growth there may be some regulation of these shoots necessary; the tree may grow weaker on one side than the other. In that case it will be as well to unloose the weak side from the wall, or depress the strong side shoots for a few weeks until balance is restored, at the same time pruning off a few of the leaves on that side. The next winter having arrived, the operator must still prune for wood, *i.e.*, the shoots made the previous summer must be cut to about 9 inches in length, afterwards making selection of the best placed ones as before but leaving three or four on each of the side shoots, and as many as it may be possible to get equally distributed on the middle one, which should have been cut back to 2 or 3 inches as before. This is done for two reasons; in the first place, because the shoots springing from it, being nearer the erect line will benefit more by the flow of sap than those, and being cut into the, dormant buds, will be later in developing shoots, thus giving the side shoots a few weeks' start, which is of great advantage to them, as the sap will have acquired a current in their direction, that will always afterwards be retained. The other reason for cutting the middle shoot so hard back is to do away with an upright stem, always an objectionable feature in stone fruit trees, as when by any chance the shoots should be lost from this, they are scarcely ever fully replaced by new growths.

The regulation and pruning off of all unnecessary laterals, and the raising or depressing of shoots, must be attended to as before, the tree now beginning to assume the intended form. In the following February the main shoots must be again pruned back, but not so hard, and may be left at 15 inches or more in length, and the centre shoots having become numerous, have no need to be kept so much in check, nor yet be so hard cut back to obtain shoots. It will, nevertheless, be essential to control the almost vertical growths by fastening them first of all to the wall, whilst the young wood of the side branches may be allowed freedom from all training for two or three weeks, thereby giving strength to these, but checking the too rash growth of those. If this should not be found a sufficient check to the central growths, some of the leaves may be cut off, or only the half of a leaf taken over the greater part of the shoots; this, with bending the shoots with their points towards the earth, will usually effect the purpose intended—the forcing the sap into the side branches. After equalisation of growth becomes evident, the hitherto loose shoots may be fastened in. The pruning and restriction will now begin to bear fruits, and flower-buds will form themselves on the twigs, which have now become more numerous. In the third year, if the tree has made good progress

a few fruits may be looked for, and the bloom-bearing shoots cut back into ripe wood. The fruiting of the tree at this date must be ascribed more to the treatment it has received in having the weak and crowding shoots cut away, and by reason of its wood by those operations getting fuller exposure to the sun, and by the multiplication of impediments to the free passage of the sap, which a large ramification of the branches causes. These impediments cause the sap to move sluggishly, which in itself leads to the formation of fruit-buds.

Nature acts in the tree as if under our treatment it were in imminent danger of being killed, and therefore endeavours to reproduce its kind by seed (fruit) before that event occurs. The successive treatment of our typical tree follows pretty nearly on the lines laid down in the later years of its formation, using the pruning knife sparingly in early spring, but cutting away misplaced shoots, and those not required during growth, and endeavouring to so treat the remaining wood by keeping it thinly distributed over the tree that it gets the maximum of heat and light. In making cuts, either in winter or summer, great care should be taken to cut always at an obtuse angle across the shoots, and so close to the bud that no snag remains to die back, and to require for its removal a second cutting-over at a later period, Long slanting cuts, even if they end just above a bud, impoverish the top bud, sometimes cause the portion left to wither up, and are always a long time in healing over on account of their area. Shoots that are cut away at their base should never be cut without leaving a trifling stump, which, being small, soon heals; whereas a wound as large as the actual base of a shoot would be a long time in doing so, and would in all probability in stone fruits terminate in obstinate gumming. Fig. 114 (p. 659) shows the method of cutting back Peach wood that has borne fruit, and how it is replaced with new wood. The shoot *b*, being cut in winter to *a*, forces the shoot *c* to grow, and then *b* is cut quite away at 2. Fig. 115 shows a good cut in *a*, and bad ones in all the others.

Florists' Flowers.

CHRYSANTHEMUMS AT CHESHUNT. — Messrs. Paul & Son have this season made a display of Chrysanthemums in their nursery at Cheshunt. A house 60 feet by 20 feet has been filled with a selection of old and new kinds. There is a good group of the new variety Bendigo, which, it seems, is a sport from Eve; it is of a pleasing yellow tint. Dr. Sharpe is better grown here than usual; Angelina is a fine buff-coloured variety; Album plenum, a fine white Japanese; Angéle, lilacy-pink; Ile Japonaise, pretty; Harlequin, pale buff; Mons. Planchman, lilac-mauve; Mons. Castel, crimson, with gold centre; Thunberg, fine golden-yellow; Safrano, pale primrose, distinct in form and colour, and of good form; Source d'Or, one of the finest Japenese kinds, cinnamon, shaded gold; Henri Jacotot, brownish-crimson, large size. The following two pompons, La Desirée, blush, and Snowdrop, white, are very desirable. Madame Feral has reflexed light purple flowers, in the way of Christine; Tendresse is a very distinct Japanese variety, of a salmon-purple tint, and free in blooming. It would be superfluous to enumerate all, or even a large part of the fine collection; but one thing was noteworthy, and that was the healthy state of the plants. Mr. Paul informed me that on the first appearance of mildew the leaves were dusted with flowers of sulphur, and this was just before they were taken into the house. This simple treatment has kept them free from the pest. Green-fly should be destroyed on its first appearance also by dusting with tobacco-powder.

In another house were arranged winter-flowering Carnations of a very dwarf type. The strain came from France, and the plants seen were probably raised there too. They are as dwarf as forcing Pinks, and very free in growth, each one having a large quantity of foliage. Perhaps the finest of the group was Mdlle. Carle, a pure white, with broad well formed petals. Bernhardt Voight is a very free flowering, red, with a reddish-violet flake—a distinct and good kind; F. Tokornya, pale rosy-lilac—a pretty semi-double kind; Miss Bernard, fine deep purple—a well formed full flower; La Zouave, reddish-scarlet, lighter stripes; George Paul is distinct, large, full flower, the centre of petals yellowish, the margin being rose, but the yellow tint runs into the margin; Irma, brilliant rose—a very pretty kind, with large well formed flowers. It is well to note that there are two varieties of it—one with paler flowers, and the colour in flakes; the self is by far the best. In a warm house there was a fine batch of Begonia Moonlight, a fine late autumn or winter-flowering variety, with creamy-white flowers. Mr. Paul also thinks very highly of the Tea-Rose Sunset. It is a sport from Perle des Jardins, a sort which originated in America. The colour is almost identical with that of Madame Falcot, and as full as the flowers of the variety from which it sprang. *J. Douglas.*

CHRYSANTHEMUMS AT VICTORIA PARK.—The display of Chrysanthemums that has been on view to the public for the past few weeks at Victoria Park is one of the greatest in extent, if not in variety, in the neighbourhood of London. The plants number upwards of 4000, and include representatives of all sections, mostly all the best of the older varieties. They are arranged under a temporary framework and covering of canvas, that may be removed from the front and replaced as desired, It is about 60 yards in length, and situated nearly opposite to where the principal bedding display is in summer. The plants are arranged in what seems to be the popular way in London—that of showing a mass of flowers in one face, with a gradual rise from the dwarf pompons in the front to the height of standards of other sorts at the back. Many of the flowers are large, and of fine form, their size individually being somewhat unnoticed on account of the prevalence of smaller-flowered but more floriferous varieties in the group. These latter are grown with a view to the encouragement of Chrysanthemum culture amongst the working classes of that densely-populated neighbourhood. Such well-known varieties as Emily Dale, Lady Slade, White Globe, Prince Alfred, Novelty, Empress of India, Mrs. Halliburton, Alfred Salter, Eve, Beauty of St. John's Wood, Jardin des Plantes, &c., were represented by large flowers of good substance. Fulgore, Chang, Peter the Great, Fair Maid of Guernsey, and Grandiflora, a beautiful yellow, amongst Japanese; Lady Margaret, Gluck, Mr. Astie, and Madame Montels, amongst Anemone-flowered; and Bob, Brilliant, Mustapha, and St. Michael, of the pompon section, were representative of the excellence of many old varieties. Crimson Velvet, a reflexed very dark flower, and Astrolabe, a bronzy-yellow quilled Japanese of a distinct and fine habit were also noticeable. Much credit is due to the authorities and Chrysanthemum growers at Victoria Park for cultivating, under unfavourable atmospheric conditions, as regards fogs, &c., such a number of plants to form an autumn exhibition, that cannot fail to be a source of attraction and much pleasure to the teeming population around. If it were practicable, a glass covering would be a great improvement, as flowers and foliage are soon over when crowded in a darkened position under canvas. An addition of some newer varieties, that include many of the Japanese section, would also be of material importance for the display another year. The Japanese are not nearly so formal as the incurved sorts, and consequently a group presents a much finer appearance where a good proportion is intermixed. *J. G.*

Home Correspondence.

Uredo, Puccinia, and Æcidium. — No good would come from a renewed discussion of this subject (see p. 596) in the *Gardeners' Chronicle*. I have distinctly stated my views at length elsewhere. The little lithograph in the *Botanische Zeitung* of the many times observed fact of a Puccinia and Æcidium growing side by side is familiar to me, and I have at p. 179 ("Diseases, &c.") referred to the instance quoted by Mr. Plowright. The Rev. M. J. Berkeley illustrated (five years previous to the publication of the *Botanische Zeitung* figure) a similar habit of growth in Æcidium and Uromyces in the *Gardeners' Chronicle*, August 22, 1874, p. 238; and such of the readers of this paper as care for the subject need not go to a German book, but may refer to Mr. Berkeley's illustration and cautious and correct description as given in your paper. It will be found that Mr. Berkeley does not commit himself to the views lately taken up with so much zeal by Mr. Plowright. There is no proof in either case that the two fungi arise from the same mycelium. *W. G. Smith.*

Hybridising Potatos at Reading.—In noticing the very interesting experiments which were successfully carried out last summer by Messrs. Sutton at Reading, the writer was under the impression that more than one cross had been effected between several of Messrs. Sutton's best disease-resisting kinds of Potatos and Solanum Maglia. This is not quite correct. He should have said that the cross was effected with one sort only. The variety used was in fact a seedling raised by that veteran and successful breeder, Mr. Fenn of Sulhampstead. It is a Potato which is not yet on the list among the sorts offered to the public, but it has proved its merit as a Potato of good quality and power of resisting disease, and for that reason it was used as the male parent in the first successful operation of hybridising between S. tuberosum and S. Maglia. It may here be mentioned that Mr. Fenn also effected last summer a cross between S. tuberosum and S. Fendleri, which Mr. Baker describes in his *Review of the Tuber-bearing Species of Solanum* as a strongly marked variety of S. tuberosum, and a native of the mountains of New Mexico and Arizona. The tubers which provided Mr. Fenn with the necessary blossoms were sent to him from Kew Gardens. *H. Evershed.*

Berries and Birds.—Seeing how rapidly the berry-loving-birds are devouring the fruit of the trees thus early this season one might be disposed to accuse them of being careless for the future, seeing they are clearing the food that might be of service when severe winter sets in, and insects and other food of this character will be difficult to obtain. Perhaps this circumstance tends to lessen the regard felt towards birds by gardeners, who recognise in this fact that not a few of them are fruit eaters, and when the cultivated fruits are gathered they turn their attention to those borne by trees and shrubs. Some large trees of Portugal Laurels that a few weeks since were covered with a wealth of shining black fruits are nearly denuded of them; and the coral berries of Hollies are rapidly disappearing in the same way. In places those on the red Pyracantha are becoming lessened from the same cause; the thrushes appear to be busy with those of the Mountain Ash. It seems hard to lose the shining Holly berries so long before the Christmas season; but the birds will not be restrained. They do not seem to be the friends of the gardener that some good-natured people have supposed them to be. *R. D.*

Sowing Scarlet Runner Beans.—If your paragraph in the leader the week before last required any confirmation, I could with honesty and truth confirm all you say respecting the sowing of Scarlet Runner Beans late. It is a plan that every gardener should follow. Peas are now nearly finished, in fact my last dish was gathered on Saturday last, November 8, so that Scarlet Runners are now doubly valuable. Respecting the varieties of Scarlet Runners, I find none so abundant as the Girtford Giant. The peculiarity of these Beans is the setting. Scarlet Runner Beans, as a rule, set badly in the early part of the season, whilst the Girtford Giant sets its fruit altogether so well. I have repeatedly noticed Girtford Giant with quite a handful of Beans on the flower stem while the older varieties have merely one or two. I strongly recommend gardeners to give this Bean a trial. It is large in size and excellent in flavour. *R. Gilbert.*

Cobbett's Indian Corn.—It may interest some of your readers to know, at a time when attention is being attracted to Maize as a material in a green state with which to fill silos, that I have this year ripened the above corn on a measured piece of ground at the rate of thirteen sacks to the acre, the grain being much finer than any in the market. I make no deductions from this fact, but may add that I have never failed to ripen this corn in the West of England for forty years. *Frederick Fane, Moyles Court, Ringwood.*

Potato Culture for Exhibition Purposes.—It will be remembered that Mr. J. Hughes, The Gardens, Eydon Hall, Byfleet, was a most successful exhibitor of Potatos at the annual show held by the International Potato Committee at the Crystal Palace in October last. It was the first time that any one exhibitor had been successful in taking 1st prizes in the leading classes for twenty-four, eighteen, and twelve varieties. Naturally enough some curiosity was aroused on the part of less successful exhibitors to know in what manner Mr. Hughes cultivated these fine samples. His method of culture does not materially differ from that of others, but he possesses a soil well adapted for the cultivation of clean and handsome samples; and here he has an advantage over some others not so advantageously situated. It will not suprise any one to find that the particular soil in which his Potatos are grown one year is not used for the same purpose the next season; but his prize Potatos follow some other crop. A good dressing of spent hotbed manures given to the previous crop, and this ground is dug as early in the autumn as possible, and it is forked over between then and the time for planting as often as opportunity will admit of its being done. The oftener this can be done the better undoubtedly. During the operation of forking over the soil is made as fine as possible, and by planting time it is, to use Mr. Hughes' own phrase, "as

fine as flour." To this part of his cultural process Mr. Hughes attaches great importance, and he states he has always noticed that Potato crops are much heavier on ground so treated. In the spring a good dressing of ashes, formed of burnt prunings of fruit trees, clippings of hedges, &c., in fact anything that will burn and be reduced to ashes, and this is regarded as of more value to the crop than manure; it acts as a useful stimulant, and causes the ground to work very free. The consequence is the tubers come out of it handsome, clean, bright, and of good size. The foregoing information gives what Mr. Hughes regards as the backbone of his cultural system. As a matter of course he is careful in the selection of the sets and preparing them for planting, but every cultivator knows the advantage of that. Very much depends on the proper preparation of the ground: Mr. Hughes knows this full well, and his success as an exhibitor attests to its great value. *R. D.*

National Auricula and Carnation and Picotee Society: Southern Section.—The communication from Mr. Douglas, published in your issue of the 8th inst., suggests such erroneous issues, and so completely avoids the point of difference between us, that I must beg your permission to offer a brief comment. Mr. Douglas states that I "refused" to call a meeting for October 14. Let me recite the very words of my reply:—"As to a meeting, you had better seek the direction of Mr. Moore, the Chairman of Committees, Mr. Shirley Hibberb, or whom else you may think fit to consult. As I see the question nothing can be less desirable. Not only would it not avoid the 'public display' you expressed your resolve on August 8 to avert, but it would absolutely create it." I submit this is a very different thing to a refusal. It was conceived and expressed in a desire to induce Mr. Douglas to seek conciliatory counsel and restore harmony, though I bated no jot of my determination to unmask, if possible, the covert assailants who had for so long made me the object of their attack. Next as to the point at issue between us, and Mr. Douglas' "amazement" that I should think "explanation necessary." The subject involves far more than matter personal to myself. It was this:—On July 22, perfectly voluntarily, Mr. Douglas informed me "if I won the Veitch prize I would not be allowed to hold it, for all the committee, even Dr. Masters, were prepared to vote I was not an amateur." Physical prostration prevented my subjecting this statement to any test at the moment. At an early date after my return home I wrote drawing Mr. Douglas' attention to the consequences involved if his statement were duly warranted—the implication of concerted action behind my back, the inconsistency of objecting to me as an amateur competitor for the Veitch prize, and offering no protest in regard to the ordinary classes, and the strange contradiction of such action to the expressed sense of the meeting of April 22, of which the President of the Carnation Society had recorded his opinion that I was not only an amateur, but a very distinguished amateur. Finally, I stated my conviction he had been misled, and begged he would enable me to unravel the matter by informing me of all he knew. To my surprise and deep regret Mr. Douglas refused this information. He replied, "I am quite ready to say as much as I have said to you at the next committee meeting or general meeting; further than that, it is not fair to press me. All the parties implicated will be there, and it can be settled by word of mouth at once. We shall have no more public displays if I can help it. Besides, it was only a hint I gave you for your private information. When another meeting is called it will be well to state that a part of the business will be to accept my resignation as hon. sec., because I cannot continue to hold office as the business is at present managed." Severe affliction in my family prevented me prosecuting the matter for some time. In September I returned to it again, and reasoned against the course proposed by Mr. Douglas, but in vain. He would make the statement in committee, not to me. Those interested in the fortunes of the societies will decide whether the arrangement should be with me or Mr. Douglas, when I state Mr. Douglas informs me he made no reference whatever to this incident at the meeting of October 14, which proceeded so summarily to depose me. Some other points might well be dilated on, but I fear to encroach on your space. Mr. Douglas says we have no precedents! He ignores our eight years' work and our seven annual reports! He says of the meeting of October 14, "Mr. Dodwell knew quite well why the meeting was called; the members of the committee, I think, did not." What, then, were the terms of the notice convening the meeting, and how was the business opened? Well may Mr. Douglas desire to keep back a copy of his minute-book. In his closing paragraph Mr. Douglas propounds a very large question. He says:—"Surely Mr. Dodwell cannot believe that the gentlemen present on October 14 would knowingly transact any business that was not fair and open, or that they were animated by any personal animosity to him?" Well, I have implicit confidence in the large majority of the gentlemen present, and entertain for them the highest respect; but Mr. Douglas must be strangely forgetful of some recent events if he supposes I make no reservation, even forgetful of very recent language of his own. *C. S. Dodwell, Oxford, Nov.* 10. [We can insert no more on this subject, which will be discussed, it is to be presumed, at the forthcoming meeting. Ed.]

Double Primroses.—"R. D." thinks this class of plants requires so much attention that their cultivation is almost given up, excepting the old Double White, which is the best for market and cut flowers. I forward you a few specimens of various kinds which I grow; they are not quite in character yet, as most of the varieties are not in flower. I find no difficulty whatever in propagating or growing this class of plants, as I have been successful with them for many years. *Hy. Johnston.* [The specimens forwarded were excellent samples, and of varied colour, from pure white to deep rosy-lilac. We shall be glad to learn your method of culture. Ed.]

Chrysanthemums for Cutting.—In the collection now in flower at Chiswick there are two varieties that most appropriately were under this denomination. One is the Japanese M. Charles Hubert, remarkably free and very handsome, the rich shaded orange and crimson florets being tipped with gold; and a pompon variety named Melanie, pure white, very free, the flowers borne in charming bunches. As Mr. Barron grows Chrysanthemums one gets a good idea of their value for cutting and decorative purposes; they are so different to those plants that are allowed to carry only a very few large show flowers. *R.*

Profits of Woodlands.—Mr. Strickland takes exception to some of my statements favouring grouping to that of mixing plantations, but I infer from the tone of his remarks that he will not seriously object to the grouping system advocated by me when he has had the whole practice explained, which it is my purpose to do in future papers on this and kindred subjects. The relative value of Scotch Fir, Larch, and Spruce, surprizes him, but it need not, for as a matter of fact the Norway Spruce on soft, dampish ground suited to it, grows better, and sooner attains size and value than any other forest tree than I am acquainted with. In a mixed plantation, consisting of Spruce, Larch, and Scotch Fir, &c., which we are cutting at the present time, the Norway Spruce are worth about double any of the others upon the soft ground. *C. Y. Michie, Cullen House, Nov.* 15.

Scabious.—It is only those who have grown the dwarf Scabious who can have any idea how useful they are, as their persistent blooming is something remarkable, for they are about the first things in and the last out, especially if old plants be kept and turned into beds or borders in spring, or cuttings are struck early in autumn and grown on till the same time of year. Although so late ours are still gay, and to-day (Nov. 15) we have cut many flowers, and if the present mild weather continues shall be able to cut many more. Not only are these varieties of Scabious fine for beds and borders, but they are also very valuable for pots, as they make a fine show in a greenhouse, where they may be had in bloom nearly the whole season. The best way to startwith them is to get a packet of seed, from which great variety may be obtained, when the plants affording the best blooms and colours should be selected for propagating by means of their cuttings, which strike freely in heat. The proper time to sow the seed is in March or April, and as the plants are nearly hardy the seedlings may be pricked out and nursed on in any cold frame. Those we have in borders stood out all last winter, and we always find they flower better than young ones, unless they get much crippled and cut by the frost. *J. S.*

Double Daffodils Producing Seed. — On June 24 I gathered a capsule of ripe seeds from a plant of double Daffodil which had been carefully marked and observed. There were nine shining black seeds, and they were at once sown in a pot and covered with a sheet of glass. On examining the pot to-day I found four of them showing long grass-like blades an inch long. Here, therefore, we have a completion of the proof that double Daffodils may produce ripe seeds. Whether the plants will turn out double or single will be the next point to be carefully noted, but this will be five years hence. *Wm. Brockbank, Brockhurst, Didsbury, Nov.* 15.

Nerine venusta.—In reply to the enquiry of Mr. R. T. Clarke, Hornsea, I beg to state that I suppose those offered by Messrs. E. G. Henderson & Son to be true to name. It is really a pity that such confusion exists as to the names of these bulbs. For several years I tried to collect all existing species and forms from all available sources, and I sometimes get a plant under three different names. We have only insufficient descriptions and figures of the older sorts, and even now it is very difficult to determine which is which. N. amabilis is a hybrid of N. pudica crossed by humilis major, and was raised by me several years ago. Among the batch then raised I obtained a much larger flowered variety, which is very floriferous, valuable for its late flowering and bright rose colour. Perhaps next season I shall be able to arrange and publish a list of the species and varieties most desirable to grow. *Max Leichtlin, Baden-Baden.*

Primula japonica.—I have often thought how easily a useful plant becomes unpopular and very little grown when the culture is not well known, and this has fallen in a great measure to the lot of that good and not very old plant, Primula japonica. No plant, if well done and planted in masses, can give a better effect as a late spring flower either for cutting or show, but for such purposes the usual way of splitting the plants must always end in failure from several causes; one in particular is, that the old plants are very subject to red-spider in dry weather. Here we always raise the plants from seed, and work them on just as we do the Polyanthus, in a rather shady border. In this way they are easy to manage, and the effect when in flower is very fine; they are so easy to grow in this way, either to sow the seed in the open border, or under a hand-glass, so that even cottagers might have them. *William Culverwell, Thorpe Perrow.*

Unseasonable Blooming of Fruit Trees.—With reference to the effect of the unusual warmth of the season on vegetation in many parts of the country, I should like to add my testimony as to what was quite recently observed here. Two of the standard Apple trees in the garden were in full bloom, on one of which fruits were found as large as Filberts. Primroses also are in bloom at this unusual period. *W. Preston, Highlands, Higher Runcorn.*

Semiannular Pipes.—When I was rearranging the pits at Malvern House, Sydenham, I had occasion to move some hot-water piping which had evidently been put down, as far as I could learn, for many years; the iron pipes were of the oldest pattern, and had become quite brittle. Although there was very little flow through them I was surprised to find the deposit in these pipes almost *nil*, and there was hardly any corrosion, although it is well known that the water-supply of Sydenham deposits in the boilers a very large amount of incrustation—so much so that we have to clean out the kitchen boiler every six months, or else it would be full of shale. I don't, therefore, anticipate any difficulty from shale or corrosion in the narrow chamber through which the water passes, but, like everything else, it is well to give a trial not only to the narrow width I suggest, but also to wider widths, as mentioned by Mr. John Charlton. Having thought out this subject pretty clearly I may further remind Mr. Charlton that as such a small quantity of water is necessary it is not difficult to secure rain-water at first starting, when an ordinary well supply is known to deposit lime largely. I feel quite sure that the innovation I have made will be a long time coming into use, and an immense opposition will be brought forward by the manufacturers of the present form of annular pipes, therefore I have been enabled to decide the question by the satisfactory working of the small greenhouse boilers and semi-annular piping heated by a Rippingill lamp by making an apparatus for heating small greenhouses, halls, and passages. I may here say how very much indebted I am to gentlemen and ladies who are working these apparatuses for the kind manner in which they are sending me in the particulars not only of the successes, but of any defects they may notice, because there are other novelties introduced to enable the Rippingill lamps to be burnt in the greenhouses, and the whole of the heat caught in the cover or screen, fumes being carried out by very slight tin piping at the top of the house. Here again we find that this chimney causes a draught and current of air, making the flame of the lamp do its work much more effectively in heating the boiler. *Thos. Christy.*

Rare Fruits at Cambridge.—Though Pandanus furcatus probably has fruited before in this country, as on the Continent, I can find no record, and therefore the fine cluster that has been produced deserves mention. Vitis gongylodes, which before resisted the help of artificial pollenation, has at last consented to bear three fruits. Perhaps one hundred flowers were pollenised, so that it is far from being a free-fruiting plant. These are now as large as Marrowfat Peas, and will no doubt mature. They came in the position of fullest light. Thladiantha dubia has fruited this year, and most probably for the first time in Britain. The female plant was once reported to be in the garden of the late Daniel Hanbury, but I never heard of its fruiting, and I can find no record in the *Gardeners' Chronicle* of its fruiting anywhere. I had the good fortune to get this female from seed, sent me from the

Jardin des Plantes, and there was one only among a number of males. The fruit is about 2 inches long, oval, and of dull red or mahogany colour. *R. I. Lynch.*

Lifting Dahlia Roots.—The extent to which Dahlias are now grown, and especially the single varieties, makes a reference to the process of lifting and storing the roots a seasonable matter. In some places Dahlias are quite destroyed by the frost; in others the visitation has been less severe in its effects, and yet, although it is now November, a few flowers yet show themselves. There is no necessity for lifting the roots so long as the weather keeps genial and pleasant. The usual plan is to cut away the foliage to within 6 or 8 inches of the ground when it is fast decaying after frost, and clear it away. Then when sharper frost threatens the roots should be dug up, clearing away some of the soil, but leaving some between the tubers. A fork is the best tool to use, getting it well under the roots. It will be observed that the main stem is hollow, and it will be seen to contain water. A mat should be spread upon the ground, and, as the roots are lifted, they should be turned upside down, so that the water can run out of the stem, and the soil about the roots dry somewhat. If rain threatens or frost is imminent, then a second mat should be thrown over the roots, and especially at night. It has been found by experience that Dahlia roots keep better during the winter through having some soil left upon them—it tends to keep the fleshy roots plump; if they were cleansed of soil at once they are apt to shrivel. A dry cool loft or cellar is the best place in which to keep the roots—they simply require to be kept from frost, and heat is not necessary unless frost should render it necessary. Some growers stow their roots away with the necks downwards. During the winter the soil on them dries thoroughly, and they can be cleansed of it with ease. But the roots must be examined occasionally during the winter months. *R. D.*

Gigantic French Bean.—I forward you a Bean-pod raised from seeds sent me by a friend a short time since. I raised them, and when strong turned them out, giving them a place in the Cucumber-house. They have grown quite freely, and produced a nice lot of pods, which form an interesting sight; the pods vary from 18 inches to 2 feet in length. Last week I sent a dish to my employer's table, and was pleased to hear from him that they tasted crisp and good. It is very productive, and I believe it may be made a valuable winter vegetable. The name sent with the seed is Dolichos sesquipedalis. *C. Hazel, The Gardens, Gaunt's House, Wimborne, Dorset.*

Acorns.—It may be interesting to note the extraordinary abundance of acorns this season. Oak trees everywhere, large and small, are covered with them, and the produce must amount to hundreds of thousands of bushels—a rich treat for the pigs, pheasants, wood pigeons, and squirrels, who are doubtless the largest consumers of them. *W. H. Rogers, Southampton.*

Phlox Drummondi.—Like many other flowers, the Phlox Drummondi has been greatly improved of late years, for not only have the blooms increased in size, but they are now most brilliant and rich in colour, and more particularly is this so with the very fine variety named grandiflora, the flowers of which are nearly as large as a florin. For bedding, Phlox Drummondi is quite unrivalled among annuals, for instead of being fugacious, like many of them, it is very lasting, as the plants come early into bloom and continue in full beauty all through the summer, and far into the autumn, in seasons like the present, when the weather is mild. Some I have seen to-day (Nov. 15) are still fresh and fine, and bright and cheerful they look now there is so little in beds or borders beyond the plants fast going to rest. To have them good, the soil they are grown in must be rich and deep, otherwise they suffer from drought and die off or run into seed. *S.*

Continental Novelties in Flowers.—Among the many novelties that find a place in the lists of the German seedsmen at this season of the year, there are two at least that appear likely to prove acceptable to English flower gardeners. One of these is a double form of the well-known Acroclinium album. Two years ago the double A. roseum was introduced, and it has given great satisfaction; some time ago the double white type was submitted to the Floral Committee of the Royal Horticultural Society and awarded a First-class Certificate of Merit. It is said to be a stronger grower than the single white, while the individual flowers are larger. The other is a double white perennial Candytuft—Iberis sempervirens florepleno. This appears to bear about the same relation to the single form as the double white Bouvardia does to the single. As a spring-flowering plant the evergreen Candytuft is well known, and given a good double-flowered type, it is certain the flowers must be much more durable in character. As the double form does not seed it is being offered in plants, which will not be delivered in this country until April 1. Both the foregoing novelties are from the establishment of Mr. J. C. Schmidt, of Erfurt, Germany. *R.*

Reports of Societies.

Royal Horticultural: *Nov.* 11.

SCIENTIFIC COMMITTEE.—E. Loder, Esq., in the chair.

Weevils Attacking Orchids.—Mr. Pascoe exhibited specimens of Acythopeus, n. sp., from Borneo and elsewhere in the East Indies, imported with the Orchids which they attacked.

Orchids, Photographs of.—Mr. Smee exhibited photographs of Orchids as growing during the summer out-of-doors. They were taken into the house in October. Several had flowered during the three months they were out.

Knot in Birch.—Mr. MacLachlan showed solid woody knots, apparently embryo buds, of 1 to 1½ inch in diameter.

Cockroaches in the Palm-stove.—He also showed specimens of Periplaneta americana occurring at Kew, received from Mr. Dyer.

Masdevallia Leaves Diseased.—Mr. W. G. Smith showed specimens badly infested with Protomyces concomitans growing in the intercellular spaces. Mr. Boscawen thought it might have been attacked by a thrip. Mr. Smith had not observed any. Mr. MacLachlan remarked that Portschinsky said that thrips only attacked unhealthy plants, but he could not assent to the statement.

Lilium auratum, bulbiferous.—Mr. G. F. Wilson brought stems of this Lily provided with aërial bulbs like the bulbiferous section. He remarked that L. longifolium often bears them. He stated that the frosts of April cut down the young stems of L. speciosum, but the bulbs left in the ground appeared to be larger, with bulbils also in some cases, notwithstanding the foliage being unformed.

Diseased Pear Stems.—Mr. Murray reported on these, and said that though some fungus was present he could not account for the injury. He thought younger specimens might be studied with advantage.

Experiments at Chiswick to test the Jensenian system of Moulding-up Potatos.—The report was submitted by Dr. M. T. Masters, and embodied the results of experiments carried out under the superintendence of the sub-committee. The chief conclusions arrived at were as follows:—1. Earthing-up increases the period of vegetation and the amount of produce; "except in one instance (whole tubers, bent tops, Adirondack) the produce of the sections earthed up for the longest period is markedly in excess of that yielded by the sections earthed-up for the shortest time." It may, however, be observed that tubers not earthed-up at all (control rows) yielded the largest quantity, but the worst in quality and the most liable to disease. 2. Bending the haulm reduces the produce; but conclusions from these experiments cannot be accurately deduced, "nor is it practicable to dissociate the effects of the bending from those of earthing-up." Mr. Plowright observes that bending should not be done while the Potatos are in blossom, but before July 15 and after 23d no deterioration of the tubers occurred in experiments in Holland. [*Gardeners' Chronicle*, April, 1884.] Moreover, the bending the tops is practically almost impossible, if not useless, from the quantity of foliage and the quick recovery of position. 3. The effect of cutting the tubers is shown in a marked deficiency of produce compared with the result from using whole tubers, there being a difference of about 10 lb. in favour of whole tubers of Recorder, and of 12 lb. in the case of Adirondack. 4. Amount of disease. So trifling has been the attacks of Phytophthora, that, as far as any results could be obtained to test the Jensenian method of moulding, they are practically *nil*. Many Potatos were, however, characterised by reddish or brown spots dispersed through the tuber, the cause of which is at present inexplicable. Tubers thus affected are called "suspects" in the report. The true Potato disease was almost exclusively confined to Recorder, and to tubers earthed-up a proportionately short time. In the control rows, however, both varieties were affected. It was moved by Mr. Grote, and seconded by the Hon. and Rev. Mr. Boscawen, that the same sub-committee be instructed to carry out a repetition of the experiments at Chiswick in 1885, to test the Jensenian method of protecting Potatos from the attacks of Phytophthora.

Potato Diseases.—A communication was read from Mr. Plowright, of which the following is an abstract:—The chief diseased conditions are:—A, Diseased conditions arising from causes affecting the growth of the plant itself: (1) green tubers, (2) hollow tubers, (3) supertuberation. B, Diseased conditions arising from causes external to the plant: (1) "The Potato disease" (Phytophthora infestans), (2) wet rot (Bacillus amylobacter, Van Tieghem), (3) dry rot, (4) scab, (5) spotting or mottling. Passing over A (1) as unimportant, the author observes that hollow tubers are a reversion to the normal state of aërial stems. The cells bordering the cavity have no starch, and are suberised. Tubers diseased by Phytophthora are characterised by being first affected on the surface, as Kühn pointed out in 1859 as the zoospores attack it through the epidermis. The author quotes the view that the mycelium penetrates the tuber by the haulm—a view held in this country but not on the Continent; and he remarks that the former view is proved by experiments, whereas the latter has not been experimentally tested, except that when cotton wool is wrapped round a portion of the stem, and all the rest artificially infected with the disease, the protected part alone remains entirely free from mycelium. The deep brown and opaque places are not diffused but harder and drier than the rest. The cultivation of the fungus is easy, but it soon loses the power to produce conidia. The browning appears in two days at a temperature of 75°, but after longer periods with lower temperature.

Wet Rot.—Potatos diseased with this decay in pits and in the ground. It is caused by Bacillus amylobacter. This microbe attacks the cell-walls. It is very infectious. To cultivate Phytophthora without the Bacillus it is necessary to desiccate the slices of Potatos charged with the former, as the latter then dies, or is quiescent.

Dry Rot.—This occurred to a great extent in Germany in 1830, and has been common there ever since 1842. The Potato is "dead looking," and has brownish or bluishy-spots within—in old stages the interior is a mass of yellowish-white and friable substance. It has not been noticed to any extent in England.

Scab.—This is unimportant. The cause appears to be unknown; but the author is inclined to think it is an effort to form cork to prevent the entrance of fungi.

Spotted and Mottled Tubers.—These spots differ from those due to Phytophthora—1, being inside the tubers; 2, they are neither so opaque nor so dry nor deep in colour. No trace of a mycelium was to be found, and no conidia could be obtained by cultivation by De Bary, Rostrup, Jensen, Plowright, Murray, or Henslow. Mr. Jensen suggested it might be an incipient stage of dry rot, but Kühn negatives this view. Mr. Plowright adds that a crop was unsaleable this season, as it cannot be foretold how many tubers may not be attacked. Mr. Plowright also forwarded specimens of tubers—1, diseased by Phytophthora through the epidermis; 2, mottled; 3, wet rot as it occurs naturally with Phytophthora; and 4, artificially induced on sound tubers; 5, Spicaria Solani; 6, Acrostalagamus cinnabarinus. He also sent copies of Reincke and Berthhold's figures of Bacteria, showing starch grains in the process of dissolution of Bacillus amylobacter. With reference to Mr. Plowright's statement that mycelium was not found in the part protected by cotton wool, Mr. W. G. Smith reported that he had carefully examined the experimental specimens forwarded to the last meeting, and had found mycelium throughout the stem, quite as much under the wool as elsewhere. Mr. Plowright alluded to Mr. Murray's experience in getting the mycelium to penetrate the tough skin of Champions as corroborating De Bary's statement. Mr. Murray said that it was only in the case of about three or four tubers out of 100 that succeeded, but that he had repeatedly traced the mycelium down the haulm along the subterranean branches and into the tubers.

Potato Sclerotia.—Mr. W. G. Smith had carefully isolated these bodies on a slide, and treated them with nitric acid, which destroyed a coat of calcium oxalate, and revealed an oval plasmode-like body exactly as Mr. Wilson has done, as reported below. He had found similar bodies in Phytophthora Schleideniana in Onions and in P. nivea on Parsley. Mr. Murray said he had found similar bodies in perfectly healthy plants, and suggested that Mr. Wilson should repeat his experiments, and that he would test Mr. Wilson's. Mr. Bennett raised the question whether malate of lime might not be present, as malic acid was particularly abundant in vegetables.

The Potato Sclerotia.—A communication was read from Mr. A. Stephen Wilson on the so-called Sclerotia found in the foliage of Potatos. After referring to the history of them, and to the negative results of Mr. Murray and Dr. Flight, who regarded them as calcium oxalate, and not living bodies, he considers those observers as acting under a misconception, in that they attempted to make a parasite grow in dead matter. Hence Mr. Wilson traced the results of "myceliation" while the tissue was living, and found that the granules of the spherical bodies contained within the coating of lime threw up a complete crop of Phytophthora in a night's time. He gives a description of his experiments with nitric acid, which, by careful application, dissolves the lime but leaves a pellucid ball of granular plasm behind. "This is everywhere permeated by sporidic granules, some of

a round form, others of an oblong form, like short pieces of excessively delicate mycelium. The whole has a soft hue, like fine pencilling, and the outline is in most places perfectly definitive, with here and there a break, as if part of the material has flowed out at the side." . . . "A conidium of P. infestans is about half the size of one of these bodies, and the contents of the conidium are optically very similar to those of the sclerotium as seen after being divested of its calcareous coating, and both equally give rise to mycelium."

The author then gives measurements, and observes that other plasmodiating fungi are coated with lime, as some of the Myxomycetes.

Spermannia and Hoya Roots Clubbing.—Mr. Plowright sent specimens, which were referred to Mr. Smith and Mr. MacLachlan for examination and report.

Edinburgh Botanical: *Nov.* 13.—The first meeting for the session was held at 5, St. Andrew Square, when the President, W. B. Boyd, Esq., delivered his retiring address. He directed attention to the subject of mosses. One marked feature, he said, of the present day was the rapidly increasing taste for scientific knowledge among all classes of people, and the increased facilities for its acquirement. Botany was, perhaps, one science which had of late years increased most rapidly in popular favour. In our country mosses had recently received, and were daily securing, the attention of cultivators; and Mr. Boyd pointed out that their great variety and interesting features opened up a pleasant and profitable field of study. In concluding his address, the President spoke of the advantageous influence of the Forestry Exhibition, which he regarded as the greatest botanical event of the year, and expressed the hope that one of its results would be the establishment of a fully-equipped School of Forestry in Edinburgh, seeing that forestry was closely interwoven with our national prosperity.

Dr. Paterson, Bridge of Allan, sent for exhibition a cluster of flowets, fourteen in number, of the beautiful Lapageria alba on a single stem, this abnormal occurrence being somewhat rare. Dr. A. P. Aitken exhibited a specimen of, and read a note on, Astragalus mollissimus, a weed chiefly found in the northern part of Texas, and described by the friend who sent it to him as having an effect on horses similar to that of opium on the human frame. It was called "loco," and the horse became dazed, grew thin, and died, and some ranchemen lost largely by its effects. Dr. Aitken mentioned that he intended to experiment upon it in order to ascertain more definitely whether it was a narcotic.

Mr. Lindsay stated that, through the kindness of the Japanese Commissioners to the International Forestry Exhibition and Dr. Cleghorn, a large quantity of seeds of Japanese trees and shrubs, many of them new to cultivation, had been presented to the Royal Botanic Garden. The seeds appear likely to germinate, and may yet not only form a lasting memorial of the exhibition recently closed, but might also form a most interesting exhibition of their own.

The Rev. D. Sandsborough, Kilmarnock, gave a report on Australian and New Zealand trees and plants grown on the east coast of Arran. He said:—

The island of Arran enjoys a climate in which the severity of winter is as little felt as in any part of Britain. The east coast is specially mild, as here cold frosty winds are tempered by crossing the sea, while their force is destroyed by the high mountains of the Goatfell range rising immediately from the coast to a height of 2866 feet, which so lift up the wind, that trees along the coast instead of being scourged, actually in full luxuriance overhang the sea at high tide. He had therefore confined the experiments he had been kindly permitted to make, to this side of the island. The measurements were taken in the beginning of August, and unless otherwise mentioned, are made 5 feet from the ground.

Gum Trees.—The first place is due to the Gums, as these are the loftiest trees in the world. Fortunately my list includes two of the most notable species—the Blue Gum, growing to the height of 330 feet, and famous for its sanatory properties; and the Almond-leaved Gum, which grows in Australia to the height of 430 feet.

Eucalyptus globulus (Blue Gum), at Lamlash.—Girth, 1 foot 7½ inches; height, about 30 feet. Another at Strabane, Brodick, was planted this spring.

Eucalyptus amygdalina, Corrie (Almond-leaved Gum), 25 feet high, 11 inches in girth.

Eucalyptus coriacea (White Gum), Lamlash.—The seed of this Gum was received in the spring of 1879. The tree is now 14 feet 6½ inches in height, with a girth of 4½ inches.

Eucalyptus Gunnii (Mountain White Gum), Lamlash, 3 feet 10 inches in height.

Eucalyptus alpina (Alpine Gum), Corrie, 3 feet in height.

With the exception of the blue and the alpine these species are also growing at the Rev. Dr. Story's, Roseneath; Mr. Scoulars, Tighnabruaich; and at Balinakill, Kintyre. Their hardihood will thus be further tested. In Arran not a leaf of the White Gum (E. coriacea) was even browned in the severe winter of 1879-80. This year at the Forestry Exhibition I saw branches of these and other Gums from Antibes, in the south-west coast of France. They were not a whit more luxuriant than similar branches in Arran, though the rate of growth at Antibes is three or four times greater.

Cabbage Palms.—The Dracænæ (Cordylines) are favourite plants in Australia, avenues being formed of them as at Ballarat Botanic Gardens. They grow in Arran in the utmost luxuriance, and have never been even browned by frost.

Cordyline indivisa, 12 feet 10 inches high (including leaves), 1 foot 5 inches girth 18 inches from the ground; leaves 3 feet 10 inches in length, 2 inches in breadth.

Cordyline Veitchii, 9 feet 11 inches high, 1 foot 4 inches girth at 12 inches from the ground; leaves 2 feet 11 inches in length by 1¾ inch broad.

Cordyline australis, 9 feet 7 inches high, 11 inches girth at 12 inches from the ground; leaves 3 feet 7 inches long and 1¼ inch broad.

As these Cordylines are in perfect health and growing rapidly, it may be expected that they will bloom ere long. The specimen of C. indivisa was sown in 1872; the others were given him at a later date.

Tree Ferns.—So far as he was aware the Island of Arran is the only place in Britain where Tree Ferns altogether unprotected grow luxuriantly in the open air. Three species have been tried. Cyathea dealbata stood a winter, but was stolen the following summer. The two growing at present are Dicksonia antarctica, 1 foot 11 inches high, girth 2 feet 3 inches; has a crown of sixteen fronds, each about 5½ feet in length by 1 foot 8 inches in breadth. Dicksonia squarrosa, 7 inches high, 10 inches in girth, fronds 2 feet 8 inches in length by 1 foot 3 inches in breadth. Dicksonia antarctica was planted in 1867, when it was very small—about the size of a plant of Cystopteris fragilis. It was ten years before its stem began to grow in height, having in this time acquired its full girth. Dicksonia squarrosa was planted in 1877, and had even then a stem of about 4 inches in height. It is in a colder situation than D. antarctica, and was accidentally much injured a summer ago.

Todea superba and Todea hymenophylloides (not Tree Ferns), both grow well.

Beefwoods: Casuarina equisetifolia (He-Oak), 10 feet 10½ inches in height, was planted in 1882, when it was 8½ feet high. He hoped by another year to try E. quadrivalvis (She-Oak) and E. suberosa (Cork Oak), of both of which he had specimens.

Pittosporums: Pittosporum tenuifolium, planted this year in Brodick Castle High Garden.

Brambles: Rubus australis, planted this year in the Brodick Castle High Garden on a north wall, where it is growing admirably, and has a more tropical appearance than any plant in the garden, its leaves being even finer than those of Aralia Veitchii and much more curious, as they are studded over with little white prickles. They would form a beautiful fringe to a bouquet. If abundant in Australia its innumerable prickles must render it a perfect torment in the bush, for they are sharp and turned back and will catch and hold and tear.

Wattles: Acacia melanoxylon (the Black-wood of Australia). This tree, so valuable as an ornamental timber in Australia, had not a leaf browned by the severe winters four or five years ago. It grew most luxuriantly, which proved its destruction, as it was blown over by the storms of last winter. A. pycnantha (Golden or Broad-leaf Wattle), a young plant in Captain Bunn's garden, Lamlash, is uninjured. A. decurrens (Black or Feather-leaf Wattle), 5 feet in height, in Captain Bunn's garden, Lamlash. This is a most beautiful plant.

The Bottle Tree (Brachychiton diversifolium).—This curious plant receives its name from its stem at the base swelling into the shape of a bottle. He had the promise of one of these Australian Bottles for Arran.

The Grass Tree (Xanthorrhæa arborea).—This very remarkable plant (see Balfour's *Class-book of Botany*, pp. 92 and 930) is very rare in this country, though well known in the plains of Australia. Through the kindness of a friend its leaves are now waving in front of his house, enjoying the great heat of our present weather (August 11). Soon he hoped to see them waving in a favourable situation in Arran. He might mention that he saw yesterday in the possession of James Wilson, Esq., Kilmarnock, a walking-stick of Grass-tree wood. It had been shown at the Dunedin Industrial Exhibition.

Miscellaneous Plants, not Australian. — Camellia (blooms freely), Myrtle (blooms abundantly), Budleia globosa (in bloom, very beautiful); Desfontainea spinosa, 7 feet 6 inches high, and covered with flowers; Photinia serrulata, Elæagnus reflexa variegata, Euonymus latifolius aureus, 4 feet 9 inches high; Coccoloba vespertilionis, Platanus orientalis, 3 feet 8 inches in girth; Schizostylis coccinea, blooms most abundantly every year; Cunninghamia sinensis (Chinese Broad-leaved Fir), planted about 1858 by the late Mr. Townley.

Extract from the monthly record of temperature, vegetation, &c., in the Garden of the Royal Botanic Institution of Glasgow for August, September, and October, 1884. By Mr Bullen, Curator:—

August.—The maximum and minimum temperatures were high during the month, 73° to 75° being registered (in the shade) several times. A severe thunderstorm was experienced on the 12th, resulting in loss of life, and damage to property in many parts of the country, considerable damage being done here to walks and roads by the heavy downfall of rain.

On the whole, we have experienced one of the finest and most favourable (as regards vegetation) months recorded for many years past. The prior summer months having been alternately dry and showery, a fine harvest month has proved a blessing to the country. Cereal crops have rarely been equalled; and if large fruits, such as Peaches, Pears, Apples, Plums, &c., have been scarce, small fruits have been abundant. Annuals and half-hardy plants generally have made excellent growth, and the prevailing bright weather has been very conducive to bloom, consequently gardens generally have been more attractive than usual. If the coming month is alike favourable, a considerable variety of home-grown seeds will be saved.

September.—The lowest night temperature recorded during the month, was 39° during the night of the 1st and 2d. The highest night temperature was 58°, on the night of the 10th. The lowest day temperature was 53°, on the 28th; the highest 68° (in the shade), on the 10th and 11th respectively.

We have had a majority of fair, and frequently very fine, days; the rainfall has been light, and has fallen generally during the night. We have not had so fine a summer to record for many years. Crops generally have been good, bloom abundant and brilliant, and the same may be said of those plants used so extensively for the beauty of their foliage in the scrollwork parterres now so frequently seen in public parks and gardens. Where subtropical plants have been used for outdoor decoration they have rarely been seen to better effect. Numbers of annuals, although much battered by the high winds of the last few days, are blooming freely, and perfect seed is being gathered from many. Grass continues to grow, and has grown freely during the whole summer, while in many parts of the south the reverse has been the case.

October.—The temperature has been at freezing-point four times during the month, and below it only once, and that only 1°, on the morning of the 29th. The highest in the shade was 58°, on the 6th. The rainfall was light, and weather generally fine up to the 22d; since then the rainfall has been heavy, and the weather at times stormy. Many half-hardy plants have had a prolonged season of bloom. Dahlias, especially the single forms, were floriferous, and even brilliant, until the 24th, at which date they were destroyed by the boisterous weather. Seeds of both hardy and half-hardy plants ripened well. Rhododendrons have not set bloom freely, nor yet so early as is usual in hot summers; the early summer being unfavourable to growth, the buds were late in setting, and many have an abortive look. Deciduous Azaleas have also made short growth, and although fairly well set for bloom, the buds as yet are small.

Report on the Progress of Vegetation at the Royal Botanic Garden, Edinburgh. By Mr. Lindsay, Curator:—

July.—Since the last meeting of the Botanical Society (July 10) outdoor vegetation has, on the whole, made satisfactory progress. July was a very wet month, there being only seven days when no rain fell. Thunderstorms were frequent throughout. The lowest night temperature was 39° on the nights of the 20th and 26th, the highest 55° on the 10th and 16th. The lowest day temperature was 58° on the 24th, and the highest 77° on the 8th and 14th.

August was an exceedingly dry month; there were twenty-one days when no rain fell. West and south-west winds prevailed. The lowest reading of the thermometer occurred on the night of the 29th, when 40° was registered, and the highest 56° on the night of the 15th. The lowest day temperature was 59°, on the 27th, and the highest 79°, on the 6th. Bright sunshine was frequent. Herbaceous and alpine plants, and bedding and other tender plants flowered abundantly during the month.

September was also dry, there being nineteen days when no rain fell. Slight showers were frequent at the beginning and end of the month, which prevented grass on lawns from becoming browned. The lowest night temperature was 37° on the 3d and 5th, the highest 58° on the night of the 20th. The lowest day temperature was 56° on the 14th, the highest 70° on the 9th. Westerly winds were prevalent. Owing to the dry weather autumn tints appeared earlier than usual; American Maples had their leaves well coloured by the beginning of the month. Herbaceous plants, though slightly dwarfed, continued to flower freely, and ripened good seed very early. All outdoor work has had but little interruption throughout the month.

During *October* the dry character of the preceding months was continued. There were nineteen dry days. The wind was westerly throughout the whole month. The first frost this season occurred on the 11th, when 29°, or 3° of frost, was registered; and again on the 29th, when 28°, or 4° of frost, occurred. Other low readings were on the 10th, 35°; 27th, 33°; and 28th, 33°. The highest night temperature was on the 16th, 49°. The lowest day temperature was 45°, on the 10th; and the highest 69°, on the 4th. Deciduous trees and shrubs have parted with their foliage early; by the end of the month most kinds were stripped bare, while at the same date last year but few leaves had fallen. Autumn tints on various trees and shrubs were very fine, but of short duration. Maples, Oaks, Pyrus, Beech, and Virginian Creeper were among the finest. Forest and fruit trees generally have formed firm, well ripened wood, which will be of great advantage in the event of a hard winter taking place. Holly and Cotoneaster are well covered with berries, now finely coloured. Other berry-bearing shrubs are but sparingly set. Rhododendrons, Azaleas, and other Ericaceous plants have not been so well set with flower-buds for some years back. The season is most favourable for transplanting and outdoor work generally. On the rock garden 315 species and varieties of dwarf-growing herbaceous and alpine plants came into bloom since our last meeting, making a total of 1112 for the season, as against 981 at the same date last year, being the largest number yet recorded as having flowered there in one season. Amongst those which flowered were the following, viz.:—

Orobanche rubra	Erica ramulosa
Gnaphalium Leontopodium	Ranunculus rutæfolius
Tropæolum speciosum	Montbretia Pottsii
Spiræa bullata	,, crocosmæflora
Silene Schaftii	Senecio speciosus
Libertia azurea	Cyclamen hederæfolium
Cyananthus lobatus	Gladiolus Saundersii
Sedum Ewersii	Colchicum maximum
Pterocephalus Parnassi	Origanum Tournefortii
Campanula Waldsteiniana	Stokesia cyanea
,, isophylla alba	Gentiana Andrewsii
Meconopsis Wallichii	Crocus pulchellus
Coreopsis tenuifolia	Sternbergia lutea
Calluna vulgaris plena	Parochætus communis
Mutisia decurrens	Helleborus altifolius

Havant.—This, the first Chrysanthemum and fruit show, was held in the Town Hall on the 7th and 8th, and was quite a success, with perhaps the exception of the trained plants. These were not quite so good as is usually seen at the larger shows; still, as a first show, it may be called a success. The arrangement of the whole was effective, groups being placed at the end of the hall, the specimen plants of Chrysanthemums at one end, while the opposite end was occupied with fruit and miscellaneous items. The cut blooms were arranged neatly on both sides of a table running the whole length of the hall, while the centre of the table was occupied by a row of bright-coloured plants. Viewed from the gallery, the effect was quite charming.

This recently established Society has already a good list of patrons, an efficient committee, and an energetic Secretary in Mr. C. J. Collins, under whose able management everything went smoothly. Cut blooms being the most important feature of the show, we will notice them first. The most important class was that for twelve incurved and twelve Japanese kinds. The 1st prize in this class was well won by Mr. C. Penford, gr. to Sir F. Fitzwygram, Bart., Leigh Park, Havant, who had extra large blooms of the following sorts:—Comte de Germiny, Fair Maid of Guernsey, Elaine, fine deep bloom; Oracle, rich in colour; Peter the Great and Dolores, Miss Mary Morgan and Golden Queen of England; 2d, Mr. W. White, gr. to J. E. Cox, Esq., Havant, who had beautiful flowers of Soleil Levant, Boule d'Or, Elaine, Meg Merrilies, &c.; equal 3d was awarded to Messrs. W. & G. Drover, nurserymen, Fareham, and Mr. J. Roberts, gr. to E. R. Longcroft, Esq., for good stands of flowers. For twelve cut blooms, six Japanese and six incurved, Mr. J. O. Colling, gr. to J. Taplin, Esq., Havant, was 1st, having fine blooms of Baron de Prailly, Thunberg, Lord Wolseley, Empress of India, Comte de Germiny. For this there was one entry only. For six cut blooms, reflexed varieties, Mr. W. Roberts was 1st. For six Anemone blooms, Mr. Penford was 1st, showing extra good samples. For four blooms of Mrs. G. Rundle, four of Mrs. Dixon, and same number of George Glenny, Mr. W. White was 1st, with neat, even and fresh specimens. For twelve blooms, four to be Japanese, four incurved, and four reflexed, a special prize was given by Messrs. Agate & Co.; in this Mr. Penford was again 1st, showing magnificent blooms of Boule d'Or, Oracle, Fair Maid of Guernsey, Alfred Salter, Golden Queen of England, Mrs. Forsyth, and Golden Christine —Messrs. Drover showing well in this class. For a group of Chrysanthemums, the space covered not to exceed 40 feet, Mr. W. Roberts was placed 1st with a collection of well grown plants, ranging from 2 feet to 5 feet high. The only objection to this group was that the colours were rather too dark and sombre; Mr. W. White, and Mr. J. C. Collins were placed equal 2d, with well grown plants which were not so well arranged as the 1st prize lot. Of table plants, Primulas, Cyclamens, Apples, Pears, Grapes, &c., there was a good show, the principal prizetakers being Messrs. Collins, —Hepper, gr. to Mrs. Sanderman, Penford; N. F. Fuller, gr. to Sir Jervoise Clark, Idsworth. The last named put up, in a neat manner, a collection of vegetables, consisting of twenty varieties, all of good quality, which were much admired but were not for competition. (*A Correspondent.*)

The Lambeth Amateur Chrysanthemum Society: *Nov.* 11 *and* 12.—This was the tenth annual exhibition of this Society, and for the first time it was held at Hawkestone Hall, in the Westminster Bridge Road, adjoining the Rev. Newman Hall's fine church at the corner of the Kennington Road. The competition for the prizes offered by the Society is governed by this regulation:—"That the committee and members of the Society must grow all plants and flowers shown for competition within a radius of 1½ mile from the 'Elephant and Castle,' Newington." Another regulation is to the effect that any exhibitor staging blooms dressed artificially, should be disqualified from competing, but it would be difficult to say of not a few of the flowers staged on this occasion that they had not been dressed so as to have them in the handsome symmetrical character in which they were shown. The exhibition was a great improvement on that held last year; not only was it a larger one, but the exhibits generally were much superior in quality. If such plants and flowers can be grown within 1½ mile of the "Elephant and Castle," then the Chrysanthemum must be considered a good London plant. The plants in pots were arranged on either side of the hall, two tables running down the centre took the cut blooms; in front of the orchestra was a good bank of Chrysanthemums, and in the centre of the hall was a group of charming foliage plants. The arrangement was all that could be desired, and when the hall was lighted up the effect was very pleasing; unfortunately but few visitors were attracted to view the exhibition.

PLANTS.—The classes for six and three specimen plants of Chrysanthemums did not fill. In that for six standards Mr. Tracy was 1st, with some very good examples, on stout stems 3 feet high, surmounted by good heads, carrying from twenty to thirty fine flowers. Mr. Williams was 2d, but with much inferior specimens. None of the plants were named, and only the bare name of the exhibitor was placed on the exhibition cards. Three nice plants were also shown in the class for this number of specimens, but the name of the winner of the 1st prize was not stated; a 2d prize was awarded to Mr. Tracy. In the class for a group of Chrysanthemums, including pompons, not less than twelve, Mr. Mills was 1st with good upright grown specimens, twelve in number, well grown and flowered; Mr. Ellis was 2d. None of the specimens were named; but they were highly creditable, having regard to the circumscribed district covered by the Society. There were also classes for twelve and six plants, but the prize cards do not appear to have been placed upon them. Mr. Tracy had the best six untrained pompons, well grown and flowered plants; Mr. T. Davidson being 2d; and Mr. Tracy had the best six pyramid pompons, which were better in quality and highly creditable to the cultivator; Mr. T. Haddon being 2d. The latter also had the best three specimens, and appeared to be the only exhibitor.

CUT FLOWERS.—Mr. Ellis had the best twelve incurved blooms, staging good examples of Guernsey Nugget, Hero of Stoke Newington, George Glenny, Prince of Wales, Mrs. G. Rundle, Prince Alfred, Princess of Teck, Antonelli, Beverley, Nil Desperandum, and Lady Hardinge. 2d, Mr. T. Haddon; 3d, Mr. Tracy. The best six flowers of incurved varieties came from Mr. A. Bull, who had good flowers of Mr. Bunn, Princess of Teck, Guernsey Nugget, Nil Desperandum, Mrs. Halliburton, and Marmion; 2d, Mr. T. Child. The best six blooms of one variety came from Mr. Child, who had some very fine examples of Comte de Germiny; 2d, Mr. Ellis, with Mrs. G. Rundle; 3d, Mr. J Waddon, with Golden Queen. Mr. G. S. Addison had the best six Anemone-flowered Chrysanthemums, staging Mdlle. Cabrol, Gluck, Fabias de Maderanaz, Empress, Souvenir de l'Ardenne, and Acquisition. Mr. Tracy had the best twelve reflexed Chrysanthemums, the leading flowers being Dr. Sharpe, White Christine, Golden Christine, Chevalier Domage, Ariadne, and Annie Salter; 2d, Mr. T. Haddon. Mr. Tracy had the best six reflexed flowers, staging Dr. Sharpe, Christine, Golden Christine, Attraction, Ariadne, and Orange Annie Salter; 2d, Mr. Haddon; 3d, Mr. C. H. Payne. Mr. J. W. Addison had the best six blooms of any one variety, reflexed, staging Dr. Sharpe; Mr. Williams being 2d, with Pink Christine. The strongest classes in the cut flower section were those for Japanese varieties, and they were all well filled. Mr. C. J. Till had the best twelve varieties, staging Madame Boucharlet, Japon Fleuri, Madame C. Andiguier, Rubra striata, Tendresse, Red Gauntlet, Baronne de Prailly, Fulgare, Parasol, and Roseum superbum; 2d, Mr. T. Child, his best blooms being Japon Fleuri, Fair Maid of Guernsey, Rubra striata, Prince of Wales. Mr. T. Child had the best six, mostly wrongly named. Mr. C. J. Till was 2d with Madame C. Andiguier, Madame B. Rendatler. The best six blooms of any Japanese variety came from Mr. C. J. Till, who had Madame C. Andiguier, very fine; 2d, Mr. G. S. Addison, with Madame de Sevrie. The classes for Anemone pompons were well filled. Mr. T. Child had the best twelve, three blooms of each, the following being very good:—Marie Stuart, Antonius, Astrea, Astarte, Madame Montels, Queen of Anemones, Firefly, and Jean Hatchette; 2d, Mr. Ellis, with Regulus, Mons. Astie, Astrea. Mr. Ellis had the best six, staging good examples of Calliope, Astrea, and Madame Sentir in duplicate; 2d, Mr. G. S. Addison, with Antinous, Astrea, and Mr. Astie; 3d, Mr. T. F. Davidson. In addition, there were a few classes for honorary members. The best twenty-four blooms, twelve incurved, and twelve Japanese, came from Mr. J. J. Hillier, remarkably good lots, consisting of Princess of Wales, Jeanne d'Arc, Lord Wolseley, Mrs. Heale, John Salter, Cherub, St. Patrick, Orange Perfection, Bendigo, Cannell's Bronze, Lady Talfourd, and Lady Slade; of Japanese—Madame, C. Andiguier, Boule d'Or, Madame Jardin, Fair Maid of Guernsey, Il Japonaise, Mons. Astorg, Père Delaux, Mon. Deveille, Roseum superbum, Meg Merriles, The Daimio, and Margolt; 2d, Mr. R. Whibley. The best twelve Anemone-flowered, not less than eight varieties, also came from Mr. Hillier, who had King of Anemones, Fleur de Marie, Gluck, Souvenir de l'Ardenne, Madame Goderaux, and Margaret d'Anjou; 2d, Mr. Whibley, who had in good condition, Mr. Astie, Astrea, Ariadne, Rose Marguerite, Antonius, Mr. Wyness, and Astarte; 2d, Mr. Hillier. Lastly comes a bouquet of Chrysanthemums, the best being from Mr. Davidson; Mr. E. J. Wibley being 2d. Some silver cups and other handsome special prizes were given in the leading classes in lieu of money, and these being on view attracted much attention. *R.*

Bath Horticultural: *Nov.* 12 *and* 13.—This flourishing Society held its show of Chrysanthemums, fruits, and vegetables, in the Assembly Rooms, and was acknowledged to be the best of the kind the Society has ever had. The specimen plants of Chrysanthemums were good, and, though not so large generally as those staged last week at Southampton show, one or two of the plants exceeded in size any that were shown there—one plant, Mrs. Forsyth, in a 16-inch pot and shown by Mr. Southard, gr. to J. Brown, Esq., being 8 feet over. Foliage plants were shown well by Messrs. George Cooling & Son, of Bath; Mr. Drummond, Bath; Major Clarke, Trowbridge, &c.; and fruit by Mr. Nash, gr. to the Duke of Beaufort, Badminton House, Chippenham; Mr. W. Taylor, gr. to James Chaffin, Esq., Bath; Mr. W. Iggulden, gr. to the Earl of Cork, Marston House, Frome; Mr. Pullman, gr. to R. B. Sheridan, Esq., Frampton Court, Dorchester, &c. Vegetables, too, were shown remarkably well, and especially fine were those exhibited by Mr. G. Garaway. The following are the awards:—

PLANTS (CHRYSANTHEMUMS).—For six plants, large flowered, distinct varieties, one stem (Japanese and Anemones excluded).—1st, Mr. M. Cole, gr. to P. B. Carter, Esq., with Pinus, Prince of Wales, Dr. Brock, Antonelli, &c.; 2d, Mr. Southard, whose best plant was Mrs. G. Rundle, 5 feet over and grandly flowered, and which was also awarded a special prize of 2 guineas, as being the best plant in the show; 3d, Mr. H. Scott. For four plants Mr. Tucker, gr. to Major Clarke, Bellfield, Trowbridge, was 1st, with Empress of India, Mrs. Dixon, Mrs. Corbay, and Prince Alfred; 2d, Mr. Gay, gr. to L. Daubeny, Esq., Bath; 3d, Mr. W. Taylor, gr. to S. P. Budd, Esq., Bath. For six Japanese.—1st, Mr. Taylor; 2d, Mr. M. Cole; and for a like number of pompons Mr. Tucker was 1st, with neatly trained and well flowered plants of Bob, Rosomon, Golden Madame Marthe, &c.; Mr. H. Scott being 2d; and for four plants (pompons) Mr. Gay was 1st; 2d, Mr. A. A. Walters; 3d, Mr. T. Jolly (gr., Mr. Hawkins). In the class for the best single specimen plant Mr. Southard was 1st, with Peter the Great, pyramidally trained, 8 feet high and 5 feet through at the base; Messrs. M. Cole and Tucker being 2d and 3d in that order; and for the best specimen pompon Mr. A. Hawkins was 1st, with Mdlle. Marthe; and Messrs. Tucker and A. A. Walters 2d and 3d. Mr. Southard had in Mrs. Forsyth, referred to above, the best plant of large-flowering varieties, Mr. Hawkins was 2d, and Mr. Tucker was 3d. Mr. H. Lord had the best twelve Primulas, Mr. T. Canning was 2d, and Mr. G. Garaway was 3d; and for a like number of any colour Mr. George Snell, gr. to Mrs. Counsell, was 1st. There was only one entry in the class for six ornamental foliage plants, for which a 1st prize was awarded to Mr. Drummond, of Bath. Mr. Tucker had the best specimen stove or greenhouse plant in Ixora Williamsii, Mr. Drummond being a good 2d, with the same variety; and Mr. Gale, gr. to W. Dobson, Esq., was an excellent 3d, with Eucharis amazonica, having about fifty flower-spikes. Mr. Hawkins had the best three standard Chrysanthemums, and Messrs. Tucker and Southard the 2d and 3d best. Mr. Scott had the best six plants of large-flowered varieties for conservatory decoration in Mrs. Forsyth, George Glenny, Mrs. G. Rundle, Mrs. Dixon, &c.; and Messrs. Southard and M. Cole 2d and 3d best. The three prizes offered for the best group of Chrysanthemums to cover a space of not more than 12 by 6 feet, went respectively to Messrs. Gay, Southard, and Cole, Mr. Taylor being awarded an extra prize in this class. Mr. Gay had the best six plants (about 15 inches high) of Poinsettias, and Miss Charles the 2d best. In the class for the best collection of plants arranged for effect, Messrs. George Cooling & Son were 1st, with Poinsettias, Bouvardias, Crotons, Orchids, Ferns, &c.; and Mr. Drummond was a good 2d. Mr. Garaway had the best twelve Cyclamens, and Messrs. Cooling & Son were 2d best; and were also placed 1st for six large well-flowered Bouvardias, viz., Alfred Neuner and President Garfield. The three prizes for table plants went to Mr. Shelton, gr. to W. K. Waite, Esq.; Mr. Sidney Blacker, gr. to Miss Charles; and Messrs. Cooling, in the order in which the names stand.

CUT FLOWERS.—For twenty-four cut blooms, large-flowered Chrysanthemums, in not less than twelve distinct varieties.—1st, Mr. James Hobbs, with, among others, Lord Wolseley, Barbara, Queen of England, Prince of Wales, Lady Hardinge, Princess of Teck, and Refulgens; 2d, Mr. Shelton; 3d, Mr. Thomas Hobbs. And for twelve varieties, Mr. John Baylis was 1st, his best being Prince of Wales, Golden Beverley, Golden Empress of India, Baron Beust, Barbara, and White Venus; 2d, Mr. E. S. Cole; 3d, Mr. Iggulden. For six varieties, Mr. W. Taylor was 1st, with Baron Beust, Bendigo, Barbara, Jardin des Plantes, Lord Wolseley, and Princess of Teck, Mr. M. Cole 2d, and Mr. Hopkins, gr. to J. Bailey, Esq., 3d; and for twelve bunches of pompons, Messrs. Hooper, Pocock, and Hawkins, secured the prizes in that order. For twelve blooms (Anemone-flowered varieties).—1st, Mr. Baylis, with Gluck, Georges Sand, Fleur de Marie, &c.; the 2d and 3d going to Messrs. E. S. Cole and Hobbs; and in the corresponding class for Japanese the prizes were awarded to Messrs. Baylis, E. S. Cole, and W. Iggulden, all of whom showed well. For twelve incurved, in four distinct colours.—1st, Mr. Baylis, with a beautiful lot of blooms, including Princess of Wales, Golden Empress of India, Mrs. Heale, and Prince of Wales; Mr. E. S. Cole being a good 2d, and Mr. Hobbs 2d. For eighteen distinct varieties, shown with 4 or 5 inches of stem with foliage, the prizes went to Messrs. Baylis and Mr. M. Cole.

FRUIT.—For four bunches of Grapes of not less than two varieties.—1st, Mr. W. Nash, gr. to the Duke of Beaufort, with four bunches (two of each) Black Alicante and Alnwick Seedling, Mr. W. Taylor being a close 2d, and Mr. Carpenter 3d, the same exhibitor being placed in the same position for three bunches of black Grapes; and for three bunches of white, Mr. Ellicott, gr. to H. W. Tugwell, Esq., was 1st, with admirable samples of Muscat of Alexandria, Mr. Pullman being a good 2d with the same variety, and Mr. Shelton 3d, with Foster's Seedling. Messrs. W. J. Smith, E. Hale, and Pearce had the best six dishes of Pears; and for the best four varieties of Pears the prizes were awarded to Messrs. F. R. Smith, S. Newman, and E. Fisher in the order in which their names appear. Out of twenty-two dishes of eight Pears each Messrs. J. T. Holmes (with Marie Louise), Mr. C. Burr, gr. to Mrs. Deane (with Glou Morçeau), and Mr. Carpenter (with Passe Colmar), were 1st, 2d, and 3d in that order. Out of sixty lots of dessert Apples shown Mr. Garaway was 1st, with, among others, Ribston Pippin, King of the Pippins, and Blenheim Orange, all highly coloured good examples; Mr. Pearce 2d, and Mr. Beavis 3d. For the best four varieties Mr. A. T. Hale was 1st, out of seventy-two lots staged; Mr. F. J. Walter 2d, and Mr. Hart, gr. to Mrs. General Studd, 3d. For the best eight fruits of one variety (ripe), forty-six dishes were put up, Mrs. Dutton being 1st; and for six culinary varieties, four fruit of each, 106 dishes were put up, Mr. E. T. Hale securing the 1st prize, Mr. W. J. Smith the 2d, and Mr. Beavis the 3d. There were five collections of fruit, six varieties (Pines excluded), put up, and all of very good quality. Mr. W. Nash was a good 1st, showing nice bunches of Alicante and

Muscat of Alexandria, large Medlars, Pears, Apples, and Melon. Mr. Iggulden was 2d, showing a similar collection, except that he put up two nice bunches of Mrs. Pearson, in fine condition, instead of Muscat of Alexandria; and Mr. Pullman was 3d.

VEGETABLES were shown largely and well. Mr. Garaway had the best collection of nine kinds, Mr. Thomas Evry the 2d best, and Mr. Barnefield the 3d, Mr. Holmes receiving a Certificate of Merit for his collection.

Staines and Egham District.—The third exhibition of Chrysanthemums and other plants and flowers held by this suburban Society took place in the spacious Town Hall, at Staines, on the 13th inst. The sides of the Hall were effectively dressed with eight capital groups of Chrysanthemums in pots, set up in the customary style, the general effect being one of much life and colour, but wanting variety and elegance. Such result is, however, inevitable in all Chrysanthemum plant groups as at present arranged. Mr. Thatcher, gr. to H. Leigh Bennett, Esq., Thorpe, was 1st, his group being well faced and general quality excellent; Mr. Springthorpe, gr. to G. H. Palmer, Esq., Egham, was 2d, with a fine lot of plants and fine blooms, but the exhibitor had too much crowded his plants at starting, hence the effect was weak; Mr. Hutchings, gr. to C. Ashby, Esq., Staines, and Mr. Riddick, gr. to W. Paine, Esq., Egham, were 3d and 4th. Mr. Thomas, gr. to H. N. Ritchie, Esq., Thorpe, was 1st, with four capital large-flowered specimen plants; Mr. Riddick had the next best lot, and Mr. Hutchings was 3d. The finest single specimen was found in a well trained plant of Golden Christine, shown by Mr. Thatcher. Mr. T. Cox, gr. to J. F. Merville, Esq., Staines, had a good plant of the same kind; and Mr. Riddick was 3d, with a good plant of White Empress. Mr. Riddick had the best large-flowered standards, rather too stiffly tied, in Golden Christine, Queen of England, Guernsey Nugget, and Pink Venus; and Mr. Cox the best pair, in Guernsey Nugget and Prince of Wales. Mr. Thatcher had in Mrs. Rundle and Mrs. Dixon the two best large-flowered specimens, and Mr. Cox two excellent dwarf pompons in Madame Marthe and Mr. Astie. Pompon standards and pyramids were very well shown, though throughout somewhat too hardly tied.

ZONAL PELARGONIUMS are always well done at Staines, and those arranged in front of the orchestra lent a rich colouring to the show. Mr. C. Simons, gr. to J. N. Pimm, Esq., Staines, had six large and beautifully flowered plants in Vesuvius, White Vesuvius, Eureka, Caxton, Wonderful, and the rich double Guillion Mangilli; Mr. Cox came 2d, with some large plants hardly at their best; and Mr. Hutchings had smaller ones that will be in a blaze of bloom in a few day's. Berried Solanums, Mignonette in pots, and Chinese Primroses, were all well shown, and greatly aided the dressing of the tables. Of miscellaneous plants, Mr. R. Newbury, Feltham, had a huge White Marguerite, 5 feet through, that was a mass of bloom, and obtained high commendation. There were open classes for twenty-four blooms of both incurved and Japanese kinds here, but the competition was chiefly local. Mr. Thomas had the best twenty-four in the incurved section, very fair blooms; Mr. Riddick coming 2d, and Mr. Thatcher 3d. In the Japanese class, Mr. Thomas was again 1st, having some fine blooms; Mr. Hutchings coming 2d, and Mr. Thatcher 3d. In the local class for twenty-four blooms, Mr. Hutchings was 1st, and Mr. Springthorpe 2d. The best lot of Japanese blooms was shown in the local class for twenty-four flowers, and came from Mr. Gray, gr. to A. G. Thomas, Esq., Englefield Green, a really compact and exceedingly fresh lot, that merited high praise. Messrs. Springthorpe and Riddick came 2d and 3d. Mr. James Bloomfield, gr. to B. Warwick, Esq., Englefield Green, had the best twelve Japanese, really capital blooms; and Mr. Collings, gr. to J. Holgate, Esq., Staines, had the best twelve incurved. The Secretary's special prizes for six Japanese and six incurved, same kinds, was taken by Mr. Springthorpe, who had very fine Madame Rendatler and Mrs. Jay. Very fine blooms were shown in the reflexed and pompon sections. Bouquets of Chrysanthemums were largely shown, the best, a simple arrangement of Elaine and Dr. Sharpe, dressed with Fern, being placed 1st, and was shown by Mr. Springthorpe; Mr. Simms coming 2d with a gay but much more mixed arrangement. Some very pretty baskets of flowers came from Mrs. House, Staines, that were much admired. Mr. Thomas had the best four dishes of Apples, and Mr. Jewin the best dishes of Pears. Vegetables were finely shown, Mr. Springthorpe having the best lot in fine Cauliflowers, Beet, Mushrooms, Telegraph Cucumbers, Brussels Sprouts, and splendid Tomatos; Mr. Thatcher was 2d. Altogether the exhibition was a credit to the district, the which, unfortunately, does not support any summer display.

Richmond Horticultural.—The committee of this Society revived their autumn exhibition this year, though, it may be thought, with questionable advantage, as, coming so late as the 13th, not only were the best flowers past, but the cream of the collections had been pretty well skimmed for preceding shows. Held in the splendid rooms attached to the "Castle" Hotel at Richmond—probably the most roomy of the kind to be found round London—the exhibits seemed thin. Had all the show been centred in one of the rooms the effect might have been more pleasing. Not a few of these useful elements at shows, non-competitive groups, were seen Mr. F. R. Kinghorn, Richmond, showed a capital lot of Heaths, finely bloomed, dressed with Palms, Dracænas, and other foliaged plants. Mr. R. Laing, Twickenham, set up a neat group of ordinary decorative plants. Mr. R. Clarke, Twickenham, sent a selection of his grand strain of Cyclamen, finely flowered; and a group of fine dwarf sturdy plants, not less meritorious, came from Messrs. Page & Sons, Teddington. Mr. A. Bray, Floral Depôt, Richmond, set up a beautiful trophy of grasses, including fine plumes of Pampas and other species, charming wreaths, crosses, &c., that could not fail to secure warm admiration. The Messrs. Hooper & Co., of Twickenham, had the best miscellaneous group—a very charming arrangement; Mr. Chadwick, Hanger Hill, Ealing, coming 2d, having some small but well flowered Gloxinias, white Camellias, &c.; Mr. G. Filsell, gr. to J. R. Green, Esq., Twickenham, came 3d, having a dense base of Ferns and other dwarf plants, but his upper arrangement was thin and stiff. Messrs. Hooper & Co. had the best dressed basket of plants, in large flat baskets, but in all cases there was an excess of material, crowding being general; Mr. R. Bates, gr. to J. R. Meeks, Esq., Poulett Lodge, Twickenham, was 2d. Table plants made up a striking feature, though hardly utilised to the best advantage, as they are at Kingston. Mr. G. King, gr. to R. Few, Esq., Esher, had the best six in very handsome Crotons, Dracæna terminalis, Pandanus Veitchii, Cocos Weddelliana, and Aralia erecta; Messrs. Hooper & Co. came next with Dracænas Elizabeth and Goldieana, Areca nobilis, and Phœnix rupicola, Palms, Aralia Veitchii, and Pandanus Veitchii; Mr. Munro, gr. to J. D. Paull, Esq., Cambridge House, Twickenham, was 3d. The best berried plants were fairly good Solanums. Mr. O. Hickle, gr. to W. Cunard, Esq., Orleans House, had the best six Palms in 6-inch pots, in Rhapis flabelliforme, Cycas Armstrongi, Euterpe edulis, Kentia Balmoreana, Areca lutescens, and Caryota erecta; Mr. Bates was 2d, with pretty plants; and Mr. Rowell, gr. to Lady Parker, Richmond, 3d. The groups of Chrysanthemum plants were limited in number, the best coming from Mr. Munro, though rather flat, still carrying a fine lot of blooms; Mr. Sallows, gr. to J. J. Flack, Esq., Twickenham, came 2d, with a nice clean grown collection, the plants full of foliage; and Mr. W. Campin, gr. to Thos. Cave, Esq., Richmond, was 3d. In trained plants Mr. King was 1st, with some large examples of John Salter, Safrano, Lord Wolseley, Mrs. Halliburton, Mrs. G. Glenny, and Lady Hardinge; Mr. Sallows was 2d, with hardly less excellent specimens. The best six pompons came from Mr. Child, gr. to Mrs. Slade, Claygate. And Mr. Sallows had the best three large-flowered standards in the eternal three bundles; Mr. Trussler, gr. to A. Cooper, Esq., Twickenham, coming next with Mrs. Dixon. Mrs. Rundle, and Lady Talfourd. Of cut blooms a fine lot was shown by Messrs. Lee & Sons, Hammersmith. The best twenty-four Japanese came from Mr. King, were getting a little over, and consisting of kinds the names of which have been often repeated. Mr. Woodgate, gr. to Lord Wolverton, Kingston, was 2d, and Mr. Child 3d. Mr. Woodgate had the best twenty four incurved, fairly good blooms of well known kinds; Mr. W. Bates coming 2d, and Mr. W. Brown, Richmond, 3d. The six best Japanese of one kind were—A. Davis, fairly good samples, from Mr. Woodgate; the 2d best lot being Peter the Great; whilst the six best incurved of one kind were found in Guernsey Nugget, from Mr. Grant, Twickenham. Mr. King had the best six incurved kinds in Mrs. Shipman, Lady Hardinge, Mrs. Heale, Princess Teck, John Salter, and Golden Emperor.

Mr. Bates had the only collection of six dishes of fruit, excellent samples; whilst the best two bunches of Black Grapes were sent by Mr. Hechell, fair bunches of Gros Colmar; Mr. Campin had the 2d best in Alicantes. Mr. Bates had the best pair of bunches of White Grapes, in Muscat of Alexandria.

In collections of vegetables the prizes were taken by Mr. Coombs, gr. to Sir H. Meux, Mortlake; Mr. Waite, Glenshurst, Esher; and Mr. Morrell, gr. to J. S. Rutter, Esq., Richmond. Mr. W. Binder, of Kew Gardens Station, put up a superb display of market fruit. Not a few charming bouquets, epergnes, and other decorative efforts were exhibited, but we cannot notice these more fully for lack of space just now.

The Tunbridge Wells.—The exhibition of this Society was held in the Great Hall, near the railway station, at Tunbridge Wells, on Nov. 13 and 14. The Society is entirely managed by a working committee of gardeners, Mr. E. Charlton is Hon. Sec., and the Society is well supported by the nobility and gentry of the neighbourhood. The entries were so numerous this year, that the large hall failed to accommodate them, a large tent had to be put up, in which were placed the groups and other exhibits. The specimen plants were numerous and very effectively arranged at either end of the hall. The pyramid specimens were not quite so well filled out as they might have been, but this was perhaps more the fault of the method adopted than of the exhibitors. A plant that naturally takes the form of a bush ought not to be contorted into a formal pyramid, the Chrysanthemum at least does not lend itself to it. A few of the dwarf specimens were considerably overtrained, the flowers being tied down to a table-like surface; for this the exhibitors were entirely to blame, and it would be well for them to train their specimens more into the form of a bush without too much twisting and turning of the shoots. The principal class was for eight Chrysanthemums of any of the classes. The plants were trained flat and as pyramids, and did not make effective groups, although the quality was good. Mr. J. Wilkins, Shirley Hall, Langton, gained the 1st prize—a Silver Cup. Mr. E. Killick, gr. to Professor Wilson Sandfield, Nevill Park, exhibited six good dwarf-trained large-flowered specimens, and was awarded the 1st prize. Mr. Wilkins was 1st for six pompon specimens. The plants were in good condition and well grown. Mr. R. Beilby, gr. to W. H. Tindall, Esq., Hollyshaw, also exhibited good plants, and gained a 1st prize for pyramids. The groups of plants gleaned from all or any of the classes formed an important part of the exhibition, and it was here that the closest contest for the prizes took place. There was very little difference indeed between the 1st and 2d prizes in point of merit. The 1st prize was awarded to Mr. J. G. Wulff, 1, Nevill Park; and the 2d to Mr. H. Scammell, gr. to C. Reily, Esq., The Priory, Nevill Park. Other exhibitors gained 1st prizes for plants, some of the latter being of great merit; but as there were sixty-seven classes altogether in the schedule it would take too much space to enumerate all. There were two sets of prizes offered for twenty-four cut blooms, which brought out a good competition. Mr. W. Read, gr. to Mrs. Cripps, Mount Calverley Lodge, gained the 1st prize in the open class; and Mr. J. Legg, gr. to the Rev. E. H. Boordman, in the limited one, the latter also being 1st for twelve blooms in the limited class; Mr. Legg also gained 1st prize for six table plants in a strong competition. There was nothing novel to record amongst the cut blooms, the average quality being better than usual at this exhibition. Poinsettias are always exhibited in capital condition at this show, the variety is evidently different from that usually cultivated; but the system of cultivation must also be a good one to give such results as we annually see here. Mr. J. Allan, gr. to G. H. Field, Esq., Ashurst Park, was the principal prizetaker.

The exhibition of fruit was a remarkably good one. The Apples and Pears were as good as we usually see at the metropolitan exhibitions. The principal exhibitors were Mr. W. Johnston, gr. to the Marchioness of Camden, Bayham Abbey Gardens; Mr. G. H. Goldsmith, gr. to P. C. Hardwick, Esq., Hollenden, Hildenborough; and Mr. F. Bridger, gr. to Lord De Lisle and Dudley.

Grapes were fine, especially the black kind, all the prizes going to the Alicante variety, Mr. H. Scammell having by far the best. There were also some very good collections of fruit exhibited, the best being from Mr. J. Legg; it contained really handsome bunches of Muscats, Lady Downe's, and Alicante Grapes, Musa Cavendishii, and a nice Queen. Mr. Legg also gained the 1st prize for good Muscat Grapes.

One of the most interesting features of the exhibition was a collection of cut flowers from Mr. Hollah, The Gardens, Redleaf, Penhurst; they had all been cut in the open garden, and comprised about eighty distinct species and varieties. There were Saponaria calabrica, with its pretty rose flowers; sweet Honeysuckle, and Eccremocarpus scaber, single Dahlias and the Cactus kind, Tea Rose Catherine Mermet, Chrysanthemums, bunches of the common Primrose, Rudbeckia Newmanii, Tritoma Uvaria, Spiræa ulmaria and S. japonica, Cornflowers, Heaths, Fuchsia sempervirens, Lithospermum prostratum, Gentiana acaulis, Aponogeton distachyon, Fuchsias, Pelargoniums, Escallonia rubra, and the pretty Menziesia polifolia in variety. There were 195 entries of plants and blooms, 117 entries of fruit, there being actually 309 dishes of Apples and Pears on the tables. *J. D.*

The Chrysanthemum Exhibition at the Crystal Palace. — This exhibition was held on Friday and Saturday, Nov. 14 and 15, and although the exhibits were not as numerous as the promoters of the show anticipated, they were, generally speaking, of good quality, no doubt many of those who entered and failed to compete were unable to do so by having "too many irons in the fire," as two or three and more Chrysanthemum shows a day was the order for last week. However, many of the awards would propably have been the same, as most of the exhibitors were noted growers. Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Mitcham, Surrey, was successful in bearing off the premier prize for thirty-six incurved (distinct) and thirty-six Japanese (distinct) varieties respectively; his incurved blooms were fine, as also were his Japanese. The names of the best incurved were as follows:—A. Salter, Queen of England, Golden Empress, White Empress, Lord Alcester, Hero of Stoke Newington, Barbara. His best blooms of Japanese were Criterion, Sarnia, Sultan, Fair Maid of Guernsey, Baron de Prailly, Duchess of Albany, Meg Merrilies, L'Incomparable, Nuit d'Automne, Ethel, Bismarck, Père Delaux, Ceres, Mons. Ardenne, Grandiflorum, and J. Delaux. Mr. C. Herrin, Chalfont Gardens, Gerrard's Cross, was 2d, having good Baron de Prailly, Thunberg, F. A. Davis, Boule d'Or (very fine); Mr. J. W. Springbett being 3d. For twenty-four pompon, Anemone-pompon, and hybrid varieties (distinct), Mr. E. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill House, Ealing, was 1st, having Elenore, President, Madame Montels, Polycarp, and Queen of Anemones amongst his best; he also taking 1st in the amateur's class for the same; Mr. E. Arnold, Oak Lee, Sydenham, also being 2d in each class. For the best twelve incurved blooms (distinct), Mr. W. Slogrove, gr. to Mrs. Crawford, Reigate, was 1st, with good blooms of Empress of India, Guernsey Nugget, Queen of England, White Globe, Venus, Jardin des Plantes. Mr. J. Bury, gr. to A. Richards, Esq., Tewkesbury Lodge, Forest Hill, was 2d, having also very good blooms of Fingal, Prince Alfred, and Guernsey Nugget; Mr. T. Bailey, Shardloes Gardens, Amersham, 3d. For twelve Japanese varieties (distinct), Mr. J. Wyatt, gr. to J. Perry, Esq., Bradenhurst, Caterham Valley, was 1st, with good blooms of Criterion, Fair Maid of Guernsey, Madame C. Andiguier, The Daimio, Baron de Prailly, Thunberg, Fanny Boucharlet, and others. Mr. W. Slogrove being 2d, with good blooms of Elaine,

Roseum superbum, L'Incomparable, and others; Mr. J. W. Springbett 3d. For twelve large flowered Anemones, distinct, Mr. J. Cooke, gr. to E. M. Parratt, Esq., Bessborough House, Upper Tooting was 1st. In the amateurs' class for twenty-four incurved varieties (distinct), Mr. C. Herrin was 1st, also for twenty-four Japanese. Amongst his incurved we notice Jeanne d'Arc, Golden and White Empress of India, Venus, Mrs. Halliburton, Mrs. Shipman, and others; and amongst his Japanese, Thunberg, Mad. C. Andiguer, Album plenum, J. Delaux, Magnum Bonum, Sarnia, Meg Merrilies, and others. Mr. T. Couldry, gr. to J. Levey, Esq., The Shrubbery, Grove Park, Lee, was 2d; and Mr. D. C. Powell, gr. to the Earl of Devon, Powderham Castle, Exeter, 3d, for both twenty-four incurved and twenty-four Japanese. For twenty-four large flowered Anemones, Mr. E. Chadwick was 1st. For nine incurved varieties, distinct, Mr. C. Goode, gr. to G. G. Stone, Esq., Eastcote, Red Hill, Surrey, was 1st, with a nice lot; Mr. J. Sharpe, Parkfield, Grove Park, Lee, 2d; and Mr. W. Slogrove 3d. For nine Japanese, distinct, Mr. W. Slogrove, Mr. C. Goode, and Mr. J. Wyatt, were respectively 1st, 2d, and 3d. For nine reflexed varieties, Mr. E. Arnold, Oak Lee, Sydenham, was 1st. For the best group of Chrysanthemums (open), Messrs. J. Laing & Co., Forest Hill, were 1st; Mr. W. Curd, florist, Croydon, 2d. For the best group by amateurs, Mr. W. Webster, gr. to Mrs. Croll, Mavis Bank, Upper Norwood, was 1st; and Mr. G. Collins, gr. to J. Anderson, Esq., Wandsworth Common, 2d. Mr. C. Turner, of Slough, had a fine collection of Ivies. In the miscellaneous class prizes were awarded to Messrs. H. Cannell & Sons, Swanley, for collections of Primulas, Pelargoniums, &c.; 2d, to Messrs. S. Dixon & Co., Moorgate Street, for cut Chrysanthemums; and an extra to Messrs. Northard & Co., Cotton's Wharf, E.C., for Apples. First-class Certificates were awarded to the following:—Mr. J. W. Springbett, for Chrysanthemums Madame Cabrol, Sœur Dorothée, and Fabias de Maderanaz; Mr. W. Watson, for Chrysanthemum Madame C. Croix; H. Cannell & Sons, for Chrysanthemum Cullingford; and Messrs. J. Laing, for Chrysanthemums Mons. Tarin, La Pureté, Beauté des Jardins, Camieu, and Mons. Astorg. A very tastefully arranged group of Chrysanthemums, Palms, &c., were exhibited by Mr. Head, gr. at the Crystal Palace, which was much admired.

Manchester Chrysanthemum.—This exhibition was held on November 18 and 19 in the Town Hall, which, though a commodious building, was nicely filled, indeed some of the non-competing stands of Apples were arranged outside. The chief feature of the show was Chrysanthemums, which were, we believe, better than ever before exhibited at Manchester, for it must be understood that the citizens of Cottonopolis are not so enthusiastic in regard to the queen of autumn and early winter—the Chrysanthemum, as thay are towards the queen of flowers—the Rose; and consequently the Manchester exhibition is not on the extended and liberal scale one usually expects to find there; yet in the coming years they may come up to Liverpool, Birmingham, and others, which are the headquarters of the Chrysanthemum fraternity. Nevertheless the exhibits were very creditable, and the show on the whole presented a bright and happy appearance, and judging from the number of visitors, all of whom evidenly much—and many critically—appreciated the feast of flowers provided for them, we should think it would prove a success financially. As in many shows, some of the leading flowers were getting past their best, while some revealed the amount of trouble which had been taken to keep them back. Most of the classes were well filled, and in some instances the claimants for the various posts of honour ran each other close, but we are convinced the judges acquitted themselves well of their task. The classes were open to all-comers, but it must be admitted the amount of prize-money is insufficient to attract very extended notice while that given in connection with other shows is so much more enticing. The miscellaneous groups added greatly to the floral display, and where special recognition was awarded it was honestly merited.

PLANTS IN POTS.—Nine large-flowered Chrysanthemums, distinct varieties.—Well to the front in this class was Mr. Thomas Cash, gr. to C. S. Agnew, Esq., Prestwich, with medium, well grown plants of the following, well furnished with healthy foliage, and large well formed flowers:—Empress of India, Pink Venus, Elaine, Prince of Teck, Chevalier Domage, very fine; Pink Venus, Prince of Wales, Mrs. Bunn, Hero of Stoke Newington, and Dr. Sharpe, the last grandly coloured and with good size and substance in the flowers; 2d, Mr. J. Kitchen, gr. to Wm. Holland, Esq., Higher Broughton, near Manchester, whose collection was very neat; 3d, Mr. R. Johnson, gr. to Thos. Slatter, Esq., Whitfield. There were also two other collections staged. For four large-flowered distinct varieties, Mr. Cash was again well to the front, and Mr. Kitchen occupied the same relative position as in the premier class. The 1st collection consisted of Queen of England, Pink Venus, Ranunculus, and Empress of India. 3d, Mr. W. Burns, gr. to Jas. Fletcher, Esq., Stoneclough. In the class for four distinct pompons, Mr. J. McDonald, gr. to M. S. Bliss, Esq., Broughton Park, took the lead, with splendidly flowered plants of yellow, lilac, and white Cedo Nulli, and St. Thais; 2d, Mr. H. Bennett, gr. to Thomas Dickens, Esq., Higher Broughton; 3d, A. Bliss, Esq., Higher Broughton. There were four entries for six Japanese varieties, the premier position being well gained by Mr. Thomas Cash, with dwarf, well-grown plants of Fair Maid of Guernsey. L'Isle des Plaisirs, La Nymphe, Cossack, Meg Merrilies, and La Charmeuse; 2d, Mr. C. Pritchard, gr. to L. Yates, Esq., Didsbury, amongst whose best plants were Cossack, finely coloured, James Salter, and Bouquet Fait; 3d, Mr. M. R. Johnson, gr. to Thomas Slater, Esq. In the class for eight plants for conservatory decoration (not disbudded), Mr. H. Bennett was 1st, with La Charmeuse, La Nymphe, Mulberry, and Mons. Plancheneau, large-flowered varieties, and the three forms of Cedo Nulli and Rosinante pompons, all of which were profusely flowered in 10-inch pots.

CUT FLOWERS.—Twenty-four blooms, large-flowered, distinct.—1st, Mr. G. G. Kirton, gr. to John Allen, Esq., Altrincham, with a splendid stand, consisting of Mabel Ward, Mad. Madeline Tezier, Pink Perfection, Mrs. Heale, Venus, Beverley, Mr. Harding, Eve, John Salter, Beauty, Barbara, Princess of Teck, Baron Beust, Mr. Brunlees, Lady Hardinge, Guernsey Nugget, Lady H. St. Clair, Lord Wolseley, Lord Alcester, Mr. Cullingford, Empress of India, Nil Desperandum, Golden Empress, and Hero of Stoke Newington, even and good all round; 2d, Mr H. Rose, gr. to D. McClure, Esq., Heaton Mersey, near Manchester, whose stand was also very good, the following blooms being excellent:—Jardin des Plantes, Golden Empress, John Salter, Mrs. Heale, Miss Parnell, White Beverley, and Mrs. Halliburton; 3d, Messrs. W. Clibran & Son, nurserymen, Altrincham. In the corresponding class for twelve blooms the premier position was taken by Messrs. Clibran & Son, whose stand was first-class, including Barbara, Mrs. Heale, Princess Teck, Mr. W. E. Gladstone, Beverley, Lord Wolseley, Guernsey Nugget, White Beverley, Queen of England, Empress and Golden Empress of India; 2d, Mr. P. Mottershead, gr. to H. S. Woodcock, Esq., Wigan, whose best flowers were Nil Desperandum and Jardin des Plantes; 3d, Mr. C. Dickson, gr. to J. G. Platt, Esq., Cheadle. In the class for twenty-four blooms, including Anemone, Japanese, and pompons, there were nine competitors, but the 1st place was easily gained Mr. H. Rose, whose flowers were all good, especially the Japanese; 2d, Mr. C. Jones, gr. to Mrs. Shaw, Heaton Bolton; 3d, Mr. G. Mottershead, whose stand ran the 2d very closely.

MISCELLANEOUS PLANTS, &C.—Ten Primulas.—1st, Mr. W. Radcliffe, Hollybank, Whitefield, with excellent plants, some being grand colours. For six pots of Roman Hyacinths there was a keen competition, and they were splendidly shown, Mr. H. Bennett taking the 1st prize.

NON-COMPETING EXHIBITS.—A splendid bank of Chrysanthemums in pots was staged by Mr. G. G. Kirton (gr. to J. Allen, Esq.), Altrincham, consisting of well-grown dwarf plants, representing mainly the large incurved section, the group richly meriting the extra prize awarded. Messrs. G. & W. Yates, Market Place, Manchester, staged a fine lot of flowering and foliaged plants. Messrs. A. J. Bruce, Chorlton-cum-Hardy, and Messrs. Dickson, Brown & Tait, of Manchester, also materially contributed to the beauty of the show.

Apples were well shown by Mr. W. Nield, gr. to T. W. Tatton, Esq., J.P., Wyldenshaw, Northenden, by an exhibition of forty dishes, each distinct, and for which the judges awarded the Society's Silver Medal: this honour Mr. Nield richly deserved, for his object in showing was to convince the gentry of Manchester that first-class Apples could be grown within six miles of their busy city, and a better demonstration could not possibly have been given. Messrs. W. Caldwell & Sons, Knutsford, and Messrs. Richard Smith & Co., of Worcester, each staged very fine examples, the two firms showing upwards of a hundred dishes, most of which were excellent. (*Correspondent.*)

PLANTS, &c., FOR A TOWN GARDEN.

A DWELLER at Notting Hill ("J. A. C.") asks three questions, which require distinct answers. I will take them *seriatim*. He says:—"I have a small greenhouse 13 by 12 feet, and about 10 feet high, facing east and south, the latter aspect a good deal shaded by the neighbouring house. It is heated with hot water. I wish to know whether, with these conditions, I may look for success in growing the ordinary greenhouse plants in London." My correspondent lives on the west slope of Notting Hill, and I know from actual experience that much can be done. In a house shaded on the south it would be useless to attempt the storage of Pelargoniums in the winter, and all bedding plants are so cheap in the spring that it is never worth the trouble they entail to keep them. Then the greenhouse is too high, as all such plants require to be near the glass. Ferns, however, would succeed admirably, and several climbers are well adapted for such a greenhouse. Fuchsias will also succeed and flower well. One of the best climbers is Plumbago capensis. An amateur living at Notting Hill has a plant 10 feet across which was covered with flowers this summer for more than three months. He bought it for *1s. 6d.* two years ago, and placed it in the ground inside a similar greenhouse. Another climber which would do well is Lapageria rosea; it loves shade, and must not be kept too warm. Cobæa scandens would grow like a weed, and probably produce hundreds of flowers in a year or two. Tigridias and Lilium auratum would also do well, and might be put out in the summer: all these require very little heat. With more heat many Palms, Dracænas (not the variegated ones), the Indiarubber Ficus, and the Blue Gum (Eucalyptus), grow luxuriantly as well as all the New Zealand Tree Ferns, and they might under such conditions be put out with the Lilies and Palms all the summer. If sufficient heat can be maintained, Cattleyas, Odontoglossums, and other Orchids, many of which are now very cheap, would succeed. An inhabitant of Notting Hill has, I know, been very successful with them. Gloxinias and many Begonias would succeed admirably, but I have said enough to show that success is to be attained. It is better, however, to trust to foliage plants than to flowers, with the exceptions already made.

The second question is—"What are the best hardy plants to grow out-of-doors?"

The difficulty in London and its suburbs arises not so much from the soil, but from the soot-laden atmosphere. Most people trust to bedding plants for flowers, and perhaps that is the safest course. The London parks show that Rhododendrons do very well, if the soil is well prepared for them, for some years, but sooner or later they fail. The most vexatious thing in growing flowers out-of-doors is that the blossoms are spoiled with dirty rain, loaded with soot, before they are open or directly after. Again, foliage plants are best. The Sumach, variegated Elder, Aucubas and Maize, Castor-oil plants, and the contents of the greenhouse, make a very pleasant garden.

The last question is—"I have a bit of rockery: what would flourish best on this?"

Many plants do well in London on a rockery, if it is well drained, and the soil can always be good. Echeverias do well, but need the protection of a frame in winter; several Campanulas, Salvias, and all the more hardy old-fashioned rock flowers will succeed. The attempt to make a successful rockery has been much neglected near London, and I feel assured that any honest attempt to do so would be very successful, especially if it were protected from rain by moveable sashes in dirty weather.

In conclusion, I must warn my correspondent, "J. A. C.," that all plants require far more attention in London than in the country; constant syringing to keep the leaves clean in the open, and sponging in the greenhouse is necessary—any neglect would be fatal to the plants. Hundreds of plants can be grown with fair success, but all need much attention; I believe they suffer in constitution, and will need renewing from time to time, but for the lover of a garden the pleasure is worth the toil, and under glass very great success can be attained, although in the open, perhaps, the result may be disappointing to one who has enjoyed a country garden. *B. T. L.*

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 19, 1884.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 4TH EDITION		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity; Sat. = 1000	Average Direction.		
Nov.	In.	In.	°	°	°	°	°	°				In.
13	30.22	+0.41	48.0	43.0	5.0	45.4	+ 2.7	41.3	86	N.N.W		0.00
14	30.27	+0.50	46.5	35.5	11.0	40.0	— 2.5	34.7	82	E. N.E		0.00
15	30.23	+0.47	43.5	33.0	10.5	37.8	— 4.5	33.1	83	E. N.E.		0.00
16	30.12	+0.37	40.0	13.0	27.0	37.0	— 5.2	31.2	83	E. ; N.E		0.00
17	30.09	+0.36	42.5	33.5	9.0	38.4	— 3.6	43.5	83	W.N.W		0.00
18	30.17	+0.41	43.5	35.0	8.5	39.7	— 2.2	35.8	86	W.N.W		0.00
19	30.28	+0.58	44.0	35.5	8.5	40.0	— 1.8	36.1	86	N. ; W.N.W		0.00
Mean	30.20	+0.45	44.0	35.5	8.5	39.8	— 2.4	35.2	84	W.N.W		0.00

Nov 13.—Fine day and night; dull.
— 14.—Fine day and night.
— 15.—Hoar frost in early morning. Very fine day and night.
— 16.—Dull day and night.
— 17.—Dull day; fine, cold night.
— 18.—Fine morning; slight rain about 11 A.M. Dull, cold night.
— 19.—Very fine day. Fine night; overcast.

LONDON: *Atmospheric Pressure.*—During the week ending November 15, the reading of the barometer at the level of the sea decreased from 30.33 inches at the beginning of the week to 30.28 inches by 9 A.M. on the 9th, increased to 30.56 inches by 9 A.M.

on the 10th, decreased to 30.29 inches by 3 P.M. on the 12th, increased to 30.41 inches by 9 A.M., and decreased to 30.37 inches by 3 P.M. on the 13th, increased to 30.48 inches by 9 A.M. on the 14th, decreased to 30.44 inches by midnight on the 14th, increased to 30.47 inches by 9 A.M. on the 15th, and was 30.39 inches by the end of the week.

The mean reading of the barometer for the week was 30.38 inches, being 0.36 inch higher than last week, and 0.42 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 55°.5, on the 10th; the highest on the 15th was 43°.5. The mean of the seven high day temperatures was 49°.3.

The lowest temperature was 33°, on the 15th; on the 13th the lowest temperature was 47°. The mean of the seven low night temperatures was 41°.1.

The greatest range of temperature in one day was 11°, on the 14th; the smallest range was 5°, on the 12th and 13th. The mean of the seven daily ranges was 8°.2.

The mean temperatures were—on the 9th, 50°; on the 10th, 50°.3; on the 11th, 44°.4; on the 12th, 44°.7; on the 13th, 45°.4; on the 14th, 40°; on the 15th, 37°.8; of these the first five were above their averages by 6°.1, 6°.8, 1°.2, 1°.8, and 2°.7 respectively, and the last two were below by 2°.5 and 4°.5.

The mean temperature of the week was 44°.7, being 4°.6 lower than last week, and 1°.7 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 102°, on the 10th. The mean of the seven readings was 82°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass was 25°.5, on the 15th. The mean of the seven readings was 32°.2.

Rain.—0.025 inch fell on the 9th.

ENGLAND: *Temperature.*—During the week ending November 15, the highest temperatures were 60° at Truro, 58° at Plymouth, 57° at Sunderland; the highest at Sheffield was 53°, at Bradford 53°.5, at Wolverhampton 53°.8. The general mean was 55°.5.

The lowest temperatures were 29° at Cambridge, 29°.6 at Wolverhampton, 32°.2 at Brighton; the lowest at Plymouth was 40°.5, at Sunderland 38°, at Leeds 37°. The general mean was 34°.6.

The greatest ranges were 27°.5 at Cambridge, 24°.2 at Wolverhampton, 24° at Truro; the smallest ranges were 16°.9 at Bradford, 17°.5 at Plymouth, 18° at Sheffield and Leeds. The general mean was 20°.9.

The mean of the seven high day temperatures was highest at Truro, 55°.3, at Plymouth 54°.2, at Leeds 50°.8; and was lowest at Bolton, 47°.9, at Sheffield 48°.6, at Cambridge 48°.7 The general mean was 50°.

The mean of the seven low night temperatures was highest at Truro, 47°.4, at Plymouth 45°.6, at Brighton 42°.2; and was lowest at Wolverhampton, 36°, at Bolton 36°.9, at Cambridge 37°.1. The general mean was 40°.5.

The mean daily range was greatest at Wolverhampton, 13°.1, at Cambridge 11°.5, at Bolton 11°; and was least at Brighton, 6°.8, at Truro 7°.9, at Blackheath and Sheffield 8°.2. The general mean was 9°.5.

The mean temperature was highest at Truro, 50°.8, at Plymouth 49°.4, at Leeds and Preston 45°.4; and was lowest at Bolton 41°.9, at Wolverhampton 42°, and at Cambridge 42°.4. The general mean was 44°.8.

Rain.—The largest falls were 0.18 inch at Truro, 0.16 inch at Liverpool, 0.14 inch at Sheffield; the smallest falls were 0.03 inch at Blackheath and Leeds, and 0.04 inch at Cambridge. The general mean fall was 0.08 inch. No Rain fell at Brighton.

SCOTLAND: *Temperature.*—During the week ending November 15, the highest temperature was 54°.3, at Aberdeen; at Dundee the highest was 52°. The general mean was 53°.4.

The lowest temperature in the week was 25°, at Glasgow and Perth; at Leith the lowest temperature was 31°.6. The general mean was 28°.6.

The mean temperature was highest at Greenock, 44°.4; at Dundee, 40°.9. The general mean was 43°.3.

Rain.—The largest fall was 0.73 inch, at Glasgow, and the smallest fall was 0.14 inch, at Aberdeen. The general mean fall was 0.42 inch.

JAMES GLAISHER, F.R.S.

Obituary.

MR. WILLIAM PARKER HAMOND, of Pampisford Hall, Cambridgeshire, and of Haling, near Croydon, Surrey, formerly High Sheriff of the former county, died on Wednesday, November 12, at his seat near Cambridge. He was the only son of the late Mr. William Parker Hamond, of Pampisford Hall and Haling, by his marriage with Margaret, daughter of Mr. John Maling, of The Grange, Durham, and widow of Mr. Robert Nicholson, and was born in 1827. Mr. Hamond was educated at Eton and at Trinity College, Cambridge, and was called to the Bar at Lincoln's Inn in Michaelmas Term, 1853. He was a magistrate and Deputy-Lieutenant for Cambridgeshire, and served as High Sheriff in 1879. To our readers Mr. Hamond's name will be familiar as the proprietor of the finest and most extensive pinetum in this country. Of this unrivalled collection we have frequently had occasion to speak, as well as of the extensive planting operations carried on by Mr. Hamond, and which have converted a large area of barren hillside into productive woodland. Mr. Hamond's loss will be severely felt by all interested in arboriculture.

Answers to Correspondents.

ANTS IN HOTHOUSE: *X. Y.* A strong solution of carbolic acid poured into their haunts will rid you of them; and this or boiling water poured on the woodlice suddenly when they are abroad at night will thin their numbers immensely.

BULRUSHES IN RUNNING WATER: *E. S. W.* Yes, they will grow if there be a sufficiency of mud for them to root into, not otherwise. You had better raise young plants from seed in a kind of bog-bed, such as Cranberries are grown in, and when large enough transplant into the mud of the stream, or else get roots from some source.

FLOWERS FOR TERRA-COTTA VASES: *C. Urquhart.* For winter and very early spring, Yuccas—as recurva, speciosa, and gloriosa; Euonymus japonica in green, silver, and gold variegated kinds; Conifers, as Thuias in variety; Retinosporas plumosa, filicifolia, &c.; Skimmia japonica, having pretty red berries; Berberis Hookeri, B. dulcis, B. Aquifolia; silver and gold Hollies, and many other such hardy evergreens; covering the bare soil with Sedum acre, or the golden variety, or Sedum glaucum and Saxifraga rotundifolia. Thymus lanuginosus, and the golden variety of Lemon Thyme, are pretty at the margins of big vases whose contents remain for a year undisturbed. For flowers during the winter and spring Tulips, Squills, Hyacinths, Narcissus, Triteleia uniflora, Crocus, and Snowdrops may be used. As plants for filling vases in summer there are Pelargoniums of the zonal section, both single and double forms, Heliotropes, Lantanas, Fuchsias, tuberous-rooted Begonias, Lilies, Cannas, Petunias, Hedychiums, Zinnias, Scabiouses, Roses in pots, especially the Fairy and Fallenberg, Noisettes, Aloysia citriodora, and a great number of summer creepers are available for vases in the summer and early autumn months.

GARDENERS' NOTICE TO LEAVE: *H. J.* A gardener, being usually engaged at so much per year, he is entitled to a month's notice—or money in lieu of that.

INSECTS: *M. A. B.* Your Carnations are attacked by a little two-winged fly (Phytomyza sp.) not half the size of the common house-fly, the larvæ of which feed within the leaves and stems. The leaves, which are the first attacked, should be sharply pinched in the spaces, which show the mining of the larvæ, so as to kill the latter. *W.*

INVERTED MUSHROOM: *W. P.* There is nothing very uncommon in the inverted hymenium of the Mushroom.

LISTS OF PLANTS: *Miss M. O.* will find complete lists of the late Mr. Henry's introductions in the *Proceedings of the Edinburgh Botanical Society*, and ample justice will doubtless be done them in Sir Joseph Hooker's promised biography.

MUTISIA DECURRENS: *B. B.* This is found in Downie and Laird's (Edinburgh) list of greenhouse plants.

NAMES OF FRUIT: *Capt. J. B. Tibbits. Pear:* Chaumontel.—*T. Mills.* The Apple is correctly named Scarlet Nonpareil. — *H. Crux.* Probably Wyken Pippen. — *W. L. Burton.* 3, Winter Codlin; 4, Pomme Violette; 9, Dutch Mignonne. The others are most probably local seedlings that have never been named—of no merit.—*J. Baylis.* 1, Irish Peach; 2, Duchess of Oldenberg; 3, Tower of Glamis; 4, American Mother; 5, Edmund Jupp; 6, Downton Pippin.—*W. R.* 2, Boston Russet; 20, Evagil; 14, not known.—*J. Taylor.* Your Apple is not known to us. It may probably be a seedling. It partakes greatly of the Crab.—*E. W. Garrow. Pears:* A, Autumn Colmar; B, Comte de Lamy.

NAMES OF PLANTS: *W. H. Blair.* Calvary Clover, or Medicago echinops; the other is a species of Aster not readily identified.—*Mr. M.* 1, Pinus contorta; 2, cannot determine this without cones.—*L. C.* 1, Panicum plicatum; 2, Pellæa hastata; 3, specimen insufficient; 4, Zygopetalum Mackaii.—*Wm. M.* Crassula lycopodioides and Mesembryanthemum uncinatum.—*H. J. C.* Miriophyllum spicatum. You will find all the British flowering aquatics in any British *Flora*.—*H. S.* Polygonum aviculare.—*J. G.* We do not undertake to name florists' flowers.—*H. M. Oldsworth.* Maxillaria picta.—*L. E. R.* Cyrtomium falcatum.

SEEDLING APPLES: *W. Divers.* A pretty enough fruit, but so far past its season that we cannot speak as to its quality.

TESTUDINARIA ELEPHANTIPES: *Samuel Finney.* This plant, related to the Yams, grows from the rhizome or root-stock to a height of 30—40 feet. The slender stems bear more or less heart-shaped smooth leaves, and in the axils of these short racemes of greenish-yellow flowers are produced. It is a native of the Cape of Good Hope, and may be grown in a cool greenhouse after June, but needs starting in a vinery or such-like place. It blooms in July and August.

THE LEEK ROSE SOCIETY: *A Puzzled Enquirer*, who does not send his name or address, seems more anxious to expose us to the risk of an action for libel than to uphold purity and honourable dealings at exhibitions.

WEICHSEL, &C.: *R. R. Whitehead.* Weichseln are Cherries — varieties of Cerasus vulgaris — resembling our Morello. There are numerous kinds in Germany, finding their use in distillation and in the household. The red seeds are those of the Pfaffen Kappen (Parson's Cap), Euonymus europæus, common over Southern Germany and Austria.

COMMUNICATIONS RECEIVED. — The Gardener, Almora. — R. M. C.—B. B.—G. A. P.—G. Donaldson.—W. F.—C W. G.—W. G. S.—Sander & Co.—M. Dunn.—J. Taylor.—A. O Sankey.—Garrick.—W. R.—Carter, Page & Co.—Walt. Charman.—R. D.—A. D.—A. G.—M. Tite.—B. Plowright.—J. T. R.—T. W.—G. A. Purdie.—J. McI.—A. B.—Le Directeur Compagnie Continentale.—S. J.—W. Jamieson.—J. Godseff —C. Y. M.—J. J. B.—F. Calver.—J. S.—J. F.—W. Gumbleton.

Markets.

COVENT GARDEN, November 20.

MARKET very quiet; supplies still in excess of demand. Nova Scotian Apples in large consignments at reduced values. Kent Cobs no alteration: Pines short, and in better demand. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6–	4 0	Melons, each	1 6–	3 0
Cobs, per 100 lb.	60 0–	62 6	Pine-apples, Eng., lb.	4 0–	6 0
Grapes, per lb.	0 6–	3 0	Pears, French, doz.	1 6–	3 6
Lemons, per case	21 0–	..			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	.. 4 0–	6 0	Lettuces, Cabbage, per dozen	.. 1 6–	..
Beans, French, lb.	0 6–	..	— Cos, each	.. 0 2–	..
Beet, per doz.	.. 1 0–	..	Mint, green, bunch	.. 0 9–	..
Cabbages, per doz.	.. 1 6–	2 0	Mushrooms, p. baskt.	1 0–	2 0
Carrots, per bun.	.. 0 6–	..	Onions, per bushel	.. 4 0–	..
Cauliflowers, English, dozen	.. 1 0–	2 6	— Spring, per bun.	0 6–	..
Celeriac, per root	.. 0 4–	..	Parsley, per bunch	.. 0 4–	..
Celery, per bundle	.. 1 6–	2 6	Radishes, per doz.	.. 1 6–	..
Cucumbers, each	.. 0 6–	1 0	Salsify, per bund.	.. 1 0–	..
Endive, English, per dozen	.. 1 0–	..	Seakale, per punnet	1 6–	2 0
Garlic, per lb.	.. 0 6–	..	Small salading, per punnet	.. 0 4–	..
Herbs, per bunch	.. 0 2–	0 4	Spinach, per bushel	2 0–	..
Horse Radish, bun.	3 0–	4 0	Tomatos, per lb.	.. 0 6–	1 0
			Turnips, bun.	.. 0 5–	..

POTATOS.—Magnum Bonums, 45s to 70s; Regents, 70s. to 90s. Champions, 45s to 60s. per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0–	4 0	Marguerites, 12 bun.	3 0–	6 0
Arum Lilies, 12 blms.	4 0–	6 0	Mignonette, 12 bun.	1 0–	4 0
Azalea, 12 sprays	.. 1 0–	1 6	Pelargoniums, per 12 sprays	.. 0 9–	1 6
Bouvardias, per bun.	0 9–	1 0	— scarlet, 12 sprays	0 4–	0 6
Camellias, per doz.	.. 2 0–	6 0	Primula, double, bun.	1 0–	1 6
Carnations, 12 blms.	1 0–	2 0	Roses (indoor), doz.	2 0–	6 0
Chrysanth., 12 bun.	2 0–	6 0	— (outdoor), 12 bun.	6 0–	12 0
— large, 12 blooms	0 6–	2 0	Stephanotis, 12 spr.	4 0–	8 0
Cyclamen, 12 blooms	0 3–	0 6	Tropæolum, 12 bun.	1 0–	2 0
Dahlias, 12 bunches	2 0–	4 0	Tuberoses, per doz.	1 0–	1 6
Eucharis, per doz.	.. 3 0–	6 0	Violets, 12 bun.	.. 1 0–	1 6
Gardenias, 12 blms.	4 0–	8 0	— French, bunch	1 6–	2 0
Gladiolus, various, 12 spikes	.. 1 0–	2 0	— Parme, French, per bunch	.. 4 0–	5 6
Heliotropes, 12 sp.	0 6–	1 0	Wallflower, 12 bun.	4 0–	6 0
Lapageria, white, 12 blooms	.. 2 0–	3 0	White Jasmine, per bunch	.. 0 6–	1 0
— red, 12 blooms	.. 1 0–	2 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–24	0	Ferns, in variety, per dozen	.. 4 0–18	0
Arbor-vitæ (golden), per dozen	.. 6 0–18	0	Ficus elastica, each	1 6– 7	0
— (common), dozen	6 0–12	0	Foliage Plants, various, each	.. 2 0–10	0
Begonias, per doz.	4 0–12	0	Marguerite Daisy, per dozen	.. 8 0–15	0
Bouvardia, dozen	9 0–18	0	Myrtles, per doz.	6 0–12	0
Chrysanth., dozen	4 0– 9	0	Palms in variety, each	.. 2 6–21	0
Cyperus, per dozen	4 0–12	0	Pelargoniums, scarlet, per dozen	.. 4 0– 6	0
Dracæna terminalis, per dozen	..30 0–60	0	Primula sinensis, per dozen	.. 4 0– 6	0
— viridis, per doz.	12 0–24	0	Solanums, dozen	9 0–12	0
Erica, various, doz.	9 0–18	0			
Euonymus, various, per dozen	.. 6 0–18	0			
Evergreens, in var., per dozen	.. 6 0–24	0			

SEEDS.

LONDON: *Nov.* 19.—To-day's market, as might have been expected, was very thinly attended, and the business doing was small. With regard to Clover seed generally, the position is without change; buyers seem determined to hold aloof, whilst for inferior English samples the tendency of values is downwards. American Clover seed is quite neglected on this side. Hemp seed is cheaper. For Canary seed the demand is very meagre. Rather more money is asked for blue Peas, and the offerings show a falling off. Feeding Linseed keeps steady. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

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HILL AND SMITH'S BLACK VARNISH,
for Preserving Ironwork, Wood, or Stone.
(Registered Trade Mark.)



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Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

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"*Piercefield Park, June* 21, 1876.—Sirs,—I have this day orwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we ever had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX."

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

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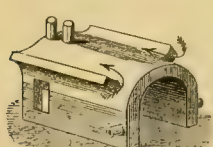
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	Long.	Price of Boiler and Heat of 4-in. Pipe.	Fittings.
A,	19 in.	150 feet	£5 10 0
B,	22 in.	300 ,,	6 15 0
C,	24 in.	400 ,,	8 5 0
D,	26 in.	500 ,,	9 10 0
E,	28 in.	600 ,,	10 15 0
F,	32 in.	700 ,,	12 5 0
G,	36 in.	850 ,,	13 15 0
H,	42 in.	1000 ,,	15 10 0
I,	48 in.	1250 ,,	17 5 0
J,	54 in.	1600 ,,	19 10 0
K,	60 in	2000 ,,	22 10 0

* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c

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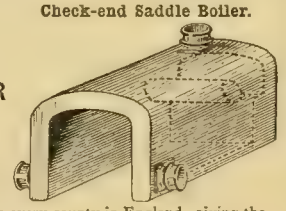
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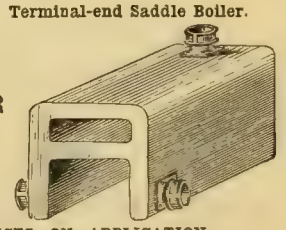
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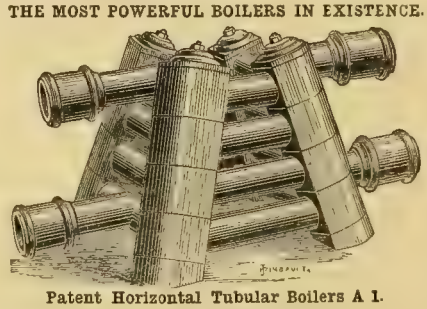
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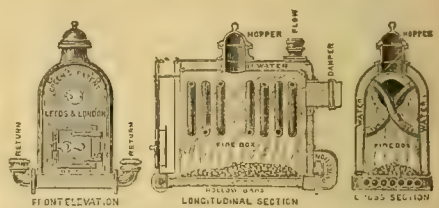
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"HEATING APPARATUS.—A great number of boilers, valves, &c, were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

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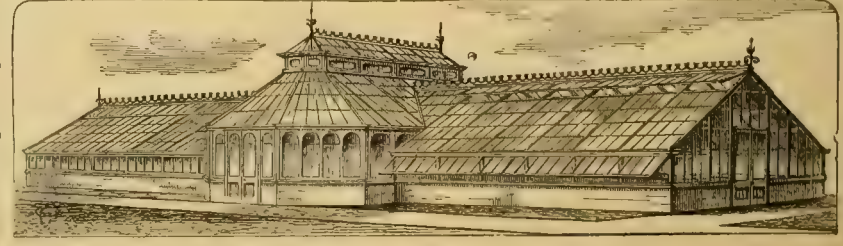
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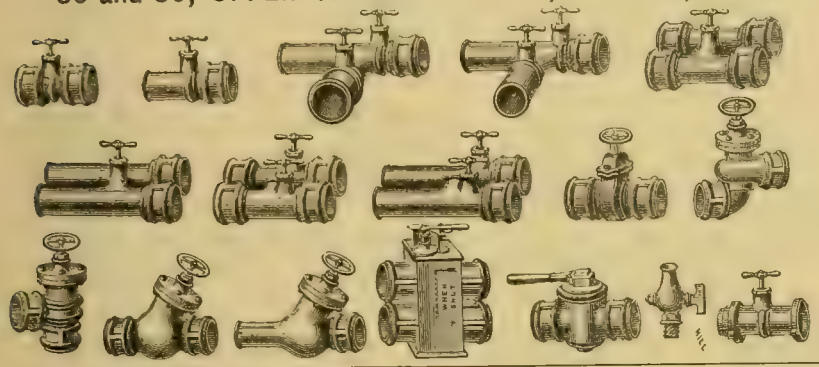
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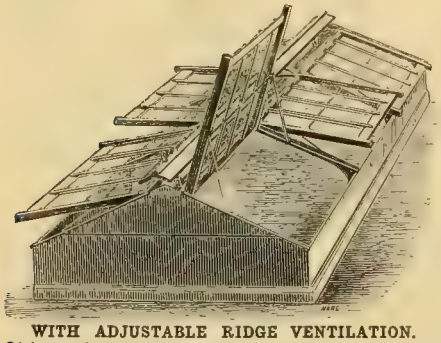
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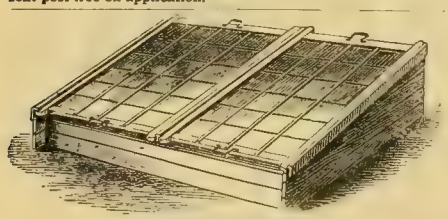
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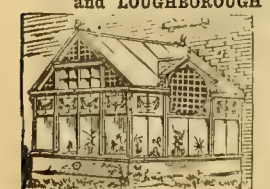
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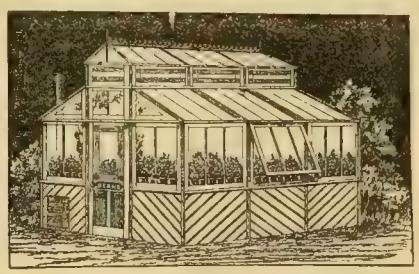
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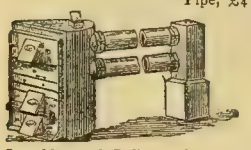
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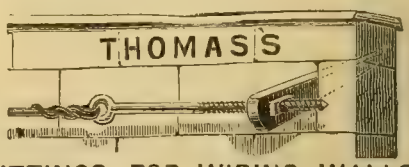
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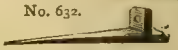
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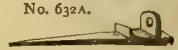
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 22, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 570.—Vol. XXII. {New Series.} SATURDAY, NOVEMBER 29, 1884. {Registered at the General Post-office as a Newspaper.} Price 6d. {Post-free, 6½d.}

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Monday Next.—(Sale No. 6784.)
BULBS FROM HOLLAND, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 1, at half-past 12 o'Clock precisely, first-class Double and Single HYACINTHS, TULIPS, CROCUSES, NARCISSUS, GLADIOLI, LILIES, and other DUTCH BULBS; LILY of the VALLEY, SPIRÆA JAPONICA, and a consignment of PLANTS from Germany.
On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6786.)
ROSES, FRUIT TREES, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 3, at half-past 12 o'Clock precisely, STANDARD and DWARF ROSES of sorts, PYRAMID and DWARF-TRAINED FRUIT TREES, ; few specimen and other GREENHOUSE PLANTS, HARDY HERBACEOUS BORDER PLANTS, &c., from English and French Nurseries: also several hundred lots of first-class DUTCH BULBS, LILY of the VALLEY, in clumps and crowns, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6787.)
3000 splendid Bulbs of LILIUM AURATUM, from Japan.
5000 extra fine TUBEROSES, from South Africa.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 4.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6787.)
IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Messrs. Shuttleworth, Carder & Co., on THURSDAY NEXT, December 4, at half-past 12 o'Clock precisely, a fine importation of LÆLIA AUTUMNALIS, received as L. atrorubens. EPIDENDRUM NEMORALE, CATTLEYA TRIANÆ, Papayan var., MASDEVALLIA HARRYANA, ODONTOGLOSSUM CRISPUM ALEXANDRÆ, the finest type; and established MASDEVALLIAS, comprising the following varieties:—M. RACEMOSA CROSSI, M. MACRURA, M. CUCULLATA, M. PACHYANTHA, M. SCHLIMII, M. BELLA, M. CHIMÆRA, &c.
On view morning of Sale, and Catalogues had.

Monday, Thursday, and Saturday Next.
DUTCH BULBS.—GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT, December 1, 3, and 6, at half-past 11 o'Clock precisely each day, extensive consignments of DUTCH BULBS, comprising thousands of the best named HYACINTHS, TULIPS, CROCUS, NARCISSUS, &c., in lots to suit large and small Buyers.
On view mornings of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Important Sale of about 300 Choice Double
CAMELLIAS and AZALEA INDICA, compact plants, 1 to 2 feet, beautifully set with bloom-buds; 400 fine Standard and other ROSES, selected FRUIT TREES, Hardy CONIFERÆ, SHRUBS, AMERICAN PLANTS, with some ERICAS, PRIMULAS, LILIUM AURATUM, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, December 2, at 12 o'Clock precisely.
On view the morning of Sale. Catalogues had at Rooms, and of the Auctioneers, 67, Cheapside, E.C.

Tuesday Next.
IMPORTANT SALE of Established PHALÆNOPSIS AMABILIS and SCHILLERIANA,
The Property of C. M. Satow, Esq., of Clapton.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 2, about 50 PHALÆNOPSIS AMABILIS and 50 P. SCHILLERIANA. The plants are in splendid health, and comprise specimen pieces with 4 to 6 leaves, some measuring 10 to 12 inches long by 4 to 4½ inches wide. The varieties are specially fine, having been selected from time to time when in flower from Messrs. Low & Co.'s immense stock. Nearly all the plants are showing flower.

Tuesday Next.
To Orchid Fanciers and Cut Flower Growers.
UNRESERVED SALE of a Collection of ESTABLISHED ORCHIDS grown specially for Cut Flowers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 2, at half-past 12 o'Clock precisely, a Collection of ESTABLISHED ORCHIDS, comprising altogether about 1500 plants, including 100 Phalænopsis, 350 Odontoglossum Alexandræ, 60 Cœlogyne cristata, large quantities of Dendrobes and Odontoglots, in variety; Sophronites grandiflora, Lælias, Cattleyas, Cymbidium eburneum, Burlingtonias, Pilumna fragrans, &c.
On view morning of Sale, and Catalogues had.

Wednesday Next.—15,000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will include in their Sale at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 3, 15,000 Bulbs of LILIUM AURATUM, just arrived from Japan in splendid condition.
On view morning of Sale, and Catalogues had.

Wednesday Next.
LILIES, ROSES, and PLANTS.—15,000 LILIUM AURATUM, just received from Japan in unusually fine condition; a collection of Hardy English-grown LILIES, including extra large roots of the best varieties in cultivation; 300 Standard and other ROSES, from an English Nursery; PALMS, FERNS, and other DECORATIVE PLANTS; and an assortment of Hardy BULBS and PLANTS, LILY of the VALLEY, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 3, at half-past 12 o'Clock precisely.
On view morning of Sale, and Catalogues had.

New Hampton, Middlesex.
Two days' Sale of unusually well-grown NURSERY STOCK, carefully prepared for removal, and offering to intending purchasers a good opportunity of securing plants for immediate effect.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Lay to SELL by AUCTION, on the Premises, The Tangley Park Nursery, ten minutes' walk from the Hampton Railway Station, on WEDNESDAY and THURSDAY NEXT, December 3 and 4, at 12 o'Clock precisely each day, to clear the ground, 1500 LAURELS, 3 to 5 feet, fine plants; 1000 AUCUBAS, 1 to 4 feet; 1000 RHODODENDRONS, 1 to 5 feet; 12,000 BOX, 1 to 3 feet; 700 HOLLIES, 6 to 14 feet; an assortment of Specimen EVERGREENS and CONIFERS, DECIDUOUS SHRUBS, FRUIT TREES, 1300 LILACS, 4 to 7 feet; and other NURSERY STOCK.
May now be viewed. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.
CATTLEYA CHOCOENSIS, fine forms.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 5, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA CHOCOENSIS of the finest varieties. Some are pure white, others have the colour far extended into the throat of the lip, and all have been selected as specially fine varieties. Also a fine lot of ODONTOGLOSSUM ROEZLII, ONCIDIUM FUSCATUM, O. KRAMERIANUM, PESCATOREA WALLISII, ODONTOGLOSSUM ALEXANDRÆ, finest varieties and grand masses, the new ONCIDIUM LOXENSE, O. MACKANTHUM, ODONTOGLOSSUM EDWARDI, CATTLEYA IMPERIALIS, C. SPECIOSISSIMA, ONCIDIUM MARSHALLIANUM, LÆLIA PUMILA, ONCIDIUM CONCOLOR, &c.
On view morning of Sale, and Catalogues had.

The Fallowfield Collection of Orchids.
ALTERATION of DATE of SALE from DECEMBER 2 to DECEMBER 9.

MESSRS. PROTHEROE AND MORRIS beg to announce that they will SELL the remaining portion of the above well known COLLECTION of ESTABLISHED ORCHIDS, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, December 9, at half-past 12 o'Clock precisely.
Further particulars will appear next week.

Rare Offer—To Small Capitalists.

TO BE DISPOSED OF, a small FLORIST'S STOCK in the south of England, consisting of Tomatos (bearing), Cucumbers, Mushrooms, Strawberries, Rhubarb, Carnations, Roses, Bouvardias, &c. Reason for selling, owner wishes to go abroad. Price £100.
For particulars address H. E, Messrs. Barr & Son, Seedsmen, King Street, Covent Garden, London, W.C.

£15 will Purchase

THE LEASE, STOCK, and GOODWILL of a range of GLASSHOUSES and VINERIES, in bearing condition. Vendor will contract to take all Stock grown on the Premises. Particulars,
S., 55, Wellington Road, Stoke Newington, London, E.

JOHN KENNARDS, HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite.
Swan Place, Old Kent Road, S.E. Established 1854.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS,
43, Commercial Street, E.

GOOSEBERRY TREES and Carter's Prolific RASPBERRY.—Strong 2 and 3-yr. old Lancashire Lads amd Raspberry Canes for Sale.—Apply to
W. WARREN, Worton Gardens, Isleworth, W.

SEAKALE for Forcing—excellent selected large roots. Price on application. Sample forwarded if required. All ordens prepaid.
ALFRED ATWOOD, Market Gardener, 50, Shillington Street, Battersea, S.W.

Grape Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

WHITE CHILIAN RUNNER, "INCA."—This new Bean is justly regarded as one of the best ever cultivated. It matures early, is very prolific, and grows well in this country. Its pods when cooked are very green, tender, and specially delicate in flavour; while the seeds in a ripe state constitute the finest and most delicious of Haricots.
Price, in Quarter-pint Packets, sealed, 1s. 6d., post-free.
J. BLACKMORE, Westgate Buildings, Abergavenny.

Prices of Alpine Plants.

CHRISTOF STEINPOCK, of Altlengbach, Lower Austria, offers:—HELLEBORUS NIGER (Christmas Roses), splendid strong roots, at 26s. per 1000; CYCLAMEN EUROPÆUM, from 12s. to 24s. per 1000; VERATRUM ALBUM, 45s. per 1000; NARCISSUS POETICUS, 13s. per 1000; LEUCOJUM VERNUM, 13s. per 1000; 20 assorted FERNS, in a collection of the most saleable sorts, highly ornamental, 80s. per 1000.

PAMPAS PLUMES.—We have just received a very large consignment of the above, the finest ever imported, and we are in a position to offer them at very low prices. Prices on application.
J. SLAYMAKER, Centre Avenue, Covent Garden Market, W.C.

Forcing Asparagus.

R. AND G. NEAL beg to offer the above by the hundred or thousand (own growth, and transplanted last spring). Samples with Price on application. Also beg to call the attention of Nurserymen, Builders, and others to their exceptionally fine stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS.
The Nurseries, Wandsworth Common, S.W.

EAST LOTHIAN STOCKS.

THOMAS METHVEN AND SONS offer their choice strain of the above Intermediate Stocks in five colours, Scarlet, Purple, White, Crimson, and Snow-white, wall-leaved, in packets, 1s., 2s. 6d. and 5s. each colour. Price to the Trade on application.
15, Princes Street, Edinburgh.

To the Trade.
SEED POTATOS.

H. AND F. SHARPE'S Wholesale Priced LIST of SEED POTATOS is now ready, and can be had on application. It comprises the best kinds in cultivation, and the prices are very reasonable.
Seed Growing Establishment, Wisbech.

W. H. ROGERS, Red Lodge Nursery, Southampton, offers the following, very fine: prices on application:—
Standard named RHODODENRONS, good heads.
Dwarf, do. do., all well budded.
KALMIA LATIFOLIA, 1½ foot.
AZALEA PONTICA, Ghent and amœna.
BERBERIS DARWINII, nice bushy plants, about 1 feet.
SKIMMIA JAPONICA, 6 to 9 inches.
COTONEASTER SIMONSII, 1 to 3 feet.
PERNETTYA MUCRONATA, nice strong plants.
CUPRESSUS MACROCARPA, 3 feet, transplanted last spring.
PINUS INSIGNIS, 2 ft, transplanted last spring.
MENZIESIA POLIFOLIA RUBRA and ALBA.
COB NUTS, wonderful prolific bearers.
And every other description of well grown Nursery Stock, extending over sixty acres.

Aquatics.

J. V. REES (late Robert Parker) has the finest Collection of above in the country, and can supply Hardy Herbaceous and Alpine Plants, in 100 showy varieties, from 50s.
New CATALOGUE now ready.
Exotic Nursery, Tooting, Surrey, S.W.

For Intermixing with Other Dwarf Shrubs, for forming Beds by themselves, for House Decoration, for Open Situations in the Rockery, &c., the New Hardy Free-fruiting Varieties of
PERNETTYA MUCRONATA, with berries of various colours, raised by L. T. Davis, Ogle's Grove Nursery, Hillsborough, Co. Down, are unequalled for Winter effect. Descriptive LIST will be sent on application.
Carriage free to Belfast, and extra plants for long carriage.

To the Trade.
HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to give special quotations of all the principal varieties of VEGETABLE and FIELD SEEDS they have grown and are offering this season. Their stocks are very pure, quality excellent, and prices very low.
Seed Growing Establishment, Wisbech.

SPECIAL OFFER.
ROSES, Standard, Half-Standard, Gloire de Dijon (dwarfs), Général Jacqueminot (dwarfs).
LARCH, 1 to 5 feet.
SPANISH, 2 to 6 feet,
ALDER, 2 to 4 feet.
HAZEL, 2 to 4 feet.
FIR, Scotch, 1 foot.
MANETTI STOCKS.
WOOD'S GARLAND STOCKS.
Prices on application.
WILLIAM FLETCHER, Mersham Nurseries, Chertsey.

ANDRÉ LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS. STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London, *viâ* Honfleur, about 2s. 6d. per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1878.
Orders must be addressed to Messrs. WATSON AND SCULL, 92, Lower Thames Street, London, E.C.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

"GLOIRE DE NANCY" CARNATION, the best white Clove in cultivation, 60s. per 100, 8s. per dozen.
MRS. SINKINS, the best white Clove Pink, 30s. per 100, 4s. per dozen.
OLD CRIMSON CLOVE, 30s. per 100, 4s. per dozen.
All strong plants, established in pots.
POUNCE'S Nursery, Hendon, near London, N.W.

Special Offer to the Trade.

FREESIA REFRACTA ALBA.—50,000 (fifty thousand) extra strong flowering bulbs of the above offered for sale. General LIST of Cape Bulbs now ready.
ROBT. TEMPLEMAN, Colonial Seedsman and Florist, 12, Castle Street, Cape Town, Cape of Good Hope.

FOR SALE, AUCUBAS, bushy plants, 2 feet, 14s. 3d. per dozen; OVALIFOLIUM PRIVET, 4 to 5 feet, 12s. per 100; LARCH FIRS, 3 to 5 feet, 26s. per 1000; QUICK, 13s. per 1000; Portugal LAURELS, 2 feet, 35s. per 100; Common LAURELS, bushy, 22s. per 100; Variegated HOLLIES, 1½ to 2 feet, 15s. per dozen; YEWS, bushy, 3 to 4 feet, 120s. per 100; also a quantity of good Green HOLLIES, various heights.
JOSEPH SPOONER, Nursery, Goldworth, Woking.

Hyacinthus candicans.

BUDDENBORG BROS., BULB GROWERS, Hillegom, near Haarlem, Holland, offer the above, splendid white flowering bulb, at 50s. per 1000.

LILIUM AURATUM.—Our first importation has arrived in Bulbs of magnificent size and quality, superior even to most home-grown bulbs. For prices see our LIST, No. 71, p. 1. Also from Japan, in extraordinary size and splendid condition, LILIUM HANSONI, CONCOLOR, CORIDION, EXIMIUM, BATEMANNIA, KRAMERI, CORDIFOLIUM, LONGIFLORUM, fol. alb. marg. Send also for our Special Offers of GLADIOLI, IRIS, and NARCISSI. A consignment of New Zealand FILMY FERNS just arrived.
NEW PLANT AND BULB COMPANY, Colchester.

Orchids.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have at present a grand stock of DENDROBIUMS, in variety, and other East Indian ORCHIDS, also CATTLEYAS and other valuable ORCHIDS from South America, and they are constantly receiving fresh importations. Price LISTS and full particulars on application.
The MANAGER, The Vineyard and Nurseries, Garston, Liverpool.

SPECIAL CHEAP OFFER.—ALDER, ASH, BIRCH, ELM, Austrian PINE, MAPLE, OAK (English), PRIVET ovalifolia, PRIVET Evergreen. All the above good stout stuff, from 2 to 4 feet. POPLAR in variety, from 4 to 10 feet; THORN QUICK, 3, 4, and 5 feet; YEWS, extra strong; SYCAMORES, 3 to 6 feet; BERBERIS AQUIFOLIA, 1½ to 2 feet; CUPRESSUS, various, 2 to 10 feet; Golden ELDER, Ribes CURRANTS, Sweet BRIERS, HOLLIES in variety, from 1 to 9 feet; splendid stuff, all recently transplanted. IVIES in variety. LAURELS in sorts, 2 to 4 feet; LILACS, 3 to 5 feet; RETINOSPORAS, in sorts, 1 to 6 feet; English YEWS, 2 to 4 feet, fine stuff; AZALEA PONTICA, 1 to 3 feet; RHODODENDRONS, for covert and other planting, from 1 inch to 3 feet; several hundred thousand choice named RHODODENDRONS, in good sized plants; Cunningham's White CAUCASICUM PICTUM JACKSONIANA. &c. Double Yellow and White PRIMROSES.
For price and particulars apply to
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent.

Forest Trees.

IRELAND AND THOMSON have an extensive and healthy stock of seedling and transplanted Forest Trees, including Ash, Alder, Birch, Elm, Austrian Pine, rom 6 in. to 2½ ft.; Scotch Fir, Larch, Spruce, Black Spruce, Laricio, Beech, Thorns, Maple, Oak, Poplars, Thorn Quick, Chestnuts, Hazel, &c. Special offers on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

RASPBERRY CANES.—An immense quantity of the choicest Carters' Prolific and Fastolf for disposal.
The Advertiser being the most extensive cultivator of Raspberries in England, special care will be taken to select Canes most suitable for a vigorous growth and an early fruiting. Lowest cash terms on application to
R. BATH, Crayford, Kent.

Roses, Dwarf and Standard.

RAHDER AND POST can still supply many thousands, very strong, of the above, on Seedling Brier.
STANDARD ROSES, in 300 sorts of Tea, Noisette, Bourbon, and Hybrid Remontants—8000 pieces, first quality, at £60 per 1000.

DWARF ROSES—Teas.

Alba rosea, 600	Maréchal Niel, 1000
Adrienne Christophle, 200	Marie Van Houtte, 400
Belle Lyonnaise, 400	Perle de Lyon, 250
Duchesse Mathilde, 400	Perle des Jardins, 700
Madame Berard, 300	Gloire de Dijon, 1200
Mdlle. Francesca Truger Niphetos, 400	Beauté de l'Europe, 200
Madame Falcot, 200	Etoile de Lyon, 100

1000 pieces, £21; 100 pieces, £2 10s.

Hybrid Remontant and Bourbon.

Souvenir de la Malmaison, 1000	Prince Camille de Rohan
La France, 1000	Madame Nomann, 300
Général Jacqueminot, 1000	Baronne de Rothschild, 200
Mrs. Bosanquet, 500	Duchess of Teck, 200
Captain Christy, 600	Cheshunt Hybrid, 150
Paul Néron, 500	Magna Charta, 100
Marie Baumann, 600	Dr. Andry, 400

1000 pieces, £15; 100 pieces, £1 13s.
Nursery—The Lelie, Hoogeveen, Netherlands.

CHRYSANTHEMUMS. — Speciality.— 420 varieties, guaranteed true to name. One of the largest and cheapest Collections in the Trade Plants, purchaser's selection, 2s. 6d. per dozen, 16s. per 100; cuttings, 1s. 6d. per dozen, 10s. per 100; W. E.'s selection, cheaper. For the new English and Continental varieties see CATALOGUE, with Essay on Cultivation, one stamp. Inspection invited.
W. ETHERINGTON, The Manor House, Swanscombe, Kent.

RASPBERRY CANES.—A large number of the celebrated Carter's Prolific (see *Mark Lane Express*, August 1, 1884), to dispose of; also Naples Black CURRANTS, two and three years old, and Dutch Red.
Apply to
A. AND E. BATH, Colgates Farm, Sevenoaks, Kent.

Grape Vines--Grape Vines.

IRELAND AND THOMSON have a large and thoroughly ripened stock of the above in Planting and Fruiting Canes. CATALOGUES on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

To the Trade Only.

FERNS — FERNS — FERNS.
Adiantum cuneatum, A. trapeziforme, A. gracillimum, Lomaria gibba, Lastrea aristata variegata, Pteris serrulata cristata Cowani, P. serrulata: nice plants in 60's, 20s. per 100.
Adiantum cuneatum, A. gracillimum, A. trapeziforme, in 4 and 4½ inch pots, 40s. to 50s. per 100, according to size; Adiantum Pacotti, in 60's, 30s. per 100; ditto, in 4 and 4½ inch pots, 50s. per 100.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool

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JOHN LAING & CO.
Of unequalled quality.
Free by Parcels Post or by Rail.
COLLECTIONS to suit all purchasers of HYACINTHS, TULIPS, NARCISSUS, CROCUS, &c, 10/6, 15/-, 21/-, 25/-, 30/-, and 42/-.
Catalogue of Roses, Fruit Trees, &c., ready.
Bulb Merchants, Forest Hill, S.E.

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VICTOR will produce new Potatos all the year round.
8d. per Pound (7 lb. Carriage Paid).
Victor is the perfection of Potatos for frame cultivation.
New Potatos, fit for use, have been produced from it in
Six Weeks.

CHARLES SHARPE & CO.,
SLEAFORD.

FRANCIS & ARTHUR DICKSON & SONS.

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FOREST TREES.
Many Millions.
Stout, Hardy, Famously Rooted.

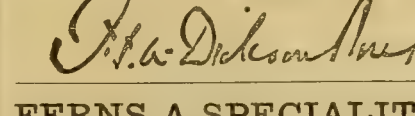
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EVERGREENS and ROSES
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Hundreds of Thousands of
FERNS AND SELAGINELLAS,
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ABRIDGED CATALOGUE
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LARGE CATALOGUE (Price 1s.), containing 75 Illustrations of Ferns and Selaginellas, valuable "Hints on Fern Culture," and other useful and interesting information.

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FERN NURSERY, SALE, MANCHESTER.

Laing's Rose Trees.

JOHN LAING & CO.
Roses for Removal in November.

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Standards, choicest and best sorts ..	18s. and 21s.
Half-Standards ,, ,, ,, ..	15s. ,, 18s.
Dwarfs ,, ,, ,, ..	9s. ,, 12s.

Our selection of above Perpetuals.
Vigorous growth, well-rooted, unequalled quality.
Rose Growers, Forest Hill, S.E.

WM. CLIBRAN & SON'S

New Catalogue for Autumn, 1884,

Of the finest Bulbs, Roses, Fruit Trees, Herbaceous Plants, Stove and Greenhouse Plants, Trees, and Shrubs.

BULBS for INDOORS.

HYACINTHS, choice quality, 6s. per dozen.
TULIPS, the best for forcing, 1s. and 1s. 6d. per dozen, 7s. to 10s. per 100.
POLYANTHUS NARCISSUS, to name, 1s. 6d. per dozen.
SPIRÆAS, DIELYTRAS, DEUTZIAS, LILY of the VALLEY, MISCELLANEOUS BULBS in great variety, very moderate prices, See CATALOGUE.

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CHRYSANTHEMUMS, 6 and 7 inch pots, to bloom this season, 9s. and 12s. per dozen.
PRIMULAS and CINERARIAS, 6s. per dozen.
CYCLAMEN, BOUVARDIAS, SOLANUMS, TREE CARNATIONS, 12s. and 18s. per dozen.
ERICAS, EPACRIS, AZALEAS (Indian, Ghent, or Mollis), ROSES, in pots, for forcing, 18s. and 24s. per dozen.
SOFT and HARD WOODED PLANTS, in large or small quantities, at most moderate prices.
CALCEOLARIAS, HERBACEOUS, a splendid strain, richly spotted, large flowers, 1s. 6d. per dozen, 10s. per 100, from stores. In small pots, 3s. per dozen, 20s. per 100.

BULBS and PLANTS for the Garden.

HYACINTHS, border, separate colours, 2s. 6d. per dozen, 16s. per 100.
TULIPS, double or single, 9d. and 1s. per dozen, 5s. and 6s. per 100.
CROCUS, SNOWDROPS, 1s. 6d. to 2s. 6d. per 100.
NARCISSUS, in 35 of the finest and most distinct sorts, as per CATALOGUE.
,, ordinary varieties, 3s. 6d. to 5s. per 100.
WALLFLOWERS, red or yellow, SWEET WILLIAMS, CANTERBURY BELLS, SILENE COMPACTA, POLYANTHUS, PRIMROSES, in great variety of colours; ARABIS ALPINA, AUBRIETIAS, ALYSSUM SAXATILE, in large good plants, 1s. per dozen, 7s. per 100; or in small plants drawn from seed-beds, 1s. per 100.
DAISIES, red, white or rose, 9d. per dozen, 4s. per 100.
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Extract from the "Gardeners' Chronicle," March 1, 1884, p. 280.

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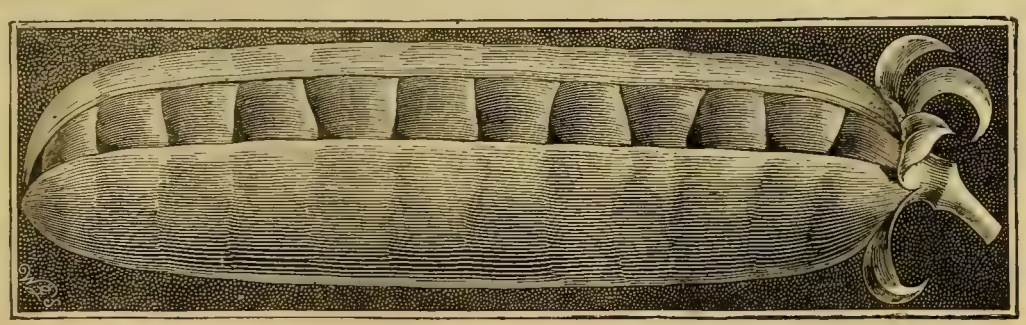
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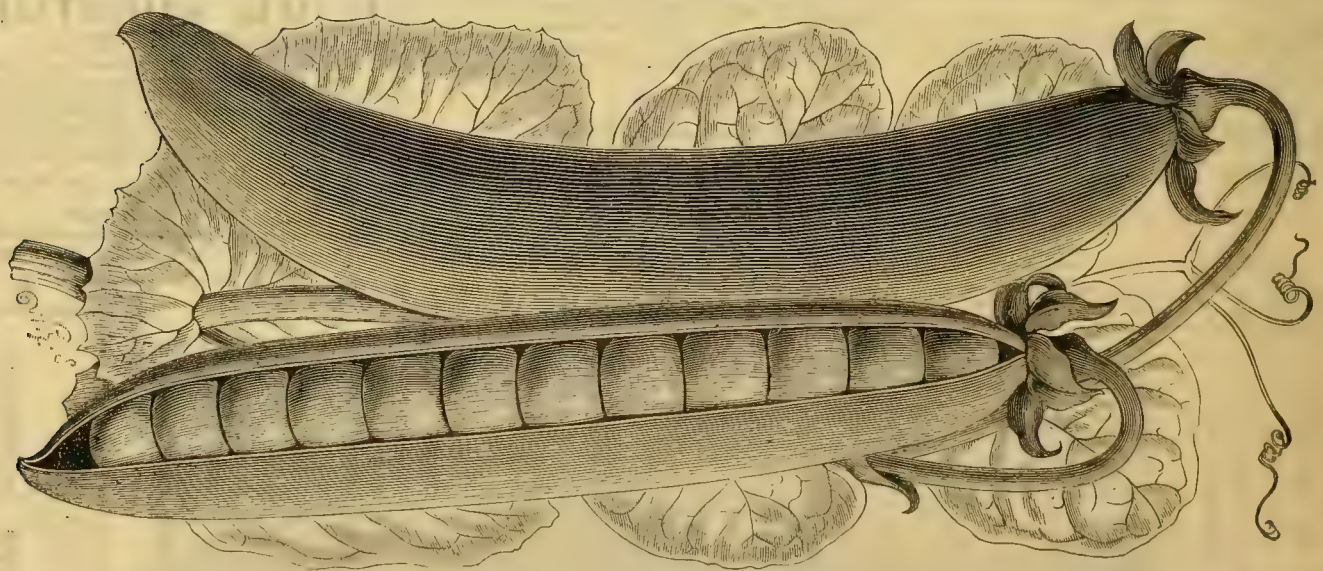
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 29, 1884.

DOWNTON CASTLE.

THIRTY-FIVE years ago the Castle was the residence of the famous Thomas Andrew Knight, President of the Horticultural Society, and the author of the *Pomona of Herefordshire*. The prospect of a day or two's trout fishing in a tributary of the Severn induced me to make a short excursion to the village of Leintwardine, a few miles distant from Craven Arms Station. My purpose, however, was to take a leisurely stroll through the "walks," as they are called, on the margin of the river Teme, which runs through the estate. The village of Leintwardine is picturesque and pleasant enough to induce one to take a walk through it at the close of the day. The little hotel, so pleasantly situated close to the river, allows from its bay window a glimpse of the green, where the lads of the village are amusing themselves and others with various rustic games. A glazed door allows a peep at the five-arched stone bridge that spans the river; and, as over it lies the highway to Mid-Wales, there is the usual series of pictural bits—cattle, sheep, and horses, market-carts, and the labourer who "homeward plods his weary way." On either side of the road the neat limewashed cottages vie with each other in their pretty groups of window plants. After breakfast next morning I started to Downton. There is a quaint but somewhat foolish old adage that tells us "A little learning is a dangerous thing." Now, my knowledge of botany is but "little," but in no way "dangerous." It helps, on the contrary, to enhance the pleasures of a country walk very considerably. Each step I took on that glorious early summer morning opened up new wonders and delights in hedgerow, bank, and woodland walk. The infinite variety of form and colour in plant life would to me be without this "dangerous thing" a sealed book.

At a quarter of a mile from the inn I climbed a steep bank and rested a few minutes on the springy turf. There was a scent of Honeysuckle and blossoming Bean fields in the air, and momentarily the—

"Silvery ring of the busy wing"

flits by. All around were patches of golden Gorse, and lambs threading between them nibbling the short sweet grass. Through the valley below, winding its devious way between the rich green meadows, is the silver Teme; to the left, beyond the hills of Brampton Brian, famous for its great horse fair, in front, the Hopton Titrell, 1200 feet high; to the right the Long Wynd, that breaks up into lumpy hills as it approaches Church Hutton; and beyond, rising in tumultuous grandeur, the stormy hills of Wales. It is a beautiful day, and now and then the shelter of the fresh green hedgerows is grateful. A gentle breeze wafts the flat discs of the Wych Elm across the road, and as the sunshine smites them they glitter and flash like patines of gold. But here again is the river, so calm and placid in the pools

where the grayling lies, so musical as it chatters over the green mossed boulders. But when the storm comes down over Radnor Forest yonder, with sullen roar and sound of rushing waters, it asserts its dignity as a mountain river, and sometimes, as the tourist may observe, scoops out for itself a nearer channel to the Severn. Huge banks of shingle, torn limbs of trees, and *débris* from the distant woods mark the course of the torrent, and the impatient angler looks at its turbid waters with dismay. But to-day is fine, the water slightly stained, and the "green wake" is tempting the greedy trout. But there, don't think of it further! Keeper Meredith is watching us, no doubt, from his sitting-room window, and a huge mastiff is under sufficient control to prevent the escape of a trespasser. Beyond the cottage the valley suddenly narrows, and the river winds its way beneath steep limestone cliffs. Here is the Bow Bridge, and the Castle walks begin, and cliff and woodland and water, with a great variety of picturesque timber, wild flowers, and a profusion of Ferns, afford a series of charming vignettes. In some places the branches of Beech and Elm, Oak and Ash, completely arch the river. In others the path comes apparently to an end in a dark cavernous recess. In another the path winds down to the very edge of the water, and the visitor is about to return when he discovers a moss covered doorway, concealed till now, which takes him up to the walks again. One may imagine the calm delights of the great horticulturist as he planned these walks and planted the banks with such varied and beautiful materials. The present proprietor, Mr. R. Boughton Knight, generously allows free access to the grounds on Tuesdays and Fridays. Crossing the bridge the visitor arrives at the picturesque Hay Mill, and if he will take the trouble to scramble over the huge boulders in the river bed he may have the rare opportunity of looking along the surface of a sixth of a mile of smooth water; there is a 3-feet fall here. Even in this short distance he may convince himself of the spherical surface of smooth water. Along the arching trunks and branches of the Sycamore and Ash creep Ivy and fringes of Polypody. But this mile or two of Castle walks is a magnificent natural flowery. There are huge stools of Lastrea dilatata, Athyrium Filix-fœmina, and Polystichum F.-mas; beautiful carpets of the tender green Oak Fern and the paler Beech Fern, the delicate Cystopteris fragilis, Adiantum nigrum and Trichomanes. But the shrill tweet! tweet! of the water ousel—that dainty little white-vested cockscomb—and the yet shriller cry of the kingfisher, that darts along the bosom of the river like an emerald on fire, remind us that time, too, is on the wing. Seldom have natural advantages, perhaps, been so picturesquely utilised. At last the visitor arrives at the Castle bridge, and on the hill to the right is the Castle itself—an imposing structure, restored by the present proprietor in faultless taste. The warm sandstone of the walls is clothed in places with Ivy, Wistaria, climbing Roses, and other creepers. From the terrace there is a magnificent panorama of wooded hills, and on the left, rising in a sea of verdure, the handsome tower of Ludlow Church and the venerable ruins of the Castle.

A splendid avenue of Deodar Cedars runs at right angles to the front, and on the left is a fine conservatory. To the horticulturist, however, the most interesting portion of the ground is the kitchen garden, wherein the great experimentalist spent many a happy day. It is a walled-in oblong space, intersected by a broad gravel path, along each side of which is a broad border of old-fashioned flowers. A huge old Mulberry tree stretches its gigantic arms over a length of 25 yards of the wall, and a Pear tree grafted by Mr. Knight himself with a dozen kinds of Pears, among which is the famous "Monarch" identified with his name. The glasshouses, with one or two exceptions, have made way for more modern structures, but the old curvilinear copper-ribbed Pine-stove, still heated by a flue, remains. It is used as a vinery, and carried when I was there a capital crop of Grapes. The mixed borders are still preserved, the huge clumps of purple Lupins, mountain Pæony, Triteleias, and Larkspurs, much as they were no doubt when he—the studious, kind, and genial President, whose face beams upon the visitor as he enters the museum at Kew—lingered admiringly over its treasures. *T. W., Harrow.*

New Garden Plants.

ARISÆMA FIMBRIATUM, *Mast.; sp. nov.**

Some few years since we had occasion to figure some very remarkable Himalayan species of this genus, in which the end of the spadix was prolonged into a very long thread-like appendage thrown over the leaves of the plant, or of its neighbours, and ultimately reaching the ground, and thus, it is presumed, affording ants and other insects means of access to the flowers, and consequent fertilisation. These species were grown by Mr. Elwes, and exhibited by him before the Scientific Committee. The present species (fig. 119) is of somewhat similar character, but is, we believe, new alike to gardens and to science. We met with it in the course of the autumn in the nursery of Messrs. Sander, at St. Alban's; but learn that it has since passed into the hands of Mr. W. Bull, of Chelsea. It was imported accidentally with Orchids probably from the Philippine Islands. It belongs to Engler's section, trisecta, having two-stalked leaves, each deeply divided into three ovate acute glabrous segments. The petioles are long, pale purplish-rose coloured, sprinkled with small purplish spots. The spathes are oblong-acute or acuminate, convolute at the base, brownish-purple, striped longitudinally with narrow whitish bands. The spadix is cylindrical, slender, terminating in a long whip-like extremity, much longer than the spathe. The flowers have the arrangement and structure common to the genus, the females being crowded at the base of the spadix, the males immediately above them, and these passing gradually into fleshy incurved processes, which in their turn pass gradually into long, slender, purplish threads, covering the whole of the free end of the spadix. *M. T. M.*

ERIA BIGIBBA, *n. sp.*†

This curious novelty has quite the general habit and the dimensions of Eria (Ania) bicornis and its allies. A slender rhizome, with very short internodes, bears approximate leaves, which are long, petioled, standing on a tumid cylindraceous foot, much shorter than the petiole. The blades are cuneate, oblong acute, very neatly plaited in six elevate argute ridges. The peduncle bears a raceme. Bracts shorter than stalked ovaries. Sepals and petals lanceolate, light reddish. Sepals with green median nerves. Lip whitish, with small purple dashes at the base. Column yellowish-white, purple at the base inside. Anther with two purple tumours at the top.

It was imported from Borneo by the Compagnie Continentale, &c., of Ghent (*ancien établissement* Linden). M. Lucien Linden kindly forwarded me a plant and an inflorescence, so that I give a rather full account of the plant. *H. G. Rchb. f.*

ODONTOGLOSSUM STELLIMICANS, *n. hybr. nat.*

A very fine thing, that has appeared at Mr. F. Sander's with Odontoglossum Pescatorei. It may be a mule between this and Odontoglossum triumphans or tripudians, or even Lindleyanum. Sepals and petals lanceolate, stellate, good clear yellow. The petals have a single brown line at the base; the sepals are washed with reddish-mauve outside, and have a few large dark brown-purple blotches inside. The lip has a well developed stalk. Blade pandurate, basilar lobes triangular; isthmus broad and rather long, anterior blade nearly reniform, with numerous small inconspicuous crenations on the margin, and now rather acute. Six unequal small angled calli on the front of stalk, and two greater lamellæ before those. Some small spots at the base, and a broad lobed blotch on the stalk. Column well angled in the middle, and with semi-ovate blotched wings, which are acute at the top. I have an eight-flowered inflorescence at my side. *H. G. Rchb. f.*

* *Arisæma fimbriatum*, Mast., sp. nov.—Foliis trisectis, segmentis ovatis acuminatis, nervis lateralibus arcuatis; spathis pedunculatis oblongis acutis, basi convolutis superne cucullatis bruneo-purpureis intus longitudinaliter albido-fasciatis; spadice cylindrato libero superne in appendicem longiusculum filiformem exsertum producto; floribus monoicis, femineis basin spadicis obtegentibus et intra tubum spathæ abscondit's; floribus masculis perfectis stipitulatis femineos superpositis; pollinis cellulis globosis asperulis; floribus masculis imperfectis seu neutris basi carnosulis falcatis superne filiformibus brunneis appendicem dense obtegentibus. *M. T. M.*

† *Eria bigibba*, n. sp.—Affinis Eriæ (Aniæ) bicorni; labello transverso trifido; lacinis lateralibus antrorsis a lacinia mediana semiovata obtusa obscure denticulato isthmis angustis separata; carinis ternis a basi ante apicem; lateralibus valde flexuoso plicatis; carina mediana paulis per flexuosa; antheræ tumoribus geminis obtusis. *H. G. Rchb. f.*

NOTES ON THE CULTIVATED ASTERS.—IV.

(*Continued from p.* 618.)

SUBGENUS I. EUASTER.—Bracts of the involucre dry at the base, furnished with spreading leafy tips. Stems copiously leafy and heads abundantly panicled. The largest subgenus, entirely confined to America.

Group III. VULGARES.—Pubescence of the stem and leaves neither tomentose nor viscid. Lower leaves tapering gradually into the petiole.

I proceed to describe the species of this group with middle-sized heads, five of which are at the present time in our English gardens.

13. *A. paniculatus*, Lamarck. A. salicifolius, Schdler., not Aiton. A. salignus and simplex, Willd. A. carneus, Fries.—Stems erect, sometimes 6—8 feet long, shortly pubescent upwards. Stem-leaves lanceolate or oblong-lanceolate, acuminate, sharply serrated, not all clasping at the base, the lower ones 4—5 inches long, ½—¾ inch broad in the middle. Heads middle-sized, about ¼ inch in diameter, arranged in ample deltoid panicles, with subcorymbose branches. Involucre campanulate, ¼ inch long, well imbricated, the outer bracts with large leafy lanceolate tips. Ligules about thirty, ¼ inch long. Achene pubescent; pappus fine, whitish, ⅛ inch long.

New Brunswick and Canada to Saskatchewan, Montana, and Louisiana, abundant in the Northern United States. Common in cultivation, and very variable.

14. *A. salicifolius*, Ait.. A. carneus, Torrey and Gray in part.—Differs from the last in its less serrate leaves of firmer texture, more thyrsoid or racemose panicle branches, and more imbricated involucre, with bracts of firmer texture, with shorter and more definite green leafy tips.

Canada and New England to Saskatchewan, Montana, and Texas; most abundant in the valley of the Mississippi.

15. *A. longifolius*, Lam. A. æstivus, Aiton.—Stems not more than 2—3 feet long, finely pubescent upwards. Stem-leaves lanceolate, generally entire, acuminate, moderately firm in texture, slightly clasping at the base, the lower 4—5 inches long, about ½ inch broad at the middle. Heads middle-sized, about ¼ inch diameter, arranged in a lax panicle with subcorymbose branches. Involucre campanulate, ¼ inch long, the bracts about equal in length, the outer with very large lanceolate leafy tips. Ligules about thirty, lilac, ¼ inch long. Achene finely pubescent; pappus dirty white, flexuose, ¼ inch long.

Labrador to Montana, Slave Lake, Canada, and New England. Flowers with us in September, and is quite over by the beginning of October. Differs from all the forms of the two last by its unimbricated involucre and early flowering. The plant formerly called longifolius by Dr. Gray he considers now to be a narrow-leaved form of Novi-Belgii.

16. *A. prenanthoides*, Mühlenbeck.—Stems 2—3 feet long, finely pubescent upwards. Stem-leaves oblong-spathulate, acute, sharply serrated, clasping the stem by their large cordate basal auricles, thin in texture, glabrous, the lower 4—5 inches long, 1—1½ inch broad at the middle. Heads middle-sized, about ¾ inch diameter, arranged in lax ample panicles. Involucre campanulate, ¼ inch long, well imbricated, the outer bracts with conspicuous lanceolate green leafy tips. Ligules about thirty, pale lilac, ¼—½ inch long. Achene very pubescent; pappus dirty-white, rather purple, ¼ inch long.

Moist ground, through Canada, and from New England westward to Wisconsin. A well marked species, flowering in September, with patulus and longifolius.

17. *A. patulus*, Lam. A. pallens and præcox of Willdenow. A. Cornuti, acuminatus, and abbreviatus, Nees.—Stems 2—4 feet long, finely pubescent upwards. Stem-leaves oblong-spatulate, acute, sharply serrated, not distinctly clasping at the base, thin in texture, glabrous, the lower 1 inch broad at the middle. Heads middle-sized, about ⅔ inch in diameter, arranged in a lax panicle with corymbose branches, each head distinctly peduncled. Involucre campanulate, ¼ inch long, moderately imbricated, the outer bracts with large lanceolate leafy tips. Ligules about twenty, lilac, ¼ inch long. Achene finally glabrous; pappus dirty white, flexuose, ½ inch long.

Canada and New Brunswick southward to New England. Flowers with longifolius and prenanthoides in September. It comes nearest longifolius, from which it differs by its involucre and broader serrated leaves. *J. G. Baker.*

(To be continued.)

TORREYAS.

The accompanying illustration (fig. 116) represents a fruit of what we presume is the Californian T. myristica, which fruited at Kew during the present season. Without specimens in all stages of growth it is, however, rather difficult to determine the species precisely. The fruit of the specimen before us is smaller



FIG. 116.—TORREYA MYRISTICA.

than in the Japanese T. nucifera. The leaves show, when cut across, an epiderm without any thickening cells or hypoderm, well marked palissade cells, indicating that exposure to strong light is desirable in cultivation. Scattered liber cells, some branched, occur in the cellular tissue of the leaf, with a single vascular bundle surrounded by a well marked sheath, and a large central resin-canal. The bark of the branches is of a rich cinnamon-brown colour, that of the young shoots light green, the colour of the evergreen Yew-like leaves being deep green; for the rest, the illustration tells its own tale. The Chinese T. grandis—of which we add a figure from a previous volume (fig. 117), showing the Nutmeg-like character of the seed—Messrs. Veitch say is scarcely distinguishable from T. nucifera, but seems to have shorter, more densely crowded leaves; but the size, and even the form of the leaves is very variable. A very interesting paper on the Florida species, T. taxifolia, taken from the *American Agriculturist*, is given in our columns, September 4, 1875, p. 291, by Dr. Asa Gray. A similar account of T. grandis, from the pen of Mr. Fortune, will be found in our columns in 1857, p. 789; it is of great interest, but too long for reproduction. T. myristica is fully noticed in the *Botanical Magazine*, t. 4780; and *Gardeners' Chronicle*, 1854, p. 519. Except for their interest botanically, which is singularly great, they are hardly worth cultivating here as they are apparently not adapted to our climate.

Orchid Notes and Gleanings.

Mr. Seely's Orchids, &c., Furze Down, Tooting.—Although the collection of Orchids here is not an extensive one the plants are very healthy, and well cultivated. They are used for decorating the conservatory when in bloom, and when this is taken into consideration the condition they are in at present reflects great credit on Mr. Laing, the gardener. Amongst other things we noticed a large batch of about 300 Dendrobium nobile, mostly in 6-inch pots, which have made fine strong healthy growths this season. Phalænopsis Schilleriana is also very healthy, having leaves from 14 to 15 inches long, and throwing up strong spikes; a plant of P. grandiflora had a good spike just coming into flower. There is a nice lot of Vandas, which are very healthy, though small; one, V. suavis, had a nice spike of bloom. Suspended from the roof in the Vanda-house are some good baskets of Nepenthes Rafflesiana. Amongst Dendrobiums we noticed the following:—D. Parishii, which had very large growths; D. primulinum giganteum, and D. formosum giganteum, all looking very well. Odontoglossums thrive well here, and are just now throwing up some fine strong flower-spikes; O. Alexandræ, Pescatorei, and cirrosum are the varieties principally grown, the latter being grown in a temperature 5° higher than the former, which seems to suit it well. Other things than Orchids succeed well here. We noticed a nice batch of Anthurium Scherzerianum and A. maximum, also a nice clean lot of small stuff for table decoration. The Camellias, too, which have a house devoted to them, are well set with bud, and look clean and healthy.

The Large New Orchid-houses at Messrs. Veitch's.—When in the spring of this year Messrs. Veitch were filling their new house (measuring 130 feet in length, 25 feet in width, and 14 feet in height) with Cattleyas, some were of opinion that the plants would not do well in such a very large structure, and that the excellent culture of these plants, for which the King's Road firm was noted, would not be maintained in such a roomy building. Time has proved otherwise, for never has the collection of Cattleyas and Lælias been in better condition than at present, and never, it is stated, have the plants made such short stout growths as they have in the new house this year. There is no doubt that a badly constructed large house is a bad one for plants, but one so perfectly ventilated and heated as that at Chelsea simply converts the whole of its space into another and more genial clime, without the quality of its air being lowered by the necessary heating. Sixteen rows of 4-inch hot-water pipes run the whole length of the house, and thus a gentle even temperature can be maintained even in the coldest weather, without that driving which is necessary where there are fewer of them, and consequently sudden rises and falls in the temperature, and all the evils entailed on the plants by such are impossible. Gratifying to all lovers of healthy vegetation and showy flowers, but doubly pleasant to the Orchid grower, is the view of the seemingly countless specimens of Cattleyas and Lælias in Messrs. Veitch's new house at the present time. Numbers of robust plants of all the rare and good kinds are there, and all in such a vigorous condition that their pseudobulbs have grown until they have in many cases doubled the girth of the important ones—no bad test of progress—and the bristling flower-sheaths all over the house leave no reason for doubt that a great and lasting flower show is at hand; indeed, even now there is a good show of C. aurea, C. gigas, C. maxima (six flowers on one spike), C. Dominiana, C. exoniensis (best variety), C. intermedia, C. Eldorado, C. labiata (autumn flowering), Lælia pumila (varieties), Barkerias, &c. The L. anceps and other dwarf Lælias will be grand shortly as evidenced by their flower-spikes, indeed the promise in that direction, among the whole collection, seems to say, that so well has Messrs. Veitch's venture succeeded that their large house will never be void of bloom. The new span Odontoglossum-house, raised

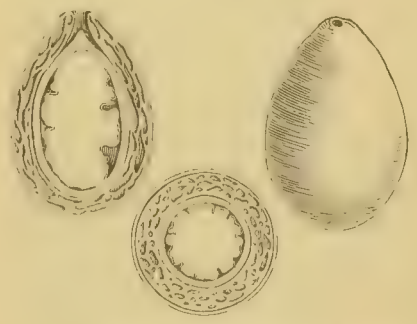


FIG. 117.—SEED OF TORREYA GRANDIS AND SECTIONS.

on the site of the old lean-to, bids fair to be as great an acquisition in its way as the Cattleya-house; it is a commodious, airy structure, 22 feet wide and much more worthy of the rare and well-flowered plants always to be found at this nursery than the old one was. The plants take well to it, and the display of flowers they give is quite a treat at this season. Odontoglossum Alexandræ forms the main feature of course, and beautiful they look arranged with scarlet Sophronites, Pleiones, Cymbidium Mastersii, Epidendrum vitellinum, Mesospinidium vulcanicum, Pilumna fragrans, &c. Plants of the rare Odontoglossum brevifolium are sending up stout spikes, and the large stock of Oncidium macranthum is well furnished with them. In the maze of Orchid-houses beyond, in flower, are fine batches of Odontoglossum Roezlii, Vanda cœrulea, Aërides Huttoni, Phalænopsis violacea, P. amabilis, Dendrobium formosum giganteum, and Cypripedium Spicerianum; and in the large span-house devoted to Cypripediums alone, those endless varieties and improvements which this firm has effected by hybridisation are now as usual giving a good and interesting show; and very pretty is C. œnanthum superbum, one of the richest and brightest rose-tinted of the C. Harrisianum crosses. These Cypripediums seem to be always in flower, C. Sedeni itself generally lasting nine or ten months.

Mr. Percival's Orchids.—A few days ago, at Mr. Percival's, at Southport, the following plants among many others were in great perfection:—Cattleya aurea, many in flower; C. labiata (true); C. maxima, G. Gaskelliana, C. speciosissima virginalis, C. bicolor, Lælia Perrinii, dozens of Lælia anceps (showing); L. elegans, grand; Vanda insignis (true); fine V. cœrulea; Odontoglossum Alexandræ, many fine varieties. This unique collection is succeeding

*

well under the skilful care of Mr. Beddoes. *A. Outram.*

ORCHIDS IN FLOWER AT BRETLARGH HALL, MILNETHORPE. — Grand varieties of the lovely Cattleya exoniensis, the rare and beautiful Lycaste Skinneri alba, the fairy-like Cypripedium Spicerianum, in quantities, are amongst the many novelties just now in flower at Bretlargh Hall, Milnethorpe, in Mr. Walker's grand collection.

DENDROBIUM ADUNCUM. — A South Chinese species, described by Wallich forty years ago, and lately rediscovered by Mr. Charles Ford. The stems are slender, elongated, with narrow lanceolate leaves, and solitary (or racemose) flat pentagonal flowers, with ovate, lanceolate pale lilac segments, and white lip, boat-shaped, terminating abruptly in a short hooked tip. A botanical curiosity, figured in the last number of the *Botanical Magazine*, t. 6784.

ORCHIDS AT THE WOODLANDS, STREATHAM.—The collection of these plants formed by R. H. Measures, Esq., is evidence of what may be done in a short time by an ardent lover of this fascinating and beautiful class of plants. In less than two years a really fine lot of first-class things has been got together, and for the time of year a great number of good kinds are in bloom; and, what must be a great satisfaction to the owner is, that they are all in perfect order throughout. I counted upwards of twenty blooms of the handsome Cypripedium Spicerianum, and some of the varieties were excellent. Cypripedium Haynaldianum and C. Hartwegi were blooming freely. I also noted very fine varieties of C. insigne Chantini, C. insigne punctatum violaceum, and the distinct and pretty C. purpuratum, a species from Hong Kong; also many other good and attractive kinds. But what would perhaps please an Orchid grower most of all would be to see the grand health and vigour of the Phalænopsis. These are certainly very fine, and in this house there was a handsome plant of Galeandra Devoniana with nineteen flowers, a first-class plant of Vanda Lowii in bloom, and a host of good things interesting to the orchidist though not in flower, such as Dendrobium nobile nobilius, D. Ainsworthii, Cypripedium vexillarium, C. Farrieanum, Saccolabium Hendersoni, Cœlogyne Massangeana, &c. Cattleyas and Lælias were well represented in this collection, there being many really grand things, and in good sized plants. I noticed superb examples of Cattleya Trianæ Backhousiana, C. gigas Normani, C. Trianæ alba, C. Skinneri alba, and a plant of C. Leopoldi, with five spikes carrying altogether forty flowers. Odontoglossum Roezlii, and O. vexillarium are doing well side by side in the Cattleya-house, and are as clean and healthy as could be desired. In the cool flowering-house Calanthe Veitchii was blooming splendidly, with long spikes of deep, richly-coloured flowers. Mr. Howe, the gardener, attributes the rich colour of these Calanthes to his having placed them in the cool-house as soon as the first blossoms opened. This house is very gay at the present time; conspicuous amongst a number of good things I may mention Cymbidium giganteum as very fine; Odontoglossum bictoniense, very handsome; and of Lælia anceps there are a quantity of spikes; Lælia autumnalis atrorubens is also in flower, as also Trichocentrum albo-purpureum, a rather showy species; Oncidium Forbesii, Vanda cœrulea, Cypripedium Schlimii, all in good order, and flowering in a superb manner. Showing for flower is a plant of Sophronites grandiflora with eighty pseudobulbs, one of the finest plants in this country; and a grand plant of Lycaste Skinneri alba gives promise of some good blooms, possibly about Christmas. I have merely mentioned a few of the many of the excellent things I saw. To be exhaustive would occupy considerable space. There is work in hand here that may be of much interest to Orchid growers, and will be more conveniently described later on. *J. G.*

ORCHIDS AT MR. B. S. WILLIAMS' NURSERIES, UPPER HOLLOWAY.—Some very good things are to be seen in bloom amongst the Orchids just now, besides many miscellaneous plants. There are some fine spikes of the striking Dendrobium superbiens, Cattleya aurea, a grand showy Orchid; Calanthes in variety, and Cypripediums, amongst which we noticed insigne, Spicerianum, Maulei, Harrisianum, Roezlii (a large light flowered form), Dominii, and Crossianum Lælia anceps, a fine free-flowering winter Orchid; and L. pumila, a splendid rose-coloured flower with a deep rich purple lip; Lycaste Skinneri. Of Odontoglossums several good spikes were in bloom, including some grand forms of O Alexandræ, one in particular having a nice spike of thirteen handsome flowers, both petals and sepals of which were of wonderful substance and breadth, giving the flower quite a massive appearance, and beautifully marked; others, again, were most vividly spotted, but the petals being narrow, detracted from their appearance when compared with the former. Also some good spikes of O. Insleayi, O. Pescatorei, the handsome O. nebulosum, and others; a fine spike of the white Phalænopsis amabilis, a fine large spike of Saccolabium Blumei, Scuticaria Steelii, a curious plant having dark green, terete, pendulous leaves, 4 feet or so in length, with handsome yellow flowers, spotted with crimson, produced from the base of the pseudobulb; also the fine Zygopetalum McKayii. The comparatively new Amaryllis, Mrs. W. Lee, a most striking flower at this time of the year, was blooming freely; the colour is a groundwork of white, deeply shaded and streaked with bright pink and deep crimson at the base; it belongs to the evergreen and perpetual flowering section. Amongst new Sarracenias Mitchelliana and Tolliana were conspicuous. We also noticed a fine large vivid form of Anthurium Andreanum. The fine Nepenthes Rajah, accounted so difficult to manage, was in grand form. A house about 70 feet long, with Nepenthes suspended from the roof, had a fine appearance.

MASDEVALLIA SCHLIMII.—Some flowers of this curious plant have been sent us from the collection of Mr. Vanner, Chislehurst, Mr. Robbins, the grower, remarking that for a Masdevallia its duration is particularly noticeable, the spikes sent having been in flower five weeks, and being even yet comparatively fresh. The plant from which they were taken is a good specimen, with forty leaves, and having borne four spikes. It is a beautiful thing, well deserving to be grown.

ARCHITECTURE AND LANDSCAPE GARDENING.

A COURSE of six lectures on "Styles of Architecture, and their Relation to the Art of Landscape Gardening," has lately been delivered by Mr. G. Richards Julian, A.R.I.B.A., at the Crystal Palace School of Gardening, and from which we are privileged to publish the following abstract. The lectures were illustrated by diagrams, photographs, and sketches on the black board, and without reproductions of these it is of course difficult in many places to make the lecturer's meaning clear. In his opening remarks Mr. Julian said:—"To design the simplest architectural decoration, it is necessary to be acquainted with the characteristic forms and proportions, and the details of moulding and of ornament proper to the style with which such decoration is to harmonise; and the only satisfactory mode of preparation for such work is a study of those forms and details. I do not for a moment mean that they are necessarily to be copied, but we must start on our road with a knowledge of them. The works of the great artists of the past are our inheritance, and an attempt to ignore them must arise either from presumption or from idleness. . . . It is well to remember that to gain the power to design well a balustrade or a summer-house there is no more a royal road than there is to the planning of a cathedral or of a palace. I do not of course wish to imply that you must be familiar with the many problems that the architect has daily to face . . .; but I do wish to impress on you, that to do your work satisfactorily it is necessary to be acquainted with the characteristic artistic expression and the distinctive ornamentation of the various styles. I shall, therefore, describe to you these features of the styles, adding such remarks on any points connected with your special work as may seem desirable."

In pursuance of this plan the lecturer proceeded to trace the rise and development of the successive styles of European architecture, from the period of the earliest appearance of the art in Greece to our own day, and to describe the characteristic features and ornaments of each separate style. Our space will not allow us to follow him in all this, but we propose to give such extracts from the lectures as deal directly with the architectural decorations of parks and gardens.

Speaking of such decorations generally Mr. Julian said:—"There is at the present moment a feeling abroad—among what is, I hope and believe, only a small class of persons—in favour of bringing Nature in all her wildness up to the very doors of the house. Against such an arrangement I, as an architect, most strongly protest: artistically it is a great mistake; the contrast between the necessarily somewhat hard lines and regular arrangement of architectural forms, and the irregular and flowing outlines of natural objects is too harsh and sudden, it needs something intermediate to blend the one with the other, and the formal garden, with its architectural decorations, exactly supplies the want. Contrast is, of course, one of the elements of beauty, but it must be used with knowledge and discretion; in any one of the fine arts a violent contrast almost invariably produces an effect of crudeness. Accessories such as those of which I am speaking harmonise the buildings with their surroundings, make them to appear at home, as it were, instead of looking as if they had been dropped accidentally in the middle of a field or a wood."

The students were not likely, the lecturer said, to be called upon frequently to carry out work in any Greek style, as the "revival" which took place at the end of the last and the beginning of this century was very short-lived, and no buildings are now executed in pure Greek, but in this age of rapidly changing fashions in architecture it is impossible to say what may happen, "and where such accessories as terrace walls, seats, fountains, or other ornamental appendages of gardens are needed in connection with any form of Greek architecture they should be simple, dignified and refined. Terraces should be bounded by a plain wall, without any sort of balusters, but with plinths and coping, the piers should by preference carry statues, but vases of appropriate form, of which examples may be seen in the British Museum, may be sparingly introduced, while the necessary flights of steps should be broad and stately in effect."

Attention was called to the fact that a form of what is called "rustication," that is, a marking of the joints in a plain piece of masonry by broad shallow sinkings, is found in some ancient Greek work, and an illustration of such a treatment from the basement wall of the Parthenon at Athens was exhibited, as were also several illustrations of Greek mouldings and carved ornaments from the Parthenon, and other Greek buildings. A study of the actual remains to be found in the British Museum, and of the casts and reproductions in the Architectural Courts of the Crystal Palace was recommended as the best means of obtaining further knowledge on this subject, and as a guide Mr. Julian had prepared a design of his own for a terrace wall and piers which would harmonise with a building of Greek character.

(*To be continued.*)

MESSRS. PAGE & SONS' GROVE NURSERIES, TEDDINGTON.

A FINE display of Cyclamens is to be seen at the above nurseries just now, consisting of between 11,000 and 12,000 of young plants (thirteen months old) the major portion of them in 4¾-inch pots, the remainder in large 5's and 6's, all dwarf stocky plants, with innumerable blooms showing of nearly every shade from pure white to the deepest crimson, and even some of a deep purplish tint. There are many distinct varieties amongst them as regards new tints, and all have great breadth and substance of petal, in fact some of the Giganteum type have petals nearly as fleshy as those of Camellias. It is certainly a remarkably fine strain, and after a most careful inspection we failed to find a single shabby plant, either as regards foliage, bloom, or colour, amongst the lot, plainly demonstrating the care that must have been taken in the selection of parent plants. There are five houses devoted to them, four being 160 feet by 13 feet, the other being a great deal broader but not so long. The view from an end of the long houses must be seen to be appreciated. There are 28,000 young plants coming on for next year, Many other specialities are well done here, such as Gardenias, Camellias, Bouvardias, Roses, &c., for cut blooms, and the results obtained from the above plainly show what can be done by strict application, even when great obstacles have to be overcome. Orchids are not largely cultivated, but what we saw were doing very well. Messrs. Page are the fortunate possessors of a very fine type of Odontoglossum Alexandræ, and although fine specimens of this favourite Orchid are getting a little less rare than formerly, we think

that this one will compare very favourably with the finest. The spike is not large, being on a very small plant, but the flowers are nearly 4 inches across, and are of fine substance and most richly marked and spotted. Another plant was very good but rather too "starry."

FORESTRY.

Why do our Woods not Pay?—It is very difficult in writing of a subject, however plain and simple, to convey the exact meaning to others. This is nothing to be wondered at, since men are so differently constituted. An object looked at by one man from one point of view appears very different from what it does from another. Nor does it in the main greatly improve matters to enter upon explanations, or even to recast the subject. Assuming that the subject of planting, though complex and varied, has been, at least so far, explained and understood that the major and most common errors may be avoided, and a more profitable system adopted, the next step taken is that which comprehends thinning. As has been formerly explained, unless the arrangement and distribution of trees upon the ground be right, all future operations in their culture must be less or more defective. Thinning being now the subject under consideration, it will be most convenient to divide it into two distinct divisions, namely, Pine and Fir plantations, and hard woods. If the plantation consists of one species only, as Scotch Pine, Larch, or Spruce, it simplifies the operation very greatly at every stage; but when it is varied and mixed it renders the work at any stage much more difficult, complicated, and hazardous.

Thinning Scotch Pine.—Let us take, for example, one of the large Scotch Pine plantations in Strathspey, originally planted with about 2000 trees to the acre, or say 4½ feet apart, the object of which is to grow heavy mature timber of first-class quality in the most profitable way. Such plantations are recommended to be thinned to about 600 trees per acre as the crop. The first work of thinning we recommend to be done when the general crops are from 4 to 6 feet high and probably six to eight years old. A good woodman is able at that stage of growth to thin an acre less or more in two days, at a cost of 5*s.* to 6*s.* per acre. The thinnings may be counted as of no money value, because if cleared out they are not worth more than the cost of the labour. The plantation thus once thinned need not of necessity ever again require to be thinned, but may then grow till ripe for cutting and clearing. Some of the most profitable pieces of Scotch Pine woods and plantations in the kingdom are those, whether by accident or intention, that have been grown on these or similar principles. Some of the finest and most valuable Scotch Pine plantations, or patches of them, we have ever seen are those in which the trees stand not more than 8 to 10 feet apart. We are well aware this practice of thinning recommended for Scotch Pine is objected to by some foresters, but that of itself neither makes the practice right nor wrong. Our reasons for so thinning are because the work is done at a period of the plantation's growth when it can be done cheaper than at any subsequent and older stage of growth, and though, as already stated, no revenue can be derived for the thinnings, it will yet be found in practice to be cheaper and pay better ultimately than any other system. Again, looking forward to the prosperity of the permanent crop, it will be found that by thinning at this early age no serious check is ever inflicted upon the growing trees, and that they continue growing as fast after being thinned as they did before, which is far otherwise with older and advanced plantations which in almost all cases fall off in growth considerably for several years after thinning. Another evil in allowing Scotch Pine plantations to be advanced before thinning is that their side branches thereby lose their vitality at too early a stage of growth, and which once lost is never again restored. A third objection to deferred thinning, is that the trees are thereby prevented from properly rooting; and want of roots is an evil not easily over-estimated; for on the proper rooting both the growth, development and stability of the tree materially depend. In addition to these obvious and conspicuous evils, there is yet another which though less prominent is yet equally real and probably even of greater magnitude than any of the preceding, namely, that of inducing the direct rays of the sun to fall upon the ground, thereby unduly heating it, and drying up the moisture, which latter is essential to the proper growth of all Scotch Pine plantations. We have not overlooked the circumstance, that by very early thinning the trees are thereby so far allowed to spread their branches as to become comparatively bushes and unduly thick in stem (for a time) compared with their height. Now there is no actual need of apology for these results, for it is just as unreasonable to look for a man in one who had not first been a boy, as to look for a stately and well proportioned tree without its first undergoing all the necessary preliminary stages of growth. The bushy tree with spreading branches, shows conclusively that it has correspondingly furnished itself well with proper roots, and at the same time made ample provision for continuous and rapid growth to be sustained to mature old age. The branches, too, as may well be understood from their distance apart, cannot increase beyond the limits assigned them, and if the trees are 9 feet apart it is quite evident the branches of each tree cannot be more than 4½ feet in length, and the length again so far regulates the thickness, for there is always a corresponding proportion between the length and thickness of the branches. If the plantation is to be cut down as mature at, say, sixty to seventy years old, it will pay better if nothing further be done by way of thinning except cutting down dead or damaged trees. The less disturbance of any kind that is given to a Scotch Pine plantation, and the more it is left to Nature from first to last, the better, as nothing is more injurious to it than subjecting it to sudden changes, such as admitting strong currents of air or the direct rays of the sun to dry and heat the soil. A cool shady place and equal temperature suit it well.

Thinning Larch.—Thinning of Larch plantations is conducted in some respects the same as Scotch Pine, but in other respects considerably different. In some situations thinning should be done very early, as in ravines and sheltered places, while in exposures it should often be considerably delayed. In sheltered places, wherein the top growth is rapid and luxuriant, often over 30 inches annually—in such situations thinning should in most cases be done before the side branches touch each other. When this is not done the trees become disproportionately tall in comparison with their thickness. We have uniformly recommended as a very safe guide to thinning that the tree be maintained as many inches in girth near the ground as it stands feet in height—that is, when a tree is 3 feet high it should be 3 inches in girth near the ground, and when 60 feet high, 60 inches in girth; and these proportions should be maintained during the whole period of thinning. It is found in Larch culture that the tendency is to grow the tree disproportionately tall in comparison to its girth, and where this appears in any case thinning should at once be resorted to. Any strained effort at perfect regularity of the trees upon the ground should be avoided, for however desirable this is theoretically, yet in practice it cannot be attained. A plantation, for example, contains 2000 trees per acre, and at that they stand about 4½ feet apart; after thinning is once commenced the trees cannot again be equidistant till one tree is taken out from between each two, and then there are not, as might be supposed, 1000 trees left upon the ground as the crop, but only about 500. Neither is it imperative that the trees be all of the same size; to attempt this would also be vain and fruitless, for it would imply not only equality of seed and seedlings, but all the varied and numerous conditions under which trees are grown. Of all trees in the forest none is more accommodating or easily influenced for good or ill by thinning than the Larch. We saw, some years ago, a Larch treee on the famous Culben Sands in Morayshire, which had stood over twenty years without attaining over 4 feet in height or three-quarters of an inch diameter. After that date it was relieved of other trees confining it, when, like magic, it started into growth and grew most rapidly. Another circumstance, however, connected with this tree requires to be noted, namely, the surface was drifted pure sea sand to a depth of 2 feet or more, and after the roots went through the sand, and penetrated the soft moss underneath, the rapid growth set in. Now, we have carefully stated both facts in connection with this extraordinary growth, for it is scarcely reasonable to believe that the whole results of such growth were due to the one cause, namely, room and space. Another remarkable example of extraordinary accelerated growth in a Larch tree came under my observation in the policies of Cullen House a few years ago. It was found necessary to cut down a Larch tree for a particular purpose; and after the tree was laid down in the sawmill yard to be sawn we noticed something very unusual in the rings or annual growths, as shown at the butt-end of the tree. In order, therefore, to know the cause of such peculiar growth, the tree was sawn longitudinally through the centre, and where this was done, it presented the most unusual and unaccountable appearance of anything of the kind we had ever seen. The united concentric growths of seventy-three years only measured 3 inches diameter of the tree, some of them so minute that they could not be seen by the naked eye. After that date, beginning with the seventy-fourth year's growth, the annual zones at once increased from that of less than the thirty-second part of an inch, to that of fully one-eighth of an inch, and some years to one-seventh of an inch; and this increased growth was maintained till the one hundred and seventh year of its age, when the tree was cut down. At first we were quite at a loss to account for these most extraordinary growths, both in the excessively small ones and those unusually great. The tree, as it proved, had been originally planted in the centre of four hard woods, Ash or Elm, their decayed stools being found within 4 feet of the Larch on all sides. The hardwoods in question had evidently been cut down about thirty-three years ago, and thereby afforded room, light, and freedom, to the Larch. It grew on peaty soil somewhat soft and moist; and in the latter case, as well as the former one at Culben, it is just possible the moisture might have some, perhaps very considerable, influence in connection with the free exposure of the tree to light, sun, and air, in producing these extraordinary results.

C. F. Mechie, Cullen House, Nov. 17.

(*To be continued.*)

PRUNING.

The opportune remarks on pruning in your late leaders might with profit extend to the pruning or heading-back of newly planted fruit trees and quick-sets for hedges. With the fall of the leaf most of us are looking about for blanks among our wall-trees and the small fruit quarters, and we not only note the gaps to fill, but take note, alas! of those previously planted. In too many instances, through injudicious and premature pruning, or heading-back, we shall find many of these have made but poor weakly shoots, and those of an irregular character.

Trees received from a nursery—unless planted in the early part of November—should, in the opinion of the writer, have a year's rest to recuperate latent energy before heading or cutting them back for future growth; by that time the roots will have recovered their mutilation sufficiently to supply the requirements of the buds intended to furnish healthy shoots as a groundwork for the future tree. The same rule applies to berry-trees of all kinds, as well as for standard fruits for orchards, bushes on pyramids for gardens, and in a greater degree does this apply for forming newly-planted quickset hedges.

One may observe, in going along the highways, or across country, miserable-looking newly planted sets, weak and mildewed, and in this state they remain for a few years before making a good start. Sometimes the fault is laid to the sets, the seasons, the soil, or the planter. To remedy this state of things the Quick should be planted firmly in the autumn, and remain twelve months before the cutting or heading-back takes place. Strong vigorous shoots will then be found bidding defiance alike to mildew and the depredations of ground game.

Reverting to fruit trees. At this place, some eleven months ago, we received from Canada a quantity of trees, and among them some fifty standard Apples. They were knocking about some five weeks before we received them, were then carefully planted, and secured from the wind in a sheltered position; not a shoot was pruned, except those injured in transit, and in looking through them to-day I find we have but one, and that not a total failure, in the whole batch. They have formed strong healthy buds. We shall now prune them, and no doubt vigorous shoots will be the result next season. *J. J. B.* [What our correspondent says about the cutting back of newly planted trees being a practice to avoid applies much more to Apples, Pears, and deciduous forest stuff, than to such well-rooted plants as are worked on the Plum stock generally. Ed.].

Florists' Flowers.

SEASONABLE NOTES ON GREENHOUSE FLORISTS' FLOWERS.—THE CHRYSANTHEMUM.—The time has now arrived to begin the work of propagation for next season. The old flower-stems should be cut off as soon as the flowers have faded or are removed; and if no root-suckers have been produced the plants ought to be placed near the glass, and encouraged by careful attention to make them. If the root-cuttings are ready they should be cut off just under the surface of the ground, each cutting to be planted in the centre of a small 60-sized pot. The pots may then be plunged in a cold frame, or placed on a shelf near the glass in a greenhouse; I prefer the latter, as severe frosts may set in, and the young cuttings make no progress. In fact, it is necessary that all of them intended to produce specimen plants should be rooted as soon as possible, whether they are pompons or large flowered varieties. All the specimen pompon plants should be grown from cuttings. Many of the large-flowered kinds make the best specimens from old plants. If the plants that were grown with tall stems to produce large blooms are examined it will be found that on some of them a cluster of growths have been produced near the base of the stem, from 1 inch to 6 inches above the soil. These plants may be dug out, and the soil sufficiently removed from their roots to admit of their being potted into 7-inch pots. As soon as they are potted they should also be placed on a shelf near the glass in a greenhouse, or any house where the frost is kept out, so that the plants can be kept gently growing. See that the plants and cuttings are clean. Mildew and greenfly are the only parasites, and they can be easily destroyed. I have been to all the principal shows this year, and note with pleasure the advent of new varieties of improved form, colour, and distinctness. In the incurved section Jeanne d'Arc is a grand acquisition; it is not quite new, but has come well to the front this year; it is identical with Madeline Tezier. Lord Alcester is a splendid primrose kind, paler than Golden Empress, and sufficiently distinct. Mabel Ward and Bendigo are identical. By some inadvertence the latter was certificated last year as a sport from Mrs. Heale; this is an error. The Japanese section has been greatly improved. We have a new violet-purple colour in Beauté des Jardins; Camoens, rosy-purple, full flower, and broad reflexed petals; Val d'Andorre, cinnamon colour; La Purité, a handsome variety with white flowers; M. Astorg, white, of the Elaine type, but as shown certainly superior; Ville de Toulouse, purplish-violet, reverse of petals silvery; Helvetia, deep purplish-rose; Madame Henri Jacotot, deep Indian-red, gold tips reflexed. The Japanese Anemone varieties are quite unique in their way. The most remarkable variety is Fabian de Maderanaz. It has very pale purplish-lilac flowers, with long narrow outer petals, which hang downwards; Madame Cabrol, a distinct and fine variety, with very pale lilac petals, which are broad and twisted; Sœur Dorothée, pale rose, almost white petals, with a high centre; Cullingfordii is of the reflexed type, and yields to none in its brilliant scarlet, with a crimson suffusion. The pompons have some handsome additions in colour and form. Model of Perfection, neat lilac flowers; Star of Whyke, very fine pure white hybrid pompon; Arbre de Noel, orange-brown, fimbriated; Souvenir de Jersey, rich deep yellow—very fine and distinct; Rosinante, rosy-blush. A few of the varieties with single flowers are really pretty. Miss Mary Anderson is a charming kind—white, changing to purplish-blush; Mrs. Capel, pale rose; Lady Falmouth, white; Magenta King, large; Rev. A. H. Glennie, deep red. The above I marked for purchase to add to our own collection.

PELARGONIUMS.—The show, fancy, and decorative varieties require much care to prevent the shoots from being drawn up weakly, they are now growing freely, and must be kept close to the glass, with as much air admitted to them as possible. Those anxious to grow handsome specimen plants, must see to tying-out the growths carefully, and if they are too numerous it will be necessary to remove the weak ones. The repotting of the earliest flowering specimens should be done about the end of October, but the work of repotting may be continued until the end of December or even later. Any requiring it should be seen to at once. Watering should be done with great care, especially after repotting, if the plants are in a moderately moist state at that time they will not require any for a week or ten days; water them sufficiently then, and they will not require more for a week at least. It will be necessary to fumigate once in a month or six weeks to keep greenfly from them. With good management no signs of spot will be seen, but any decayed or decaying leaves must be removed at once, for they have not only an untidy appearance, but are in some cases injurious. The plants intended to form handsome specimens for exhibition must not be close together. Let them have as much space as possible. Zonals are now finely in flower, and will continue so until Christmas; after that we begin to look for forced shrubs, bulbs, and plants that flower naturally in the spring. It is a good plan to pinch out the tips of the flowering shoots, as the trusses are strengthened thereby. Give the plants as much space to develope themselves as possible, they will not produce good trusses if they are crowded together. The temperature of the house where they are growing is kept about 50° to 55° as a minimum. A continuous circulation of air is kept up, a small opening in the top ventilator being open even at night. The small hot-water pipe near the roof-glass is a great advantage; it keeps the plants very dry, even in the most unfavourable weather. *J. Douglas.*

CARNATIONS: AUTUMN *v.* SPRING PLANTING.—These old-fashioned and sweetly-scented border flowers hold their own against all new-comers; and this is not to be wondered at, seeing that, in addition to their agreeable perfume, they possess a variety of pleasing shades of colour, and are easily cultivated. They are increased by layering the side shoots in sandy soil as soon in July or August as the plants have done flowering. The flowers, too, retain their freshness longer than many other summer flowering plants in a cut state. In this way, associated with a spray or two of Maidenhair Fern, or their own foliage, they are very useful, and suitable when placed in small glasses for embellishing the boudoir and drawing-room, and also for buttonholes. For this purpose we grow a goodly number every year, principally of the old crimson Clove and bright scarlet varieties, in a west border, in light rich soil, about 2 feet deep, and in which the plants grow and flower well. A fortnight since the shoots which were layered early in August last were detached from the parent plants and taken up with compact balls of earth and laid-in by the heels in a border close by, whilst that from which they had just been taken was being got ready for replanting them. This consisted in the manuring, digging, and levelling of the ground to the proper slope from the wall; this done, the line was stretched the entire length of the border, and the alley cut off at 3 feet from the wall; then the plants were planted with a garden trowel in rows 12 inches apart and the same distance between the plants in the rows, which run at right angles with the wall. The border is 9 feet wide, and the first plant in every other row is set at 3½ feet and 4 feet from the wall, so that every alternate row contains six and five plants respectively, and the plants thus planted are in rows viewed from whatever standpoint they may be. In planting, the soil was pressed firmly about the roots, and afterwards watered to settle it about them. We may add that previous to planting we scratch a surfacing of soot into the border with a rake, as much with a view to rendering the soil distasteful to insect life as to fertilising it. Later on we shall put on a surfacing of fine coal-ashes, about 1 inch thick, between the plants and rows, which will prevent the frost penetrating the soil. Thus treated we find that we lose very few, if any, of the plants during the winter, and that the results, by comparison with those obtained from spring-planting are much more satisfactory. However, in localities in which the soil and situation may not be so good as here, it will be advisable to pot-up some of the plants in 3-inch pots to be wintered in a cold pit or frame, so as to be provided against mishaps during the winter. *H. W. Ward, Longford Castle Gardens, Salisbury.*

THE ISAAC ANDERSON-HENRY LIBRARY.—A movement has been got up by the Edinburgh Botanical Society to prevail on the Government to acquire the botanical library of the late Isaac Anderson-Henry, for the Government library at the Botanic Garden.

SOILS AND COMPOSTS.

THERE is nothing so essential to success in gardening as good soil and compost, without which, although skill and attention will do much, it is impossible to grow either fruit or plants well. This being so every effort should be made to procure the right kinds of material, sound loam being the basis, as with this and leaf-mould, peat, &c., most mixtures are made. The best loam is that from an old pasture that has been long grazed by cattle, and has short close herbage, which is a pretty sure sign that it is not sour, as stock are good judges and do not take food that is rank. Another good index of quality is the colour of the soil, and though black or dark coloured earth may be rich, most gardeners have a weakness for yellow, and seldom care to have any other. I must own to having the same prepossession, as I have always found plants do better in it, and the growth and wood of the plants to be sounder and harder than in any other. Besides being of a nice yellow colour, the loam should be tough and fibry, and if a little inclined to be heavy, it may be considered perfect for all purposes, as it will be in the right condition for many plants, and may be made so for others; but, as a rule, the less added to such loam the better and the more suitable will it be for most things. Some do not seem to understand this, and in preparing it for fruit tree planting or Vine borders, make use of many mixtures, and by the additions they make spoil the staple they started with, for instead of forming the bulk, the loam now only bears a small proportion to the other ingredients, by which it is overwhelmed. Instead of this it is far better to use it pure and simple, just as cut, and the fresher it is for border making and fruit tree planting the more suitable will it be, as it rots quite fast enough, and the slower the decomposition the longer will it last and remain in a healthy open condition. If anything at all is added, let be soot, and that only; and if a bushel or so be mixed with a full load, it will be quite enough, and will have a most beneficial effect on Vines or plants of any description. When loam is required for potting it is necessary to lay it up for a time to kill the grass roots, but it should not be stored long enough to allow of the decay of the fibre, as it is that on which the roots of plants feed. To keep it moderately dry, fresh, and sweet the sods ought to be stacked by laying them upside down, one on the other, and when doing this it is a good plan to spread over them a little rotten manure, which will enrich the loam and become thoroughly incorporated with it when it is chopped up ready for use. Leaf-mould, or anything else it may be desired to add before potting, is best left till wanted, as when lying long, without being disturbed, it is apt to generate fungus, which is most injurious to the roots and health of all plants. To get good leaf soil the only way is to save leaves and keep them frequently turned till they decompose, for when used for hotbeds or thrown into large heaps, the fermentation they undergo often makes them quite sour. Peat is the most difficult of all soils to get, and is fast becoming scarce, especially that suitable for Orchids, which is now very dear. The only peat worth having for the purpose of growing these beautiful plants is that full of fibre, as the earthy particles are of little or no use, and to be really valuable the sods ought to be almost as tough and holding as a cocoa-nut mat. Much of the so-called peat is only bog, or black earth, having little or no vegetable matter in it, instead of containing, as it ought, about 70 or 80 per cent. It is only in heaths or commons where such as this can be found, and gardeners who can get it in quantity are fortunate, as with it and loam much may be done, for the two combined will grow anything in the highest state of perfection. Common peat does very well for Rhododendrons, but for Heaths and Azaleas it must be good, as they have to stand long in it; and unless it is tough and full of fibre it soon becomes sour and does not afford the food the plants want. The best time to cut and store both peat and loam is in the autumn, when the two should be carted in a moderately dry condition and laid up in stacks, formed after the manner of long potato pits, wide below and tapering towards the top, as then rain cannot get in to do any harm. When so exposed at the sides, the peat or loam has the full benefit of the sweetening influence of the air, which is continually passing through and rendering it in a fit state for use. To be prepared for potting, a stock of both should be kept under cover, and when a wet day occurs they may then be pulled to pieces, chopped up, got ready, and if necessary put into a place to be warmed, that the roots of the plants they may be brought in contact with are not chilled. *J. S.*

COLONIAL NOTES.

TRANSMISSION OF WESTERN AUSTRALIAN (CUT) FLOWERS, &c., BY MAIL STEAMER TO VICTORIA.—Believing it may interest some of your numerous readers I hasten to send you the result of some recent experiments in the transmission of flowers, cut only so lately as twelve days ago in that most prolific of all bush countries, viz., Western Australia, and sent in the care of the officers of the Peninsular and Oriental Steam Navigation Company's steamer *Cathay*, enclosed with a case of valuable plants and seeds.

The distance from King George's Sound to Hobson's Bay is about 1540 miles in a straight line, and it, therefore, speaks well for the packing and transmission when I remark that the flowers were received in so fresh a state that one would suppose they had been gathered only on the day the packages were opened, instead of twelve days before that time! The plants, too, enclosed in a canvas covered box (exceptionally well packed) were found to be in the best possible state of health. I may add that it is not often found possible to ensure satisfactory results in instances of this kind, owing to the want of knowledge of correspondents who do not feel competent to give effect to their good intentions. However, the lady who obtained the flowers (the wife of an official correspondent of mine) took great care to ensure the success I have named, and, so far as the flowers are concerned, packed them in damp moss in circular tins, such as would hold a pound weight or so of coffee, closed the lids and pasted the junctions over with paper, both to prevent the evaporation of moisture as as well as to protect the contents from the action of the atmosphere. The following is the list :—

Banksia coccinea	Hovea ilicifolia
Boronia crenulata	Johnsonia lupulina
,, elatior	Pimelea imbricata var. pilifera
,, heterophylla	,, sulphurea
Chorozema angustifolia	Ricinocarpus tuberculatus
Conospermum cœruleum	Tetratheca pubescens
Cosmelia rubra	Verticordia Fontanesii
Dampiera (species)	Xanthosia rotundifolia
Hovea elliptica	

What a grand field for an intelligent plant lover is Western Australia! I am continually receiving from there both plants and seeds, but in very limited quantities, and, unfortunately, only just sufficient to enable me to grow a few representatives for the embellishment of the groups set apart in these gardens for the culture of eminently beautiful native Australian plants, among which may be named the gorgeous scarlet-flowered Eucalyptus ficifolia, indigenous to Broke's Inlet, Western Australia.

Your "home" readers can scarcely imagine the effect produced in our landscapes, especially whereon redundant vegetation abounds (such as Acacias, Eucalyptus, Melaleucas, &c.), by dotting here and there specimens of this beautiful tree. From funds allowed me by the Government I have set apart a portion for the purchase of such trees as the scarlet Eucalyptus, and having already proof of their value and effect so far as concerns these gardens, I hope soon to embellish them still more by massing the plants named (also others from various portions of Australia) in suitable positions on the lawns and in the shrubberies, as well as in the botanically classified groups arranged by me during the past eleven years in various portions of the gardens.

To make matters more agreeable to visitors, I may add that, besides the botanical name, authority, country (habitat), &c., of each plant, the common name, English or native, is always affixed where possible, resulting in the manifestation of increased interest on the part of botanical and art students, and also by many thousands of persons who make use of the gardens either for study or relaxation. *William R. Guilfoyle, Director of the Botanic Gardens, Melbourne, Oct. 4.*

FLOWERS IN SEASON.

SCHIZOSTYLIS COCCINEA.—Beautiful flowers of this miniature scarlet Gladiolus-like flower have been sent us by Mr. Cannell, Swanley. The fine autumn has been most favourable to the development of this fine plant out-of-doors, but it is always worth growing in quantity in pots as well, as every autumn has not so much warmth and such fine days as this, and the plant produces bloom abundantly in a pot. Mr. Cannell tells us it will grow in a back garden, meaning, we imagine, a London one, and we know that it will continue to unfold its buds, in a warm room, for a week.

ANEMONE HORTENSIS.—As a proof of the mild character of the present season in Ireland, a correspondent has sent us a bunch of Anemones, as fine in their tints and as well developed as spring flowers. These were grown from seed sown in April, and which began to flower in August. They will continue to bloom till prevented by frosts.

DISEASE OF CHRYSANTHEMUMS.

OIDIUM CHRYSANTHEMI, *Rab.* — At the time when the Rev. M. J. Berkeley described and illustrated for the first time, in the *Gardeners' Chronicle* of 1847, the dreaded, and at that time new, mildew of Vines, named by him Oidium Tuckeri, he said that another "form or species, with still larger spores, occurs on Chrysanthemum Indicum," *Ann. Nat. Hist.*, 544. It would appear, although Mr. Berkeley suspected this Chrysanthemum fungus to be a distinct form or species of Oidium that he never characterised it as such.

Six years after Mr. Berkeley detected the Oidium on Chrysanthemums, Dr. Rabenhorst, impressed with the distinct form of the fungus, described and illustrated it in *Hedwigia* for 1853, No. 5, p. 19, as a new species, under the name of Oidium Chrysanthemi.

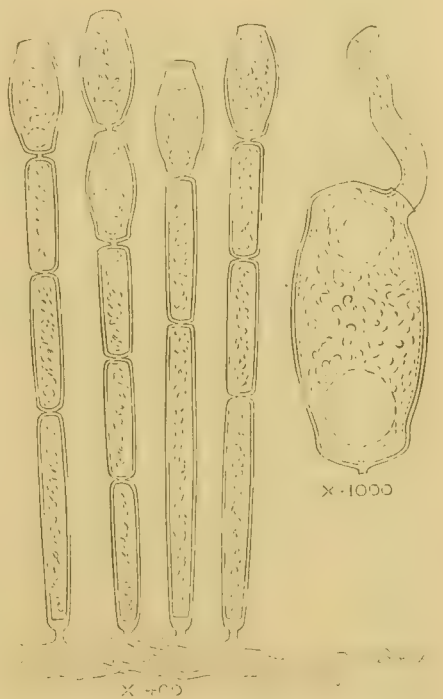


FIG. 118.—MILDEW OF CHRYSANTHEMUMS: OIDIUM CHRYSANTHEMI, RAB.

Enlarged 400, and the germinating spore 1000, diameters.

Dr. Rabenhorst's plate, tab. iii., we consider far from good or characteristic, still it probably represents the species that Mr. Berkeley had in view, and it is undoubtedly the plant which has been so sadly plaguing Chrysanthemum growers during the late autumn.

The fungus is of historical interest, having been seen so long ago by Mr. Berkeley. It is also remarkable that it has remained neglected by botanists in Britain for so many years, for it has never been printed in any of our handbooks. Many species of Oidium are undoubtedly imperfect conditions of other fungi, but this is no reason why they should be neglected, for Oidia often differ from each other in a remarkable manner and are often doubtlessly perfectly distinct. Besides this, there can be little doubt that some species, as O. fructigenum, Schrad., are, according to our present knowledge, perfect in themselves : Oidium is a good sound genus.

O. Chrysanthemi, Rab., may have been overlooked owing to the fact that Mr. Berkeley indirectly associated it with O. Tuckeri, Berk., and there is an intolerable habit amongst modern botanists of taking everything for granted and shirking personal examination when possible. We make these remarks because we are assured that if any competent observer had ever compared the two Oidia side by side he would immediately have noticed the marked difference between the two plants.

In fig. 118 we have engraved, enlarged 400 diameters from Nature, a group of clubs of O. Chrysanthemi, kindly forwarded from Dublin by our obliging friend Mr. F. W. Burbidge. The fungus is altogether larger than O. Tuckeri, and the spores, or conidia, are considerably larger and different in shape. O. Chrysanthemi is one of the largest plants of the genus. A glance at the illustration will show the real beauty of the fungus, and the delicate way in which the joints of the club and the spore which crowns each club are balanced. The spore which caps the club is barrel-shaped and most elegant in form. The clubs, too, arise in a beautiful and peculiar manner from the much finer threads of the spawn or mycelium. The curious and elegant constriction at the base of each club occurs at the points where the latter bodies push through the mat of spawn which covers the Chrysanthemum leaves. The spawn threads are fixed to the leaves by minute suckers, which pierce the membrane of the leaf; this piercing causes decay. The spawn is also woven over the organs of transpiration or mouths of the leaves, and this disturbs the proper growth of the invaded plant. The Oidium grows on both sides of the leaves, but, as is usual in these cases, with greater luxuriance on the lower surface.

A single conidium in the act of germination is shown enlarged 1000 diameters on the right of the illustration. In botanical books it is common to see figures (all slavishly copied from perhaps one original) of spores germinating at the apex or side. We have seen a good many conidia belonging to Oidia germinate in our time, and with us the germinal tube emerges from one corner, as we have shown it; or, if the conidium is oval, at the place where a corner would be if the conidium were oblong in shape.

In houses no doubt this Oidium would succumb before the fumes of sulphur if the fungus had not got too strong a hold. It would doubtlessly interest many of your readers if Chrysanthemum growers would say to what extent their plants, and what varieties, usually suffer from this pest. *W. G. Smith.*

THE VEGETATION OF NEW ZEALAND.

IF there is one thing more than another impressed upon the mind of a man who studies the vegetable kingdom as he travels through different parts of the earth it is the distinct aspect, or typical appearance, presented by the respective flora of the various countries. Each country taken as a whole seems to have its own peculiar feature according to its vegetation, which is at a glance easily distinguished from that of other lands, providing the climatic and geological conditions are dissimilar. Countries widely separated, but with similar conditions, have the same form of vegetation, although the families and species of plants may be totally different. If it were possible to take my readers up into some of these enchanting Fern gullies of New Zealand, and, after allowing them to take a glance at the vegetation, transport them to the Himalayas of India, the Drakensbergs of South Africa, or the Blue Mountains of Australia, and there show them places which have a similar climate, &c., to the New Zealand gully, they would declare all those places to be in the same country, because the vegetation bears the same stamp, or in other words has assumed the form most suitable for the same circumstances. The Euphorbias and Asclepiads of the South African Karroo Desert assume the same habit as the Cacti of similar places in Central America. And so on throughout the whole world we find that the flora of a country is in perfect harmony with the fauna, climate and geology; in fact it seems as though they had all produced each other.

THE NATURAL HISTORY OF THE ISLANDS.—In New Zealand we have very few gorgeous flowers, the absence of bloom with bright colours being noticeable through the length and breadth of these islands; therefore we have very few gorgeous plumaged birds or beautiful insects. The total absence of ruminating quadrupeds arises from the inability of the natural vegetation of this country to support animal life. If nutritive grasses had been indigenous, then there would have been food for these animals, which in turn would have furnished support for the carnivorous animals, and so on from one class of animals to the other until all would have been represented. But the natural conditions

forbade the existence of animals until the advent of the Anglo Saxon with his grain and grasses—an advent which will ultimately change the aspect of this country as much as any geological epoch has previously done. There is a feeling of quietude and simplicity in the deep sombre forests of this colony, which is decidedly peculiar to a land devoid of dangerous and ferocious beasts, snakes, &c. Safety and peace seem to be depicted in every thing, and are especially exhibited in the habits of the birds. These with few exceptions are the most harmless and simple birds in creation. As a whole, they are without colour, song, and sense, if the word can be applied to them, for often when in the forests they will actually alight on a man's body, and on commencing to use the axe or making a noise they will come to the place where previously not a bird could be seen. I have stood in one spot and thrown stones at a bird until my arm was tired, and then failed to frighten the bird, which, however, was wonderfully quick in sight and movement. In unfrequented parts, by shooting a kau-kau (a large bird of the parrot tribe), a man could keep on shooting all day at the others, which keep collecting round to see what is the matter with their companions. I have had wood hens (Ocydromus australis) walk into my tent and help themselves to whatever came in their way. I have seen them walk deliberately into a smouldering fire; and on one occasion I stood still watching the movements of the same bird, which walked around me, over my feet, and between my legs, as though I were a tree. These birds are exceedingly difficult to kill with a stone, for although they come in close proximity to you, they are so wonderfully quick of sight and movement that it is very hard to hit them; and, unless a leg is broken, they will up and away after being knocked over by a large stone.

All this tameness and want of caution arises from the complete absence of that struggle for existence which is so apparent in those countries where the birds have to be continually on the alert for the attacks of snakes, other reptiles, animals, &c. The sharp sight and rapid movement is evidently the result of the falling branches and trees, which is continually occurring in these damp forests. The absence of snakes to keep man with his "heart in his mouth," and the lack of dangerous animals to disturb his meditations, give to this highly-favoured colony advantages over most lands similarly situated. One can wander, crawl, and scramble through the Fern depths of these grand primæval forests without fear, and with the same simplicity as the native birds.

THE VEGETATION.—In the vegetable members of this country we have however, all the representatives of the kingdom. There are plants adapted for every conceivable position—aquatics, amphibians, epiphytes, parasites, climbers, herbaceous plants and those which are fruticose, and arborescent. New Zealand certainly lacks animal life, but vegetation is rampant, and teeming on every hand in countless forms. I know of nothing in all the countries through which I have travelled which can approach in number of forms, variety, and interest the mountainous forest regions of parts of the west coast of the Middle Island of New Zealand. There are fungi, of every conceivable form and colour and size; lichens of every fantastic shape, which seem to have monopolised the colours wanting in the flowers; mosses of every shade and hue of green, rivalling the Ferns in size and beauty; Ferns beyond description, from the miniature Trichomanes of a quarter of an inch in height to the 50 feet stem of the Tree Ferns; Loranths forming immense bushes on the branches of trees, and excelling in their bloom the usually insignificant flowering Orchids, which are, however, in some species sweetly scented—the scarcity of these favourite epiphytal plants is made up by the numerous epiphytal Ferns, which hang in graceful plumes from almost every tree, such as Asplenium flaccidum and A. falcatum, forming objects of unsurpassed beauty; flowering Rubi, Smilax, and Clematis struggling for height with the towering monarchs of the forest, and festooning from tree to tree. Herbaceous plants, from the meek but brilliant Nertera depressa, covering the ground and stumps, up to the gorgeous Ranunculus Lyallii on the mountain tops, where its waxy white flowers and large peltate leaves create patches of beauty beyond description. Shrubs in abundance, including Fuchsias, Leptospermums, Olearias, Coprosmas, Corynocarpus, and the beautiful forms of Pittosporum. Trees of every size and dimension from the graceful Panax crassifolium, with its whip-like stem, to the towering species of Podocarpus with immense trunks of timber, second to none in the world in quality. All these and many others, combined with the grand and majestic scenery, confronting the traveller on every hand, succeed in forming a lasting impression in favour of this perfect elysium of vegetation.

Although we have here a great mingling of what appears to be, at first sight, disconnected groups of plants, and a great diversity of form and type, still in it all there is the feature peculiar to New Zealand. Go where we will and look where we like, there is still the same characteristics and the same aspect, which can readily be conceived, by imagining an arborescent growth of flat-leaved Conifers, intermixed with small flat and coriaceous-leaved evergreen trees and shrubs with medium-sized crinkled leaves, all bound together with climbers, and flanked up with a mingling of Cordylines, Phormium tenax, and clumps of Poa conspicua. This, with here and there a glimpse of a Tree Fern, just peeping from beneath the mass of vegetation where the small Ferns luxuriate, and long entanglements of hair-like white lichens, hanging pendent from the branches of the highest trees, constitutes a true picture of "bush" scenery in New Zealand. As in most countries, there are in these islands a few plants which range over the whole place; one meets them everywhere, sees them in every painting or picture of New Zealand scenery, in fact they are so prevalent, that with inhabitants and travellers they become symbolical of the country. The Tussock grass (Festuca), Flax (Phormium tenax), and the Cabbage tree (Cordyline australis), are symbolical of New Zealand. They prevail everywhere, are known by everybody; towns are named after them, and land is classed under this term—"Tussock land" and "Flax land" being common phrases.

THE TUSSOCK GRASS.—The Tussock occupies all open land, mountains denuded of forest, and thrives on every description of land, from the rich clays of the mountain flanks to the mere sprinkling of soil on dry shingle (gravel) beds. The Canterbury Plains of the Middle Island were originally all covered with this grass, and although great strides have recently been made in breaking up the land for cultivation, the stretch of "Tussock," over 2,000,000 acres of alluvial plain, seems almost unbroken. These plains constitute the great Wheat-growing district of the colony and are quite marvellous in their fertility, often yielding from 40 to 80 bushels of grain to the acre. This production has however more to do with the suitable climate for Wheat growing than the soil, for often there is not more than 2 to 4 inches of soil resting on shingle. Unfortunately the Tussock grass is unfit for animal food, and as yet cannot be turned to any profitable acccount, although naturally so abundant. This necessitates the destruction of the Tussock and the sowing of English grasses, which have now spread all over the country.

THE NEW ZEALAND FLAX.—Phormium tenax, the Flax Lily of New Zealand, is very characteristic of these parts, being limited in distribution to this country, and its adjacent islands. The plant has a stunted and thick rhizome, very much branched, and produces its leaves in tufts with an enfolding vernation. Each fan possesses on an average five leaves in good condition, the external ones dying and forming vegetable humus, as the new leaves lengthen out. The leaves often attain to a length of 10 feet and 8 to 9 inches in width. The inflorescence is in the form of a large panicle, from 5 to 15 feet in length, bearing flowers of a reddish-brown and yellow colour, resembling in shape a distorted Gladiolus. An extraordinary quantity of a sweet secretion is contained in these flowers, which supplies an almost inexhaustible amount of food to bees. Children are very fond of sucking the flowers for the "honey," as it is called. As the perianth withers the ovary developes into a dry leathery capsule over 2½ inches long, packed full of flat and glossy black seeds. This plant comes to its greatest perfection when growing in rich soil on the banks of a stream of water; in some parts it monopolises thousands of acres in one patch. Land covered with Flax is very rich land, and when cleared and drained will produce anything and retain its fertility for years. A light clayey black peaty soil resting on a bed of stiff but rich clay is generally the description of land where Flax predominates. This clay, when brought to the surface and pulverised by atmospheric influences, and mixed with the peat and vegetable matter which has accumulated for generations from the flax, makes a soil easily worked, very prolific, and wonderfully adapted for the growth of vegetables.

Whilst upon this subject of land I will allude to a rather peculiar occurrence which I have often noticed on "Flax land," namely, the existence of submerged forests or vast accumulations of drift wood, forming a complete stratum beneath the peaty topsoil and clay subsoil. In the Canterbury Province this is very common, especially in and around the city of Christchurch, where, on making a post-hole, one frequently comes upon a bed of timber in a half decomposed state. In some places Flax land, after having been cleared of Flax, is found to be impossible to plough, owing to the presence of this timber near the surface. That they are in most cases buried forests is evident from the stumps, with their ramifying roots, just as they grew. It seems as if vast torrents of water charged with earthy matter swept down from the Southern Alps, smashing everything in its way, and leaving a deposit of clay (mud) over the wreck of vegetation sufficient to destroy arboreal life, for where these extensive forests existed in not a very remote period there is now no sign of such vegetation, the whole being one vast plain destitute of trees. This timber is easily recognised, and is the same as that which now forms the "bush" of New Zealand. But we must return to our study of the Phormium tenax. This plant is found in all localities, from the low-lying swamp up to the tops of the mountains, out on the bleak and open plain and in the warm and shady forest. This diversity of situation gives, as a matter of course, a great number of varieties or forms, which some botanists have elevated into species. This, I think, is a mistake, and it would be a difficult matter to prove the existence of more than one distinct species of Phormium. There are, no doubt, several well marked varieties; but my experience is that the best of them has a tendency to assume, under cultivation, the parent form of tenax.

The great value of this noble and ornamental plant exists in the exceedingly tenacious fibres of the leaf. Next to silk it produces the strongest fibre of all plants, and but for the gummy substance present in the leaf, which causes the fibre to be liable to decomposition when exposed to water, it would be of universal value. As yet it is difficult to extract the bitter gum without injuring the strength of the fibre, but before long it will, no doubt, be accomplished. Even with the present imperfect appliances and mode of preparation New Zealand Flax makes excellent ropes and other articles in that line; therefore, when greater perfection in dealing with the fibre is attained a great demand for this hitherto neglected plant will be the result. Then the negligence everywhere displayed in this colony in regard to native products will bear its own fruit in having to replant what has been ruthlessly destroyed. This plant has been established in the Azores, and on the Pacific coast of the United States of America, where the cultivation of it for economical purposes is being pursued. The mountain variety or form of it would, no doubt, be perfectly hardy in England. I do not know if this variety has been tried.

THE CABBAGE TREE, as the settlers call Cordyline australis, is perhaps even more emblematic of this colony than the former plant. It is a favourite with everybody, and can be seen in all gardens and in all parts of the country growing wild. There is a something in this style of plant which creates a pleasant feeling in the observer. The distinct form and habit, marking it out from the general run of vegetation, seems to give an oriental or subtropical appearance to its surroundings. In effectual gardening I know of nothing which can surpass in striking beauty a large clump composed of Phormium tenax and Poa conspicua, or better still, the Pampas-grass, with fully developed plants of Cordyline australis giving height to the centre. In many parts of this land we meet with old veterans of this plant with over a dozen branches, each branch terminating in a head of foliage, the whole plant looking more like a large Pine tree in the distance than an endogen. Often these stems are over 40 feet high, with a trunk which would do credit to many forest trees. Its natural soil is a rich clay, almost impervious, and its general situation is upon hillsides, although often it occupies clay land in the vicinity of rivers, and occasionally out on the open plain. Dracæna indivisa is not so common as the above species, from which it is distinctly separated by the bold, broad, and glaucous foliage, which often exceeds 4 feet in length and 5 inches in width. It does not attain the height of australis, and has not the tendency to branch.

There are two or three other species of this family indigenous to New Zealand, but these two are the most prominent in every sense, and as my object is to convey a general idea of the vegetation in this country, will suffice for my present purpose. *Christopher Mudd, Botanist and Plant Collector.*

ORCHIDS FOR AMATEURS.

(*Continued from p. 589.*)

THE cultivator must remember that the conditions in a greenhouse or stove are artificial, and there are some facts which every gardener ought to understand perfectly, but which are nevertheless often misunderstood. The most important point to be remembered is, that warm air takes up much more moisture than cold air. Every one who has much practical experience knows how the plants are liable to be scorched and shrivelled on a frosty night by what is called fire-heat. The reason of this is, that the warm air from the pipes dries the plants, and it is dried in turn by contact with the cold glass, which robs it of its moisture. The cold glass acts as a condenser. The moisture is all soon drawn out of the pots in this way, and the plants are dried as if they had been in an oven. The remedy is always to sprinkle the floors and benches when the difference of temperature inside and outside the house is very great. No damage ever arises from this, as all the extra moisture soon runs out through the laps of the glass.

Orchids are, with some exceptions, plants which require a moist atmosphere; and in cold weather, if the air is kept pleasantly moist, very little water to the roots is needed, just enough to keep the sphagnum green: many, when resting, should not be watered at all, but very few flourish in a dry atmosphere. Some people use a wet and dry bulb thermometer to guide them, but I confess, as an amateur, I do not know its advantage. I adopt a much simpler method, and one which never fails with me. I keep a few pots of Maidenhair Ferns in the houses, the kinds must be suitable for the temperature. In winter especially, if I find any of the leaves scorched, I know the house has been too dry, and I find that if the Adiantums grow and do well, the Orchids do well also. Orchids do not show the effects of mismanagement at once, but no plants are perhaps so sensitive as the Maidenhair Ferns so I use them as vegetable policemen to tell me at once if anything is wrong in the atmosphere of the house.

My experience is somewhat at variance with what I have read in books, as I always find more damage is done by excess of moisture in the air of the house in summer than in winter. Unless the ventilators are open the air is then very liable to get over moist, and much damage is always done by this condition. It is obvious that the steam is condensed very slowly by the glass in close hot weather, so that unless the top ventilators are left open I do not like too much water on the floor or in the evaporating pans at night. The air should be much drier when the temperature of the house is lower, no doubt, and of course much less water is needed in winter than in summer, but the changes of extreme dryness of the air are far greater in winter. It can rarely be dry in summer as so much water is being used. I never saw plants damaged by dry air in the summer when the ventilators have been closed, and with ordinary care there is no danger of the air becoming too moist on a winter's night, although there is great danger of its becoming too dry in winter and too moist in summer. This may appear a paradox, but it is simple enough when we bear in mind the very great condensing power of the glass in winter and its slight action in summer, and that much water must be used in summer and very little is required in winter. All this holds good with ordinary plants in a warm greenhouse, but it is manifest that in a stove the danger from the want of moisture in winter and its excess in summer is very great indeed.

A drip from the roof is a fatal enemy to all plants, as the water is often ice-cold in winter, and it is always cold. Orchids are more damaged perhaps than most plants by drip, and the moist atmosphere of the house is very liable to produce drips unless the roof is steep; a high-pitched roof is, therefore, almost a necessity. My roof slopes at an angle of 36° with the horizon, but if I had to build it again I would make it 6° steeper.

Moisture on the glass is no use to the plants, as scarcely any, if any, evaporates into the air of the house. When I first started I always used to think that if the glass were moist the air would be sufficiently damp, but I soon found my mistake; the moisture is always being deposited on the glass, and it does nothing to keep the air moist. I should not perhaps have made this discovery by growing Orchids, but with plants with delicate leaves the effect of dry air with moist glass is seen at once.

INSECT ENEMIES.—One of the greatest enemies a gardener has to contend with is thrips. Every one has seen good collections of plants ruined by it. I have often been consulted about it. I never get thrips in any numbers, and have never used any insecticide, not even tobacco. If I see signs of thrips I at once put it down to mismanagement. The air is too dry if plants in a suitable temperature are affected, but if only one or two plants get thrips I generally find it is due to their being kept too warm. My rule then is to remove the plant to a cooler place, to wash its leaves with warm water and soap, and all goes well. I am not in the least afraid of thrips.

Red-spider, like thrips, means too dry an atmosphere, but I never get red-spider now, and do not believe I ever shall if I keep the air in a proper condition. Another great enemy is the greenfly—aphis. Like thrips it is only a sign that the plants are mismanaged—usually that they are kept too warm.

There is another insect-pest closely allied to greenfly—scale. Keep them under by destroying them. I always wash them off. They rapidly increase, and then they render unhealthy and disfigure plants to a great degree. I do not know that they are a sign of anything but carelessness. *B. T. L.*

(*To be continued.*)

The Flower Garden.

THE SPRING PLANTS have this season had a very favourable time for establishing themselves thoroughly before being checked by frosts; they have already made vigorous growth, and the beds are not only well covered, but many of the plants, such as Aubrietia, Daisies, Palyanthus, and Violas, are already quite gay with bloom. Owing to the dry state of the soil the bulbs have this autumn been planted under exceptionally favourable circumstances, there should, therefore, be but few vacancies through the bulbs decaying by having absorbed too much water before the commencement of growth. Should the weather set in frosty, provision should be made for the protection of the tenderer subjects by mulching the beds over with some light material which will not only prevent the surface roots from being destroyed and the plants lifted out of the ground, but will also be unobjectionable to the eye. There is nothing which answers for this purpose better, and which is less objectionable, than well decayed leaf-mould. It should be sifted so as to remove any sticks or stones, and then be placed between the plants and worked in lightly with the fingers, this mulching not only affords security, both to bulbs and plants, from frosts, but when they recommence to grow in the spring they root into it very freely, when it affords additional support at a time when most needed. Should the garden be situated in an exposed position further protection is sometimes required by the plants in the severest weather, but this need only be of a temporary nature, to be immediately removed as soon as the danger is past; for this purpose there is nothing more suitable and convenient than common Laurel branches: these should be about 2 feet long, pointed at one end, and stuck in the beds at intervals of about 1 foot or 18 inches, taking care to place them in firmly and in a sloping direction from the wind that is most injurious. By these means I have often saved tender plants from injury while others unprotected have been totally destroyed. At this littery season every means should be used to keep the garden as clean and neat as possible, for however well a garden may be planted, and however satisfactory it may be in other respects, unless thorough cleanliness be maintained at this season, it will be disappointing and cheerless.

SUMMER BEDDING PLANTS will now require attention. Those plants which have hitherto been protected in cold frames will be safer if removed either to heated pits, vineries at rest, or other structures where frost can be excluded, and, what is equally important, where damp can be expelled. A little artificial heat used occasionally with free ventilation will prevent damping off and at the same time preserve the plants in a sturdy healthy condition. The old plants will require but little water after they have become established in their pots, but the young plants in store pots should not be allowed to get dust-dry, otherwise they will suffer considerably. Verbenas at this season require careful attention; when kept in cold frames they are often subject to mildew and are also apt to damp off for want of free ventilation, and when preserved in drier structures they frequently suffer from the attacks of thrips and aphides. To remedy the two former evils, a drier atmosphere should if possible be maintained with the free use of sulphur; and to destroy the latter occasional fumigations must be resorted to. The whole stock should be frequently picked over, so as to remove any decaying matter which would prove injurious to them. Calceolaria cuttings, whether in pots or planted in cold frames, will, if now struck, simply require protection from frost, with abundance of air at all times when it can be given; they should not, however, be allowed to get too dry at the root, otherwise they will shrivel.

BULBS AND TUBERS.—Gladiolus are unusually late in ripening this year, many of them still being quite green and succulent; these should still be allowed to remain undisturbed; they should, however, have a protection of leaf-mould or ashes placed round their stems and over the surface of the beds, so as to protect them from cold. In many instances, when left in the ground through the winter, they are destroyed by rain running down the holes around the stems made by being blown about by the wind; and should frost immediately ensue the bulb becomes encased in ice, and decay quickly follows. This evil cannot occur if the precautions advised be adopted in time. Where the foliage is already decayed they should be taken up at once.

DAHLIAS, SALVIA PATENS, and all similar tubers should be packed closely together in shallow boxes without any covering, and stored in a dry shed or cellar, where frost cannot enter; this treatment will also suit the largest tubers of Begonia, but when small or rare varieties, they should be wrapped in dry moss and placed in paper bags or clean pots.

THE LAWN.—As the deciduous trees are nearly denuded of their leaves a thorough clearance should now be made. They should first be raked up and carted away, and afterwards, when sufficiently dry, the lawn should be well swept and rolled; if also a slight dressing of finely sifted fresh slaked lime be given, the condition and appearance of the grass will be greatly improved, not only by the destruction of moss, but also by the prevention of worm-casts, which are so objectionable on the surface during the autumn and winter seasons. If done just before rain falls, no disfigurement to the lawn will be perceptible. *T. S. C.*

The Kitchen Garden.

THE glass having registered 12° of frost with me points to the necessity of being provided with a good supply of Fern or other material to protect ridges of Celery, Endive, and young Lettuce plants which are growing in warm situations out-of-doors, also those under handglasses and in pots and frames, whenever the appearance of the sky indicates the approach of frost. Complete the earthing-up of late plantings of Celery and Cardoons, so that as much of the stems as possible, consistent with keeping the soil out of the hearts of the plants, may be covered with the soil. Get all vacant pieces of ground manured, dug or trenched, in readiness for early plantings of Peas and Cauliflowers. Weed and roll walks, and remove forthwith to the rubbish-heap any useless Cabbage, Cauliflower, and Broccoli stumps.

FRAME GROUND.—Abundance of air should be given to the subjects in this department in the absence of frost and snow—I mean the young Lettuce and Cauliflower plants for spring planting—to ensure a sturdy growth. Look over the established plants of Endive and Lettuce, and remove any decaying matter that may be adhering to them, destroying any slugs that may be found.

FORCING DEPARTMENT.—Another frame of Asparagus should be got in at once. Give sufficient air to beds in bearing so that the "grass" does not become drawn; and cut the same as soon as it reaches 6 or 7 inches in height, and stand the butt ends in a saucer of water and out of the reach of frost until required for use. Another batch of Seakale and Rhubarb roots should be got into the Mushroom-house or wherever they are forced. Failing these, the root-stocks should be covered with pots or long boxes, and these covered with 3 or 4 feet thick of Oak or Chestnut leaves. The present is a good time to put Potato sets of the Ashleaf and other forcing Potatos into pots or boxes embedded in leaf-mould, starting them in a little heat, to be planted later on in the hotbeds, when they have made 2 inches of growth. Sow small salads at short intervals, covering with a board for a day or two until the seeds sprout; and see that successional beds of Radishes are attended to in the way of airing and watering. Stable dung (including the horse droppings) and leaves in about equal quantities should be thrown together, and turned over a couple of times in the course of a week or two to sweeten, wherewith to make up hotbeds for Potatos, Carrots, Radishes, &c., about the middle or third week in the ensuing month. Keep a good supply of rich soil on hand in a shed in readiness for sowing and top-dressing French Beans and other purposes connected with this department. *H. W. Ward, Longford Castle.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec 1	Sale of Dutch Bulbs, at Stevens' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms
TUESDAY,	Dec. 2	Sale of Established Orchids, at Protheroe & Morris' Rooms, Sale of Camellias, Roses, &c., at Protheroe & Morris' Rooms.
WEDNESDAY,	Dec. 3	Sale of Hardy Plants and Bulbs, at Stevens' Rooms. Sale of Lilium auratum Bulbs, at Protheroe & Morris' Rooms. Sale of Nursery Stock at Lay's Nursery, Hampton, by Protheroe & Morris
THURSDAY,	Dec. 4	Sale of Imported Orchids from Messrs Shuttleworth & Co., at Stevens' Rooms Sale of Dutch Bulbs, at Protheroe & Morris' Rooms
FRIDAY,	Dec 5	Sale of Imported Orchids, at Protheroe & Morris' Rooms. Sale of Hardy Plants and Bulbs, at Stevens' Rooms
SATURDAY,	Dec 6	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.

THE APPLE CONGRESS of last year will long remain in the pleasant remembrance of those who were privileged to take part in it. Organised, so to speak, on the spur of the moment, it was taken up with spirit by executive and exhibitors, and brought to a most successful conclusion. It is most difficult for a society, or for anybody who caters for public taste, to form an idea beforehand what is likely to take with the public. Happy indeed is he who by instinctive tact or tried experience has attained this knack. In the present instance we do not think the most sanguine promoter ever dreamt of the success which this great Apple show was destined to obtain. It was, of course, felt that the professional interest would be great, but no one could have foreseen the crowds of amateurs who flocked to Chiswick to see the Apples, and not only to see but to examine and compare. Very pleasant was it to see our friends from the country, basket on arm, anxiously scanning the fruit and comparing it with the samples brought for comparison in their own baskets. Early in the proceedings it became apparent that to gain the full advantage of such an unrivalled display, and to turn it to its utmost educational value, a full report must be drawn up for use in the future. Such a report we have now before us, under the modest but expressive title of *British Apples*.* The lion's share of the work of arrangement fell to the Superintendent of the Chiswick Garden, and a similar portion of labour has befallen him now in the preparation of this report.

The preface details the origin of the exhibition, and gives some particulars as to the number of exhibitors. These were from almost every county in Great Britain—only two, however, hailing from Ireland: a circumstance to be regretted, but one which it is to be hoped will not be attributed as blame to base Saxons or canny Scots. The total number of exhibitors, it appears, was 236, who contributed an aggregate of 10,150 separate dishes of Apples, 913 coming from Kent, Middlesex yielding 908, Herefordshire 294, and others less numbers.

A circular was sent to each exhibitor asking for information on the following points:—The number of sorts exhibited, the situation where grown, sheltered or otherwise; the character of the soil and subsoil; the stocks on which grafted; the form of the tree, bush, standard, or cordon; the names of the sorts, culinary or otherwise, best suited to the particular district, and so forth.

Provided with this information, Mr. BARRON has succeeded in condensing it so as to comprise it within moderate limits, and has added a record of the careful observations taken by himself of each exhibit. The number of different names applied to the Apples exhibited amounted to 2020, those admitted as presumably distinct being 1545—a much larger number of distinct varieties, and a much smaller number of synonyms than might have been anticipated.

* *British Apples*. Report of the Committee of the National Apple Congress, held in the Royal Horticultural Gardens, Chiswick, October, 1883. Compiled by A. F Barron. Macmillan.

The record of exhibits is grouped according to the counties from which they came—thus, Southern Counties, Eastern Counties, Midland Counties, and so on. To give further illustrations, we may say that under the head of Berkshire it is stated that there were four exhibitors and 318 dishes. For each of the four exhibits the following details are given:—Name and address of exhibitor, number of varieties exhibited, observations made on the exhibit by Mr. BARRON, and exhibitors' remarks, detailing the character of the soil and other particulars. A selection of Apples suited to Berkshire is then given, and the same plan is followed for every county. It will be seen, then, that these pages contain in abstract a variety of most valuable information. We could have wished that some means could have been devised to supply an index to these remarks of the exhibitors and of Mr. BARRON; for instance, it is difficult to find without much labour how Cox's Orange, or any other sort, behaves in reference to fertility, liability to canker, &c. An index would have supplied this deficiency, but we must own we should have shrunk from so formidable a task. Nevertheless, the fact remains, that a large portion of the most valuable information in the whole report is rendered difficult of access by this defect.

A very important feature consists in the tabular arrangements showing the result of the poll of varieties selected for cultivation in each group of counties. A general summary for Great Britain is also given, founded on the votes of 130 exhibitors. King of the Pippins heads the list of sixty dessert Apples with ninety-eight votes, Cox's Orange follows with eighty-nine, Ribston comes third with seventy-eight, and so on down to Pearson's Plate, which only polled three votes. Of sixty culinary Apples Lord Suffield heads the list with 101 votes; Dumelow's Seedling comes next with ninety-three; Keswick Codlin third, with eight-four votes; and so on to Catshead, which polled only three votes. It is clear from this analysis that we have here a very valuable indication as to the best sorts to plant as a general rule, though, as Mr. BARRON properly remarks, many excellent Apples received few votes simply because their merits are as yet unknown to the mass of growers: such are Pearson's Plate, Grenadier, Lane's Prince Albert, Bramley's Seedling, Frogmore Prolific, Lady Henniker, Golden Spire, Schoolmaster, &c. The most popular Apple was Lord Suffield, which received 101 marks out of a possible 103, King of the Pippins coming second, with ninety-eight.

The most popular dessert Apple in England is Cox's Orange Pippin, but it is evidently not so much known in Scotland, perhaps because unsuitable for the climate. With this exception we are told the varieties selected as most suitable for the north are held in like appreciation in the south. "Thus," in the words of the report, "the varieties of Apples that are really worthy of cultivation may be reduced to comparatively narrow limits." The committee propose to discard as too small Sam Young, Golden Harvey, Lamb Abbey Pearmain, Court of Wick, Redleaf Russet, Guernsey Pippin, Downton Pippin, and to discard all those culinary Apples which fall below their standard of large Apples—*i.e.*, 3 inches and upwards in diameter. This proposed disenfranchisement will certainly not be carried out, and we may add no process of the kind should depend on mere size. Specific gravity (*i.e.*, the weight in water), and a rough analysis of the juice as done in the cider-making counties would furnish a far more acceptable basis for disfranchisement than mere size.

The last part of the volume is taken up with a descriptive catalogue of all the Apples exhibited, drawn up by Mr. BARRON. No attempt is made to arrange the Apples in classes, the alphabetical arrangement, with all its sweet simplicity, being adopted; hence, if one does not happen to know the name of any particular Apple beforehand, it is impossible to get any information about it from this book. We do not wonder that Mr. BARRON has shrunk from the task of forming a classified list, for we are bound to say, after repeated trials, that such devices break down so often under trial that they are of little use except to their framers. Of course, this is what every naturalist would expect to happen. It occurs in any and all systems of classification—even the most natural, much more so in one based on characters derived from one organ only, and that the most variable in the whole tree. Hence we think Mr. BARRON has been wise in not attempting the impossible, at the same time he has given a very useful digest from a practical point of view, by giving indications of the purpose for which Apples are cultivated viz.:—1, dessert, kitchen, or cider-making; 2, the season of ripening—first early, early, mid-season, and late; 3, the size arbitrarily fixed as "small" when under 2 inches in diameter, "medium" when from 2 to 3 inches, and "large" when above 3 inches in diameter. As to form, Mr. BARRON adopts the following:—"Globose," when breadth and height are about equal; "oblong," when the height is greater than the breadth; "flat or oblate," when the breadth is greater than the height; "conical," tapering from base to apex; and "ovate," when the fruit tapers to both ends. These forms may be illustrated by reference to the outlines we give at figs. 120, 121, 122. The surface of the fruit is described as angular, ribbed, or even; the colour as green, yellow red, orange, or russet, streaked or flushed as the case may be. Of course a large margin must be allowed for variations, as we all know how much form, colour, size, differ even in fruits from the same tree, and still more often as the effect of grafting on different stocks, as illustrated at fig. 120.

It would have added greatly to the value of the catalogue had reference been made to the figures in the *Herefordshire Pomona*, LEROY'S *Dictionnaire*, the very numerous figures given in these columns, in those of our contemporaries, or other generally accessible books; but this is not vouchsafed even in the *Fruit Manual*.

We shall have frequent occasion to refer to this report, the value of which is so great as to reduce the trifling defects and errors we have noticed to an almost infinitesimal degree—far too small to cast a shadow on this very useful publication, by the issue of which Mr. BARRON has once more laid the horticultural public under a debt of gratitude.

—— ROYAL BOTANIC SOCIETY.—At a meeting of this Society held on Saturday, Mr. J. P. GASSIOT, Vice-President, in the chair, the following candidates were balloted for and elected Fellows of the Society:—Mrs. Bourne, Mrs. F. B. Howell, Mrs. Kaye Knowles, Mrs. Legg, Mrs. Martyn, Mr. E. T. Sturge, Mr. W. H. Symons, and Mrs. Chapman.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are glad to see that the gardeners of the kingdom are showing their earnestness in the matter of so augmenting the reserve fund of this useful Society as to secure an augmentation of the meagre pensions at present bestowed. It has been a matter of reproach hitherto that so large a number of the rank and file have manifested indifference and allowed themselves to be so much dependent on the generosity of outsiders. If the shillings of the gardeners come in in their hundreds, as they ought to do, there is little fear that the aid of those more largely endowed with means to promote the welfare of the aged and infirm will be continued as heretofore. A munificent offer of £500 is promised, on condition that a similar sum be raised before the end of the year, hence the appeal now made, which we confidently hope will be adequately responded to.

—— Red Spotted Potatos.—On examining the Potatos earthed-up on the Jensenian plan, at Chiswick, many tubers were found to be spotted internally with reddish-brown, no symptom of the disease being visible at the surface. A large propor- of certain crops both in Yorkshire and Norfolk has this autumn been found to be unsaleable from this cause, in consequence of the impossibility of detecting this disease externally. The Scientific Committee of the Royal Horticultural Society would be glad of any information on this subject, especially as to (1) the amount of crop thus diseased, (2) the character of the soil, (3) nature and quantity of the manure used, (4) whether early or late varieties are most attacked, (5) name of the varieties most affected. The disease appears to be quite distinct from the ordinary "Potato disease," from which it must be carefully distinguished. Communications are requested to be sent to Rev. G. Henslow, Drayton House, Ealing.

—— Fertility of Double Daffodils.—Regarding this question, the following letter from Mr. W. Brockbank to Mr. J G. Baker, of Kew, which was read at the Linnean Society on November 20, may be of interest :—"On April 2 I had the pleasure of exhibiting to the Society a number of prepared specimens of the Daffodil, which appeared to prove that double Daffodil flowers might produce seeds, and I advanced some arguments, based upon the observations I had made, to show that they were



Fig. 119.—Arisæma fimbriatum : leaf, spathe, and floral details. (see p. 680.)

spread over wide areas in a wild state of seeding. The specimens showed the seed-vessels filled with ovules; but this did not fully prove that ripe seeds capable of germination would be matured. I, therefore, carefully observed a number of flowers of double Daffodils (Narcissus telamonius plenus), and marked them as they went out of bloom to prevent any mistakes. One of these produced a capsule containing nine shining black seeds, which were gathered June 24, and at once sowed in a pot, and covered with a sheet of glass. Of these seeds four have already germinated, and show grass-like growths an inch above the soil. This, therefore, completes the proof of what was previously advanced."

—— LINNEAN SOCIETY.—Papers will be read on Thursday, December 4, at 8 P.M., on "The Motion of Trees and the Continuity of Protoplasm," by ALFRED TYLOR; and on "Heterolepidotus grandis, a Fossil Fish from the Lias," by JAS. W. DAVIS.

—— CINCHONA LEDGERIANA AS A SPECIES.—Mr. E. M. HOLMES read a paper before the Linnean Society on Nov. 20, wherein he expressed the opinion that under the name of C. Ledgeriana a number of varieties or forms, and probably some hybrids, of Cinchona calisaya are now under cultivation in the British Colonies. He believed that if more attention were paid to the characters afforded by the bark of the trees, taken in conjunction with the other botanical characters of flower and fruit, these varieties and hybrids would be more easily defined and recognised. He considers that the plant published under the name of C. Ledgeriana by Dr. TRIMEN was probably referable to WEDDELL'S Cinchona calisaya var. pallida as a horticultural form, for which the author proposed the name Trimeniana.

—— TULIPA BREYNIANA, *Baker*.—A coloured figure of the Tulip described in the *Gardeners' Chronicle*, vol. xviii., p. 8, and vol. xx., p. 233, is given in the *Botanical Magazine*, t. 6786.

—— LARGE LILIUM AURATUM BULBS. — These big bulbs appear to be getting anything but rare, so well is their cultivation now understood, and so very fine do they grow in a few favoured localities. We had for our inspection a good specimen from the Messrs. WATKINS & SIMPSON, seedsmen, Exeter Street, Strand, that had a weight of 24 oz. and a girth of 16 inches.

—— COVENT GARDEN SALESMEN. — A correspondent complains that he sent up for sale, in consequence of an advertisement in these columns, 165 dozen of cut flowers of Carnations, at various dates in August, for which he obtained only a few shillings. The salesman, interrogated as to this unsatisfactory result, attributes the small sums paid to the fact, as he alleges, that in some cases the flowers were not delivered till after the market closed. In consequence they were unsaleable. Others are stated not to have been sold because they were badly packed, of inferior quality, or that there was no demand for them, and this in spite of the continuance of the advertisement requesting flowers to be sent in any quantities. We cannot be answerable for what is stated in advertisements, nor have we any means of testing the validity of the statements made. It seems to be, like so many similar ones, a case in which the precept, *Caveat venditor*, might profitably be followed.

—— PINGUICULA HIRTIFLORA, *Tenor*. — A mountain species with tufted oblong leaves, and erect peduncles, bearing lilac spurred flowers, each about two-thirds of an inch in diameter. It is a native of South Italy, various parts of Greece, and the Balkan.

—— ARAUCARIA IMBRICATA.—On the grass near the T range, Kew, there is an old specimen of this tree, introduced by A. MENZIES in 1796. There are taller and more symmetrical trees in the gardens, which are, moreover, less interesting, because more recently planted. It is a female, and bore cones as long ago as 1836. A woodcut of it, taken the following year, and given in LOUDON'S *Trees and Shrubs of Great Britain*, fig. 1985, exhibits a well-furnished and well-proportioned tree. Since then it has lost many of its lower branches—a fact doubtless due to the light and unfavourable nature of the soil. The tree is in cone at present, and although the yearly increase in height is unnoticeable, the lateral branches extend considerably, so that the top of the tree is broad and drooping. Not only position, but the soil and surroundings must be taken into account in planting this tree, and young specimens in pots cannot too soon be planted out so that the roots may extend freely, as many a fine tree has been blown down by the wind owing to the confined condition of the roots when young.

—— DRESSING FLOWER BEDS IN WINTER.—Mr. ANDREW TUER, the well known publisher, has called attention in an evening paper to the desirability of employing small shrubs in the London parks for the purpose of affording some relief from the monotony seen in flat surfaces of earth as presented in many beds planted with bulbs. It is a matter for surprise that whilst the use of small shrubs for the decoration of beds in winter should be so admirable a feature in some private gardens, notably at Heckfield Place, Tring Park, and elsewhere, yet that they should not be employed for similar purposes in our public parks. Perhaps it would not be so easy to keep many of the interesting forms of evergreens from year to year, and in a constant condition of disestablishment in the sooty atmosphere of London, but in any case a few thousands could be purchased so cheaply from the nurseries that a contract might well be entered into with some large firm to provide, say, several thousands of Conifers, evergreen and variegated shrubs, &c., of heights ranging from 12 to 36 inches, and in considerable variety, in November, and to remove them early in May. Such an arrangement need not be costly, and certainly our parks would be very material gainers. It would be undesirable that such shrubs should be employed merely as dot plants. Small groups of various kinds or intermixed in groups would be better, though some pretty plants might well stand out individually where a fitting carpet was provided. There is very much more of beauty and variety in form and hue to be got from evergreens than is commonly imagined, but in the securing of these elements, of course, very much depends upon the taste and knowledge of the planter.

—— ROMNEYA COULTERI.—A perennial Poppy, with deeply cut foliage, and flowers 6—7 inches across, delicate white, with numerous short yellow stamens. It is a native of California, of doubtful hardihood in this country, but its beauty is such that any little protection is amply rewarded. The plant is figured in the *Garden*, Nov. 8.

—— OUTDOOR CHRYSANTHEMUMS.—The season has been the despair of those who have to live by supplying the market with cut flowers. It has been most disappointing to find that Chrysanthemums in the open ground have been so good, fresh, and enduring that those under glass have had no advantage. Thus we have never had a season when bloom of this autumn flower was so abundant, and not a few growers have felt that, were such seasons to continue, growing bloom under glass would become a ruinous business. It would be unfortunate, however, were any thus despairing for the present to fail to provide for another autumn. We have had one truly grand Chrysanthemum season, but such another may not occur for a decade, or perhaps a generation. Never within the memory of man, may we say, has there been a November so dry, so devoid of frosts, and altogether so delightful. We can hardly hope to look upon its like again, and therefore it would be folly to rush to the conclusion that flower-growing under glass in November will no longer be profitable. Perhaps in one respect many growers have reason to blame themselves that they do but grow in bulk what all the world grows, hence they fail to find from a market glutted with Elaines, Madame Marthes, Marabouts, or other common kinds, the requisite returns. It is well worthy of consideration whether some considerable variation of kinds, especially in the way of rich dark and chestnut hues, would not prove more profitable. As a rule, one grower produces largely just what his neighbour has in abundance. That is a mistake, and the energies of market growers should rather be turned to the production of something good which others have not.

—— CLEMATIS GIPSY QUEEN.—This is one of the late summer-flowering varieties of the Jackmanni types, and it is deserving of notice, as it appears to flower persistently and until quite late in the season. There is a large collection of Clematis growing in the open ground against pillars in Messrs. SUTTON & SONS' London Road Nursery at Reading, and this is done in order to allow of a selection being made. Among the many varieties the one named Gipsy Queen stands out prominently because so continuously in flower. The lateness of the season may perhaps have something to do with the peculiar hue of colour, but it may be described as pale maroon, heavily flushed with bright purple; flowers of good form, and freely produced. It should be planted for late flowering.

—— IRIS HEXAGONA.—A very distinct tall showy Iris, native of the Southern United States, figured in the *Botanical Magazine*, t. 6786, from specimens flowering in the Cambridge Botanical Gardens. The leaves are green, the flowers more than 6 inches in diameter, falls violet, with a yellow spot, petals erect, narrow, violet.

—— TROPÆOLUM TUBEROSUM. — As late as Nov. 14 a line of this useful decorative species was in flower in Messrs. SUTTON & SONS' nursery at Reading. Planted out in early summer in a piece of ground that appeared to suit it a prodigious growth was made, followed by masses of bloom then untouched by frost. It is very free at Reading, and it does well as a specimen in the mixed border trained to a pillar. A line of this Tropæolum, with Scarlet Invincible Sweet Pea mixed with it, would make a charming line for summer blooming, and last for a considerable time in flower.

—— HELIANTHEMUM FORMOSUM.—A beautiful prostrate shrub, with small oblong acute hoary leaves, and flowers about 1½ inch in diameter, yellow, with a reddish-brown eye. *Garden*, Nov. 15, 1884. We are glad to see that attention is being drawn to this very beautiful but much neglected genus.

—— GLASSHOUSE DESIGNS.—Messrs. WRENCH & SONS, of Ipswich and London, have sent for our inspection drawings (registered and copyright) of garden structures, such as conservatories and greenhouses, that differ in style largely from the ordinary run of these things. There is evidence in some of the designs of a desire to return to the heavy woodwork of forty years ago, at least in that part which suffers the least from the elements—the upright sashes. This is of no advantage to the cultivator of plants during our long sunless winters, and is decidedly bad for herbaceous greenhouse plants. The designs for conservatories to be attached to the dwelling carry the idea of much cosiness, and possess many spots to retire to—in that way being great improvements on the bare straight-lined village school-room look of too many modern conservatories. To obviate the considerable amount of shadow heavy wood sash-bars and frames cause, large squares of plate-glass are found in some of the windows. The half lantern is a favourite method of ventilating in these plans, and it is a good one in houses facing south, as the upright portion is that which opens, and the air being stayed in its passage over the roof gets warmed before being let into the house. This upright side to the lantern appears to be about 2 feet high in some of the designs, and so fulfils still better the purpose of a barrier to air currents. It will add to the cost of houses to fix these superstructures, but as they have all the advantages of a wall that rises higher than the house, and are not an objectionable feature, they will find many to adopt them.

—— CRINUM LEUCOPHYLLUM.—A new Crinum from Damara Land, with a very large bulb, very stout, flattened peduncle, numerous whitish-green leaves, arranged in two ranks, and very numerous fragrant pink flowers, with long slender tubes and narrow segments half the length of the tube. BAKER, in *Botanical Magazine*, t. 6783.

—— RUELLIA MACROPHYLLA.—Under this genus is included a large assemblage of plants belonging to several genera, but varying greatly in minute particulars, but presenting no constant or reliable characters by which they might be thrown into sectional groups, far less into genera. The plant under notice belonged to the genus Stemonacanthus, which, like the rest, has been very properly cut down by the *Genera Plantarum*. The distinctions depending chiefly on the relative length and shape of the corolla tube varies from species to species. R. macrophylla produces long tubular scarlet flowers, with much exserted stamens in loose axillary cymes, and a well-grown

specimen is a conspicuous object. The shrubby upright stems attain a height of 3 or 4 feet, and after flowering should be cut back to induce a bushy habit, as well as encourage a free and vigorous growth. A good and characteristic figure of the plant is given in the *Botanical Magazine*, t. 4448, and flowering specimens may be seen in the Palm-house at Kew.

—— Vegetable Products in Ragusa.—Reporting on the trade and commerce of Ragusa, the British Consul says, that the plant most extensively cultivated in the country is the Kupus, a species of Cabbage, which forms the staple article of diet for the lower classes. The Kupus is said to be indigenous to Dalmatia. "Perhaps" it is said "it was this plant the cultivation of which Diocletian preferred to the exercise of imperial power." The plants last about three years after planting, growing high and forming long straggling stalks which continue year by year to send forth leaves as the first shoots are taken away. It is extremely nutritious and of good flavour. Next to the Kupus the Olive is the chief object of cultivation, and it is also the chief article of export. Last year was a very good one in Ragusa for the Olive. It produces its greatest crop every third or fourth year, and as there was an excessive crop in 1879, the subsequent crops up to the present year have been of inferior quality. It is on the Olive crops that the proprietor chiefly founds his hopes of a revenue. Common Olive oil fetches about 9*d.* a quart, fine oil from about 5*s.* The greatest part of the Olives exported from Ragusa goes to Trieste and some portion to Russia. The exportation of Chrysanthemum cinerariæfolium, the source of the celebrated Dalmatian insect powder, has very considerably fallen off and its cultivation has therefore received a check. The falling off of the foreign demand is believed to be owing in some measure to the plant having been cultivated elsewhere, but also in greater measure to the fact that many spurious imitations of the insecticide powder made from the plant have been thrown into the market, besides which the cultivators in Ragusa have been exporting the stalks of the plant for the purpose of reducing to powder, which can only be properly made from the flowers. The consequence has been that the reputation of the powder as an insecticide has decreased considerably in foreign countries.

—— Paris Daisies.—The capacity of the white Marguerite to bloom all the year round was exhibited on a splendid specimen plant exhibited at the little autumn show recently held in the Public Hall, Feltham, by Mr. Robert Newbury, of that place. This huge specimen, some 5 feet through, had been blooming continuously all through the year, and was then as full of flower as at any time. Not being subjected to heat, the plant is dense, bushy, and hard, and though some 5 feet through, is all wood, leafage, and flower. Naturally, it is very interesting to find such a specimen of the Chrysanthemum frutescens as this shown in conjunction with the autumn and winter blooming kinds. It would prove still more interesting to have examples of all the known cultivated kinds of the Chrysanthemum exhibited at once, if possible, for many people have little knowledge how extensive and representative is the group. By care it would not be at all difficult to have many of the annual kinds in bloom in November, and nearly all the perennial forms seem amenable to such culture as may ensure their being in bloom at the same time.

—— Grapes Ripened in Blue Paper Bags.—A correspondent residing in London forwarded for our inspection two small bunches of Grapes, which had been grown out-of-doors but a short distance from Hyde Park Corner. The colour of the one bunch was quite red, whilst the other had the normal black tint of the variety; the first, having been grown in a blue paper bag, had undergone a partial bleaching, hence the reddish colour; it was likewise sensibly deficient in sweetness—well-known results following a great deprivation of light and air. Paper bags of any colour, or those made of netting or muslin, should never be placed over fruit before it is ripe, or bad consequences invariably follow.

—— National Auricula, Carnation, and Picotee Society.—We have received a letter from Mr. Douglas in reply to Mr. Dodwell, in which he explains why he did not send Mr. Dodwell a copy of the minutes of the last meeting, and referring to other matters which will, in our opinion, be more fittingly dealt with at the approaching meeting, and which, therefore, in the hope of putting limits to an unprofitable and disagreeable controversy, we do not enter upon now. In the meantime, no one is likely to accuse either controverialist of being actuated by other than proper motives.

—— Late-blooming Plants in Scotland.—We have received from a correspondent (J. McLean, gr. to E. H. J. Craufurd, Esq, Auchenames, West Kilbride, Ayrshire) a box of flowers gathered in the open air on November 25. The following varieties were enclosed:—Antirrhinums, Fuchsias, Stocks, Mignonette, Pansies, Sweet Peas, Pelargonium, Calceolaria, single Dahlias, Chrysanthemums of sorts, Tropæolums, Centaurea candidissima, Gladioli, Lobelia, Anemones, Escallonia, Arbutus, and Larkspur, which plainly indicates the mildness of the season there up to that date.

—— Publications Received.—*Report of New York Horticultural Society.—Illustrations of British Fungi* (No. 27). By M. C. Cooke.—*Report of the Progress and Condition of the Government Botanical Gardens at Saharanpur and Mussoorie for* 1884.—*The Management of Plantations in Cumberland.* By W. Baty.—*The Peer and the Prophet.*—*Dick's Illustrated Monthly.*

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Nov. 24, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been cloudy or dull generally, with occasional showers of cold rain or sleet; towards the end of the period a good deal of fog or mist became prevalent. Lightning was seen at several of our northern stations during the evening of the 20th, while at Shields a thunderstorm was experienced. The temperature has been about equal to its normal value in "Scotland, E.," but below elsewhere; in most districts the deficit varied from 2° to 3°, but in "England, S.," it was 4°, and in "Ireland, S.," 5°. The maxima, which were recorded on different days in the various localities, ranged from 48° to 50° in most districts, while in "England, S.W.," the thermometer is reported to have risen to 53°. The minima were generally registered towards the close of the period, when the temperature fell to 21° or 22° in the east and south of England and over Ireland, and to between 25° and 28° in most other parts of the kingdom; in "Scotland, E.," however, the lowest reading was 32°, and in the "Channel Islands" 37°. The rainfall has been less than the mean in all districts. Bright sunshine shows a decrease in duration in "Scotland, N.," and the "Channel Islands," but an increase elsewhere. In "Ireland, S.," 38 per cent. of the possible number of hours was recorded, in "Scotland, W.," 34, in "England, N.W.," 30, and in most other districts 18 to 27 per cent., while in the "Midland Counties" there was only 14. Depressions observed:—During the whole of this period barometric pressure has been highest in the western part of our area. The only depression observed was one which, after travelling S.S E. from the west of Norway to Holstein on the 20th, changed its course southwards to the Netherlands, and subsequently S. or S.S.E. towards the Mediterranean. Under the influence of this disturbance the wind, which had previously been moderate or fresh from N. or N.E., increased to the force of a fresh or strong gale on all parts of our northern, eastern, and south-eastern coasts. As the depression disappeared from our neighbourhood, however, the wind gradually subsided, and during the last few days very light airs from the north-westward or northward were general.

—— Gardening Appointments.—Mr. H. G. Wilson, late Head Gardener to H. F. Spencer, Esq., Spring Grove, Bentley, has been appointed Head Gardener to H. H. Cochrane, Esq., Esh Wood Hall, Durham. — Mr. J. Churchill, late Foreman, has succeeded Mr. McIntosh as Head Gardener to J. Snowdon Henry, Esq., J.P., D.L., East Dene, Bonchurch, Isle of Wight.—C. F. Prangnell, formerly Head Gardener to the Kensington and Chelsea District School, Banstead, Surrey, as Head Gardener to the Holloway Sanitorium, St. Ann's Heath, Virginia Water, Chertsey.

VARIATION IN NYMPHÆAS.

Last January I recorded in the *Gardeners' Chronicle* (p. 87) some experiments which had been made at Kew on the fertilisation of Nymphæas, with a view to finally obtaining a coloured race of hardy Water-Lilies. During the past summer a large number of seedlings thus obtained were grown on and flowered, but not one of them has proved a good cross, nor even shown any characters that differed from the varieties we already possessed. All those seedlings which were the result of an attempt to cross the hardy species with some of the tropical blue and red species, had been obtained from seeds borne by the latter, as owing to the lateness of the season at the time the experiments were made, all the hardy Nymphæas at Kew were out of flower, and pollen had to be obtained elsewhere. Although every care was taken to prevent pollen either from the flower operated upon or from any other species growing near the plant in the same tank, and the pollen of the hardy kinds was dusted over the stigmas several times in the course of two days, yet none of the seedlings showed any of the characters of the hardy kinds, but appeared to be more or less exact reproductions of the mother plant. Failure may have been owing to carelessness of manipulation, or to the stigmas having been fertilised with pollen from the same or some nearly allied plant before the foreign pollen was applied. To me, however, it seems likely that the experiment failed owing to functional differences between the two species it was intended to cross. We have numerous instances of this refusal of two species of plants to unite for the production of a hybrid intermediate between the two, and in a large number of cases it appears to be impossible to bring about even fertilisation. Variations in colour and in form appear to be due simply to long cultivation rather than to hybridism. The absence of variability among plants that have been in cultivation for many years is most likely owing to the employment of other methods than seed raising for their propagation. In some instances seeds are not produced by plants under artificial treatment, and we are therefore compelled to rely on cuttings, division, or tubers for the multiplication of these plants. If, however, seeds were oftener employed for this purpose we should, according to Darwin, obtain greater variety among many of our garden plants than exists at present. In his *Origin of Species* Darwin says, "It seems pretty clear that plants must be exposed during several generations to the new conditions of life to cause any appreciable amount of variation." Of course these several generations must be through the seeds of each generation, as cuttings, &c., are, as it were, only a continuation of the same generation.

We have strong evidences of this tendency to vary among those of our garden plants which are propagated from seeds—in annuals more especially, and also in tuberous Begonias, Gloxinias, Chrysanthemums, and many other plants of perennial duration, but which are often propagated by means of home-grown seeds. In the plants named the wide range of variation in characters both of form and colour is due in the first instance to the varying or sporting of the first type, and we are told by Darwin that when a plant "has once begun to vary it generally continues to vary for many generations," and that "no case is on record of a variable being ceasing to be variable under cultivation."

It appears to me, therefore, that good cultivation and natural reproduction (*i.e.*, from seeds) must be looked to for changes in the colour and form of many cultivated plants. In Nymphæas we find the tubers, which are freely formed on the roots of most of the species, a much readier means of propagation than seeds, consequently the latter are rarely troubled about. In the case of our native Water-Lily it may safely be said that under cultivation the tubers are always relied upon for its propagation and increase. The conditions under which it is usually placed renders the safe germination of the seeds and the maturation of the seedlings practically impossible. I myself do not remember a single instance of the common Water-Lily having, when under cultivation, reproduced itself from self-sown seeds. Whether what is here advanced in regard to Nymphæas is correct must for the present remain hypothetical; but after paying some attention to what has been written on the subjects of variation and hybridity, it appears to me that hybridisation proper is of little or no avail as a means of causing variation such as we desire, but that the suggestions conveyed by Darwin's statements above quoted show us the surest way to obtain variety among Nymphæas and many other cultivated plants. *W. N.*

HOME CORRESPONDENCE.

The Committees of the Royal Horticultural Society.—Now that the time is coming when the constitution of the Committees for 1885 will be discussed, and probably new ones chosen, may I, as a wanderer, and sometimes a lost one, in the mazes of revolving committee systems, ask a few questions, praying for enlightenment from "those who know"?—1. Is the threefold body a good and satisfactory one? Does it do the work better than the original dual one did? 2. Wherein lies the improvement in forming three small instead of two large bodies? 3. Is it, or has it been possible, to class subjects for A. and B. committees without clashing? 4. Is the rumour true, that says certain plants have been attempted to be entered in section A., but told to pass on to B., that B. repudiatd them, sending them back to A., and that finally they were never adjudicated upon at all? 5. What is the objection to a large committee, and also a more mixed one? 6. Is it desirable that the committee should be a body of gardeners, or nurserymen, or amateurs, or enthusiastic florists, or market men, or gentlemen? 7. Does any one know how the committees are chosen, or by whom, and has anybody any suggestions to make on the subject? I ask the above questions, hoping for some light in my wanderings, which may result in good to horticulture, and ventilate the various views each may hold on the unsolved problem, "How best to form a committee?" *A Wandering Pleiad.* [The matter here brought forward is one of great importance, as it is clear that existing regulations do not work so well as they might do. In answer to the seventh question, it may be added that the Council appoints the committees. We may have more to say on the subject on another occasion; in the meantime, we should be pleased to learn the opinions of our readers. ED.]

The Gardeners' Royal Benevolent Institution.—Now that the Augmentation Fund is attracting so much notice, and it may be hoped is progressing satisfactorily, it may be as well to learn the opinions of some of the subscribers on the following point. It is proposed, should the required sum be obtained, to raise the pensions in all cases by £4, the men to receive £20 and the women £16, or in the proportion of five to four. Now, I suppose on the formation of the Society the amount was fixed on the presumption that a man's expenses are heavier than a woman's and that many men may have a wife to support, but that no widow can have a husband to keep, hence the proportion of £16 to £12, or four to three. Why should this proportion under the new arrangement be departed from? If the existing ratio be retained the amounts to be paid in future would be £20 and £15. Now, as the number of female pensioners is about fifty, a saving of £50 per annum would be effected, which would enable the committee to put on at least two more pensioners, which cannot be done if the proposed new rate be adopted. *J. W.*

The Narcissus.—I am an admirer of that charmingly pretty and deliciously scented flower, the Narcissus; but in the garden which I now have I fail to obtain that display of blooms which careful culture and attention merit. Quite 60 per cent. of the flowering spikes fail to unfurl their petals. If any of your more experienced readers can explain the cause and suggest a remedy I shall be a grateful recipient of their favours. *E. W. W.*

Tubular Boilers.—Mr. Groombridge (p. 628) asks if I can keep in my fires to heat the houses for 4*d.* per day, as he is now doing? No, I cannot do that, nor can I understand how he can. But firstly he says he does do so for 4*d.* a day, which would be 2*s.* 4*d.* per week, but which Mr. Groombridge makes about 12*s.*, or about five times as much. Our boiler, a saddle, heats 2339 feet of 4-inch pipe for less than 12*s.* a week, but that sum is exceeded in very severe weather, and very likely during warm days in summer the cost may be as low as 4*d.* a day. Has Mr. Groombridge made a mistake and given us the cost of firing during the day, omitting his banking up at night? If so, then I can understand, as in that case he would burn only 4*d.* worth of fuel a day and 1*s.* 4½*d.* in fuel at night, or rather more; he would still be about 12*s.* a week when he forces his choice flowers at Christmas. Mr. Groombridge then goes on to say he quite agrees with me respecting the setting of boilers. But in what way does he agree? He agrees by telling us he is entitled to be considered experienced because he has taken down and re-set his boilers seven times before they satisfied him. What I meant by experienced was not just such experience as Mr. Groombridge has had, as that cannot be called such. Can any man be considered experienced who has to reset his boilers seven times before he gets satisfactory work from them? I will admit that he has some experience of pulling down and setting up, but of a knowledge of hot-water circulation he must possess but little. The hot-water engineers in this locality would soon have to clear out if they so mismanaged their work of setting a boiler. The firm I named can set a boiler, and set it at once, and further, if the order is given in the morning within 20 miles of their place there is no fear of frost getting into the houses at night, as the boilers will be fixed and at work if need be. But as Mr. Groombridge's letter is in no way connected with "Yorkshireman's" question and is irrelevant to it, I hope you will pardon me for trespassing on your valuable space. *Thrumpton.*

Plants in Flower on November 10.—The number of plants in flower in the gardens at Shirenewton Hall, near Chepstow, at this date, was greater than I ever knew before, and perhaps the following list will be interesting:—

Agathæa cœlestis
Ageratum mexicanum
Aconitum sinense
Alyssum saxatile
Anemone japonica, and vars.
Agrostemma coronaria
,, ,, alba
Androsace lanuginosa
Antirrhinum majus
Arbutus Unedo
Aster ericoides
,, pendula
,, undulata
,, paniculata
,, lævigata
,, horizontalis
,, Novi Belgii
Aubrietia Hendersoni
Bidens Zimapani
Boltonia latisquama
,, glastifolia
Bellis perennis, and double vars.
Borago officinalis
Clematis Lady Bovill
Chrysanthemum lacustre
,, segetum, and vars.
,, coronarium, and vars.
Coreopsis lanceolata
Calandula officinalis (× Meteor)
Chrysanthemum (Japanese, pompon, and large-flowered)
Cheiranthus Harpur-Crewe
,, double (Wallflower)
Campanula pyramidalis and alba
,, Hosti and alba
,, Van Houttei pallida
Centaurea rosea
Convolvulus mauritanicus
Corydalis cava
C ocus autumnalis
Dianthus fragrans
,, caryophyllus
,, barbatus
,, Marie Parc
Delphinium Schyml
,, magnificum
Digitalis grandiflora
Dahlia, single (in great quantity)
,, double
,, glabrata
,, gracilis
,, Juarezi
Erica carnea
,, mediterranea
Erodium Manescavi
Eryngium Riversii
Fuchsia gracilis
,, microphylla
,, pumila
,, Riccartoni
,, hybrid vars.
Gaillardia grandiflora
,, hybrida splendens
Geranium Endresii
,, striatum
,, phæum
Grindelia grandiflora
Gladiolus, hybrid vars.
Gazania ringens
Hedysarum coronarium
Helianthus lævigatus
Hesperis matronalis
,, ,, purpurea plena
Hypericum tomentosum
,, calycinum
,, patulum
,, reptans
Ipomœa jalapa
Linum flavum
Lobelia erinus
Lupinus nutkaensis
Lythrum alatum
Lychnis vespertina plena
Linaria purpurea
,, reticulata
Lamium album
,, aureum
Lathyrus odoratus
Myosotis dissitiflora alba
Meconopsis cambrica
Mimulus cardinalis
Monarda didyma var.
Nasturtium officinale
Nymphæa odorata
Œnothera Lamarckiana
Onosma taurica
Papaver alpina
,, ,, alba
,, ,, (orange-scarlet)
,, nudicaule
Pentstemon (hybrid)
,, azureum
Phlox ovata
,, coccinea, &c.
Primula floribunda
,, obconica
,, sikkimensis
,, capitata
,, acaulis, and vars.
Prunella Webbiana
,, alba
Pyrethrum corymbosum
Roses, many hybrid perpetuals
,, Tea
,, China
,, Noisette
Rudbeckia speciosa
,, subtomentosa
Salvia patens and alba
,, lupinoides
,, Horminum
,, Tenori
Schizostylis coccinea
Sedum Sieboldii
Senecio pulcher
Sternbergia lutea
Tournefortia heliotropioides
Tagetes signata, and vars.
Verbena venosa
,, hybrids
Veronica Andersoni, &c.
Valeriana officinalis
Vittadenia triloba
Vinca acutiloba
Viola cornuta
,, tricolor, vars.
,, odorata, vars.
,, Countess of Kintore
Xeranthemum purpureum

To these may be added Groundsel, Sow Thistle, Laurustinus, French Marigold, Southampton Wallflower, Blackberry (double), Canterbury Bells, Eschscholtzia, Clover, Stock, Carnations (single and double), Clove, Yarrow (pink), and Strawberries (also in large fruit), Peas, Kidney Beans, young Potatos, Tomatos, &c., can still be gathered out-of-doors here. The frost a fortnight ago injured Vegetable Marrows, and some leaves of Dahlias close to the ground, but there are hundreds of good blooms, especially of single Dahlias, in the garden. It is not often that nearly 150 different flowers can be gathered on November 10 within the area of a 10 or 12 acre field. *E. J. Lowe.*

Hot-water Pipes and Tar.—Will you kindly permit me to make an enquiry and a few remarks respecting hot-water pipes? On my taking possession of the gardens here I found everything had been freshly painted, including the hot-water pipes, which, according to the tradesman's account, had been painted with Brunswick black. After I had been here two or three days I had a fire lighted for a house which is now used as a plant stove. On my entering the house, next morning, I was surprised to find such a strong smell of gas-tar (although I had the top ventilators open, to allow the smell of the paint to escape). This smell I found proceeded from the pipes when hot. I drew the attention of my employer to this unfortunate event, and taking some of the composition from the pipes I had it tested, and found it was composed of tar and turpentine which any man with a grain of common sense ought to have known would be injurious to plant life, if applied to hot-water pipes. I consider all gardeners ought to know what is the best and cheapest composition for painting hot-water pipes, and when painting operations are going on to see what is applied to them. I have found, after a thorough trial, that vegetable black and turpentine, with a little linseed oil to give it a gloss, is the best and cheapest composition that can be applied to hot-water pipes. I must now come to my enquiry, and ask if any of the readers of the *Gardeners' Chronicle* can inform me by what means I can destroy the obnoxious gas on the pipes, or, is there any means of removing the same without scraping them, as that would cause a vast amount of labour as we have a large quantity of piping here? *Alfred Bishop, The Gardens, Abbotsford, Burgess Hill.*

Tomato Disease.—If Mr. Smith will refer to my paper on the fungoid diseases of the Tomato, in the *Gardeners' Chronicle* for November 12, 1881, he will find that instead of omitting the Phytophthora as a Tomato disease, nearly half the paper is taken up in describing the appearances this fungus produces when it attacks the Tomato leaves as compared with the appearances it produces upon the Tomato fruit and upon the Potato plant. I am sure Mr. Smith would not intentionally have misrepresented me, but in this instance he has trusted too much to the accuracy of his "index." *Charles B. Plowright.*

The Servants' Term.—"To-day (Nov. 11) is the Martinmas Term, and, as is usual, the traffic at the Waverley and Caledonian Railway Stations is very great. Up till eleven o'clock the officials at the Waverley Station had booked about 400 boxes, mostly belonging to under-gardeners, however. After twelve o'clock the traffic is expected to become very heavy." The above is cut from the Edinburgh *Evening Express.* It shows what a number of young gardeners were shifting their places in Scotland this year; "Martinmas" being the under-gardeners' "term," by long "use and wont." There would be near 1000 gardeners in Edinburgh within the last three days, as more than half come up without their "boxes." At least two-thirds of these are men looking for situations, or moving from one place to another. The custom of yearly engagements of under-gardeners, through the medium of the nurserymen, is not perhaps the best for the young men, who have very little option or choice in the matter. I manage to find plenty of good men otherwise, and we mutually agree about "coming" and "leaving," which makes things go better for all. *M.*

Cypripedium Spicerianum.—When this comparatively recent introduction was added to our collections a decided acquisition was made to this useful and highly ornamental class of Orchids. The habit and foliage of the plant are precisely similar to those of C. villosum, but the flowers possess a decided individuality, that is at once engaging and highly ornamental. They are borne singly and the large upper sepal is pre-eminently the most attractive feature. It is strongly revolute behind, so as to form a hood, and pure white with a median claret band, and a lively green blotch at the base. The petals are small, greenish-yellow, and beautifully wavy on the upper margin, while the slipper is heavily tinted with a bronzy colour. The violet-purple staminode is margined with white, and have a central starry yellow spot, appears like a precious stone embossed in the centre of the flower. The cultural management of the plant is not difficult, and each season sees it flower regularly. A healthy specimen has been flowering for some time in the East Indian-house at Kew. *F.*

The Clubbing of Sparmannia and Hoya Roots.—I have examined the examples forwarded by Mr. Plowright. The clubbing is due to the attacks of Nematode worms, as in the Cucumber disease. Nothing except dead dark brown tissue is to be seen in the actual clubs, but in other places on the roots, where clubbing is just commencing, the Nematodes are abundant. *W. G. Smith.*

Grape Shanking.—Having read with interest Mr. Douglas' article on the above subject, I venture to give my experience with Vines in an old house here which shanked badly, nearly half of the crop having to be cut off annually. During the autumn of 1881, while some repairs to the house were being executed, I resolved to lift the roots of the Vines. To begin with the outside border, I removed one foot of soil; next came about 6 inches of broken bricks and tiles, which were laid carefully aside for future use. Below all this were the roots, so with forks we commenced to lift the soil to the depth of another 15 inches, fastening the roots together as the work

proceeded ; many of them had got into the cold, strong, clayey subsoil, and were destitute of fibre ; now, I thought, here is the cause of the Grapes shanking. After all the roots were freed from the soil they were rolled in mats to protect them from being dried up. Now came the making of the new border ; first of all the broken bricks and tiles were put on the clay for drainage ; then followed a good coating of old lime rubbish before putting on the turf ; after this came 1 foot of the compost, a mixture of good turfy loam, ½-inch bones, charcoal, and lime rubbish. The roots were laid upon this, and the soil carefully worked in amongst them, and when finished were only 3 inches from the surface. As a protection from frost, a good thick coating of stable manure was given, which completed the work. The inside border is only 3 feet wide ; it got a top-dressing. Now for results. Next spring (1882) the Vines started rather slowly, and flagged under bright sunshine up to May. After this the new roots appeared to be able to support them. The crop was an average one ; the bunches smaller than usual, but what there was was satisfactory, and not one shanked berry was seen. The Vines have carried heavy crops for the last two seasons, and shanking has not been observed. This year several of the bunches were 3 lb. each, large in berry, of good colour, and fine in flavour. Shanking does not always follow heavy or over-cropping, for I have seen Grapes which failed to colour well without a shanked berry. On the other hand, I have seen light crops where shanked berries were plentiful. The inference, therefore, to be drawn is, that there must be some other cause for shanking than over-cropping, such as being too dry at the roots, or their being in cold, ungenial soil, that failed to give the necessary nourishment required to bring the Grapes to perfect maturity. *William Jamieson, Elchies.*



Fig. 120.—To illustrate shapes of Apples : A, C, globose ; B, oblong. (see p. 688.)



Fig. 121.—An oblate Apple. (see p. 688.)

Pruning.—This work is generally left till winter, but why it is difficult to tell, as at that season it cannot be done without much discomfort, for however active a person may be he can hardly bustle about enough at a job of that sort to keep himself warm. This being so the mild weather we are now getting should be taken every advantage of to do what is necessary to all trees and bushes, as now that the leaves are off there is no reason for any further delay, for the blossom-buds are all formed and up, and any one can see where to cut. Pears are quite studded, and therefore an excellent chance is afforded to reduce the length of the spurs, which may be done with safety, as they are sure to break back again, and the closer they are home to the main branches the finer and better will the fruit be, as it is impossible for it to swell freely with the spurs all knotted and gnarled ; and the same remarks apply to Apples trained as espaliers or cordons, which, unless hard pruned annually, soon get in a similar state to the Pears. Plums, dessert Cherries, and Apricots are liable to the same evil, but in dealing with these more caution is necessary, for unless cut to bud the spurs of them are apt to die and leave long gaps in the branches. Orchard trees need thinning by cutting out any shoots that cross, and the removal of dead or cankered wood, which, if left, is not only an eyesore but carries decay far back, as the bark cannot heal round. Moss or lichen should be cleared off as soon as they show, for if left for only a season it is surprising how rapidly they spread. An easy way of getting rid of moss from trees on walls is to fumigate with sulphur by burning it in pans or pots that can be moved frequently, and if this is done on a still day, a man or a boy may go over the whole in a garden. To deal with pyramids or standards, lime is the only remedy, and this should be quite fresh slaked in water and used at once while hot. This may be done by passing it through a syringe after being strained through a fine sieve and made as thin as whitewash. The same dressing is also good for Currant and Gooseberry bushes, and besides cleansing these thoroughly, it will keep off birds from the buds, as the lime, if strong and fresh, will not leave its hold till late in the spring. *J. S.*



Fig. 122.—An ovate Apple. (see p. 688)

Awards to Fruit. — At the Southampton fruit show last year it was held by one of the judges, that as the Apple, Court Pendu Plat, would not be fit for the table before February, my exhibit of three dishes of dessert Apples, of which that formed one, should be disqualified. This year I had some good specimens of the same Apple, but the judges' ruling of last year stopped me from exhibiting them. However, notwithstanding that this year the show was a week earlier, the judge in question exhibited the same variety in the same class, and was actually awarded first honours. Can any of your readers explain this apparent inconsistency ? *A. Gates, Byams, Southampton.*

Nomenclature of Colours.—I wish some competent person would undertake a work that would be a most useful one, not only to florists and botanists, but to all naturalists also as well as to the general public. I mean an identification of the names of colours used in descriptions of plants, with specimens of them. Many names of colours have been of late quite altered, either transferred to other tints, or dropped and replaced by new words. For instance, purple, as in the Foxglove, Colchicum, meadow Clover, and other plants, is no longer used for such, but given to a colour that I should call indigo with a faint tint of red. Rose is not the roseus of botanists, nor violet the violaceus. A few years ago I was labelling my Dahlias and had called one of them rose. A lady on reading it remarked that that was quite wrong. I took the flower to a flower show a few days after, and got the opinion of forty-four different people upon it, and was amazed at the result, and convinced that a knowledge of colour was very rare, or perhaps I should say that the nomenclature of colours is known to very few. At this time of the year there is not sufficient light for the purpose, but my attention has been recalled to the subject by the inaccuracy of the colour studies issued by the National Society for infant schools, and by the following extract respecting violet in Chevreul on Colours, by Spanton, p. 188, 1861 :— "A screen composed of violet and white Lilacs the leaves of the violet Lilac being of a less yellow-green than those of the white Lilac, we may alternate one or more plants of violet Lilac with one plant of white lilac." Now this is from an author who writes expressly on colours. I do not know which is the typical species from which the term violet was taken, but feel sure that no English botanist would use it of the Lilac. *P.*

Thladiantha dubia. — In reference to with Mr. Lynch's communication in last week's *Gardeners' Chronicle*, p. 661, on the fruiting of certain plants at the Cambridge Botanic Garden, I may inform Mr. Lynch and your readers that Thladiantha dubia fruited in Mr. Hanbury's garden at Clapham in 1870, where I saw it on a south wall. The fruits, which I have preserved in the Museum, agree perfectly with Mr. Lynch's description. *John R. Jackson.*

Herbaceous Phloxes.—It would much interest many readers who are small growers of these beautiful hardy plants if they could learn how to induce the seed to grow. It is provoking to find plants, as this year, producing a good quantity of seed, and yet be unable to induce it to germinate. Perhaps some of our trade growers are in the secret,

for they either here or on the Continent raise seedlings, but whether their success is due to some special mode of fertilisation of the flowers or whatever be the reason at least some results are assured. I have been told that Phlox seed will germinate if sown as soon as ripe; that means sown, of course, in the autumn, or about this time. That experiment is, of course, easily tried, but the suggestion is discounted by the fact, at least as far as my experience goes, that self-sown plants are rare. Perhaps the seed, though so large and plump, and looking so good, is really infertile, and will only be fertile when the various blooms producing seed have been carefully crossed with other pollen. These are matters upon which sound information would be acceptable. We can increase herbaceous Phloxes fast enough by division and cuttings, but many who, like myself, have few sorts, and want greater variety, would like to secure a batch of seedlings if possible, because of the interest attached to raising them, and the additional beauty that may result. I have a nice lot of seed just gathered, yet not cleaned out, and I would fain let it so remain until I can—as I hope to do—learn something about the surest method of inducing it to grow when sown. I should like to see the Phlox more fully appreciated, for it is one of the most beautiful of our hardy plants. *A.*

Elcombe's Improved Parsnip.—As a first-class Parsnip none can excel the above for exhibition or domestic purposes. I have tried several others, but have discarded them all except this one. As regards shape it is everything that could be wished for—very clean, and with a very small neck. I have just measured an average sized one, which measured 15 inches in circumference and 21 inches in length. Were this Parsnip better known it would be in almost every collection of vegetables. I have grown it for the last three years, and can, therefore, recommend it. *F. S.*

Seaside Shrubs.—There can hardly be prettier small gardens in our climate than those in Cornwall, if they are taken as a whole. Nurserymen's lists are to a great extent the authority to the many as to what plants are hardy and what are not. Happily nurserymen know this fact well, and many furnish excellent lists of seaside shrubs. Again, our thanks cannot but be due to men like the Pauls, Mr. Barr, and the late Mr. Rivers, who have made one flower, or one branch of horticulture their special aim. I think I would rather be the man who knows most about Daffodils than the man who knows most about Milton. But there are many shrubs not emphasised or even mentioned in trade catalogues that might be grown in seaside gardens from Bournemouth to Marazion. Among them are Desfontainea spinosa, Embothrium coccineum, Chimonanthus fragrans, Benthamia fragifera, and various of the Myrtaceæ; such shrubs as Ceanothus azureus, generally used for walls, also make nice compact bushes. The lists again nearly all include Griselinia littoralis, but never a word about G. lucida, the bright glittering foliage of which is very conspicuous. The hardier Chamærops ought to be in every sheltered garden in South Devon and Cornwall, as well as the New Zealand Dracænas; and for variegation the different forms of Osmanthus and Elæagnus can with safety be tried. Conifers can be well represented by Cephalotaxus drupacea, Sciadopitys verticillata, Arthrotaxus selaginoides, and Cupressus Lindleyana; and I have yet to see a prettier thing than a large Hydrangea bush, blue-flowered, against a background of the bright green of Cupressus macrocarpa. This is a note hurriedly written on the spur of the idea; but that villa gardens have not the richness of foliage and freshness of tint they can have is indisputable. *C. A. M. C.*

Allotment Extension.—The provisions of the Allotment Extension Act have brought the question at last fairly within the region of practical politics. The subject is engaging the attention of many earnest thinkers and practical men, foremost among whom are Lord Carrington and Mr. Jesse Collings. It is a matter of the utmost importance and urgency in these times of agricultural depression to put within the reach of the labourer the means of adding directly to his income, and contributing materially to the health and comfort of his family. It is a question of national importance, moreover; so much being added by well directed industry on allotment gardens to the wealth of the country, to its food supply, to the well-being and contentedness of its rural communities, and the profitable employment of time which would otherwise be lost. As the secretary for twenty years and more of an allotment society in this village I can speak from experience, and although, as is invariably the case, it is difficult or impossible to get at exact figures in the case, yet I will venture to assert, without fear of refutation, that an allotment of 15 poles, well and intelligently worked, is capable of adding from 7 to 10 per cent. to a labourer's earnings. Let us suppose that every obstacle to a wide extension of the allotment system both in rural and suburban districts is removed, how can the fact be best communicated to those immediately concerned? First I would respectfully suggest to the Society of which Mr. Jesse Collings is the President, that cheap reprints of the Act be circulated gratuitously among labourers' associations, accompanied by suggestions as to how best to overcome difficulties which may arise in acquiring the land. Secondly, that similar papers be issued to secretaries of political clubs on both sides, as this is no question of party politics. Thirdly, to secretaries of horticultural and cottage garden societies; and, fourthly, to the triumvirate of the village—the parson, the squire, and the schoolmaster. Each of these gentlemen should make themselves conversant with the provisions of the Act, they would confer a great boon upon the labourer by assisting him to obtain a plot of land. It may not be generally known that when the Trustees of Charity Lands refuse to give the required notice as to the land to be let, a cottager may make application to the County Court Judge, whose order shall have the same effect as if issued by a superior law court. There is another aspect of the question, however, which does not seem to have engaged attention, and yet it is an important factor. It seems to be taken for granted that the infant Hodge is born with a spade in his hands, and acquires instinctively a knowledge of gardening from the mere fact of being born and bred on the land. The labourer does not lay claim even to the slightest knowledge of the how and why of farming. Gardening is the highest development of farming; how, therefore, can he understand it? He does not, cannot understand it unless he be led to do so by systematic and intelligent teaching on the land itself. No so-called "scientific agriculture" will enable him to do this. It cannot be taught by lectures and books, nor can even certified masters and mistresses in town Board Schools teach it. Let elementary horticulture form an essential subject of instruction in rural schools, each school being provided with the means of demonstrating by practice the truth of the theory advanced. Provide each school with a garden; it would be useful and valuable as an instrument for developing and strengthening the powers of observation in the pupil, as well as a means of affording him systematic and technical instruction in the work whereby he must earn his bread. Then, and not till then, will the allotment system become fully appreciated by the labourer. Too often at present the cultivation of the plot of land is only a wearisome prolongation of his hours of labour, and what might be a pleasurable recreation, varied and interesting in its execution and profitable in its outcome, is simply a coarse and wearisome "Tater garden," utterly devoid of interest and attractiveness at seasons when a garden is most valued. *T. W.*

A Method of Growing Eucharis amazonica.—So much has been written from time to time on the culture of this much esteemed plant that anything farther would almost seem superfluous, and yet I fear there are many cultivators whose only reward is a crop of leaves. Having grown the plant successfully for some years I offer these remarks for those who may not be favoured with the best convenience, yet if, like myself, they have a warm plant stove, with a little management they can command success, and convert, perhaps, a hitherto unsightly part of the house into something useful. My plants are always grown on the floor of this structure wherever there is room, the pots standing near the hot-water pipes, where the roots get plenty of heat, the tops, of course, getting some daylight—distance from the glass is no object. When in flower they are placed in a cooler house, or perhaps used to decorate rooms. Last year two of my plants in 7-inch pots had nine spikes of bloom each, averaging six flowers on each spike. I have now one plant with seven spikes, others with fewer, the plants always flowering freely. One point with me is to pot seldom, and, if necessary, just give a size larger, not disturbing the ball, unless I wish to increase the stock. I then shake right out and put about three bulbs in a 6-inch pot, using any good soil with a little rotten manure. Another point—and perhaps the most important—is water. I scarcely ever water my established plants at the root, but merely sprinkle the large leaves with syringe, or rose water-pot every time the house is damped during the day. When the flower-spikes appear I vary the treatment, and give a little water at the root. The plants which are shaken out I also water at the root until they are established. *G. Couldrey, Wilton, Salisbury.*

Hedychiums in Cornwall.—The note on p. 627 from Mr. Bennett, of Menabilly, relating how luxuriantly H. Gardnerianum has grown and flowered with him this season out-of-doors without special aids, is amply borne out by what could be seen in other Cornish gardens. As far up as Mount Edgcumbe, within a stone's throw of the sea, the plant thrives, flowers, and increases rapidly. And in many other gardens in that warm county both it and H. coronarium may be seen. It seems, when in a soil and position that suit, to prefer, like the Alstrœmerias, to be left to grow at its own sweet will. One of the most enjoyable times in Mr. Dorrien-Smith's home in Scilly is when a large clump of H. flavum—which is gradually spreading out further and further without any let or hindrance being interposed from the base of a wall—perfumes the entire vicinage. Indeed, when Lapageria rosea and Habrothamnus fascicularis are hardy in Cornwall, there seems to be no limit as to what plants and shrubs may be exposed to its more favourable climate. *C. A. M. Carmichael.*

The Apple Crop in Hereford.—Although the Apple crop of the United Kingdom for this year is much below the average, still in this locality, notwithstanding the heavy crop of last year, it has been a good average, the size and quality of the fruit being all that could be desired. The reason for this, I think, is partly due to that undulated surface of the country which render the scenery so picturesque, and gives a great variety of aspects, hence the ease with which good sites for orchards can be selected and which in most places has been done with good judgment. Another reason may be found in the improvements made in their cultivation, which it is very gratifying to observe. The trees are carefully pruned, good sorts are planted, indifferent ones, if vigorous, are lopped and grafted with better ones, or if they lack vigour they are rooted out to make room for others. In grafting a lopped tree it has been found a good plan not to cut it down too close, but to level the stumps of the principal branches and to put two grafts on each; a tree so treated in a few years will form a fruitful crown. Noticeable amongst the fine specimens this year is Blenheim Orange, one of the best, and one which does well in this part. There can be no reason why acres of this variety should not be planted wherever it succeeds. It has been said with truth that when planted in orchards it is such a strong grower that it takes many years to come into a fruiting state, but there is a remedy for this, viz., root-pruning; but I dare say in the long run it will be found to be as remunerative to let their roots alone, as they will grow quicker and when they attain a large size they will make up for lost time. To show that Blenheim Orange can be made to produce fruit while young, I will relate my experience with it. I had three bush trees planted six years ago in the kitchen garden here, along with some other varieties, which grew very strongly but did not yield any fruit; two years ago I had them lifted right out of the ground, root-pruned, and re-planted; and this year the result is most satisfactory, as they have borne a heavy crop of fine fruit, and equally as heavy as other free bearing sorts, such as Lord Suffield, Worcester Pearmain, Stirling Castle, &c., which were operated upon at the same time. I doubt not if intelligent root-pruning or lifting were more employed in the garden and orchard this and other varieties that are considered shy bearers would no longer be thought so. *Roderick Fraser, The Upper Hall Gardens, Ledbury.*

ABBEY PARK, LEICESTER.

THIS beautiful place has been laid out by Messrs. Barron & Sons, of Borrowash, and the neatly arranged flower-beds are skilfully designed. Mr. Burn, the superintendent, has done much to improve the grounds, and has given the Leicester public much pleasure by using suitable plants and effective plans for the adornment of the park and gardens.

The annual number of bedding plants used exceeds 250,000, and Mr. Burn has studied the plants best adapted for the position and climate of Leicester, so that great credit is due to him for the display achieved.

Carpet bedding was well done, especially around the pavilion; there was also a fine bed in close proximity to this, and beds of subtropical and succulents equally well done, attracted the attention of the thousands who visited the Park during the season.

The arrangements of the remaining decorative features are worthy of note, as harmony of colour has received great attention. The borders are filled with herbaceous plants, alpines, and hardy and tender annuals that impart a pleasing appearance. There is a large lake which adds to the beauties of the scenery; its area is about 3 acres, whilst that of the park is nearly 60 acres. The Royal Oak, planted on the occasion of the opening of the Park by H.R.H the Princess of Wales, od May 29, 1882, is doing well, and if all the trees planted by the same hands are doing as well as this one, some of them must be fine trees ere now.

It is gratifying to know that the many visitors to this beautiful park cause very little damage to the trees, grass, or shrubs. *A. Outram.*

Reports of Societies.

Reading Chrysanthemum: *Nov.* 14. — The increasing interest taken in the culture of the Chrysanthemum is shown not only in the establishment of new societies in various parts of the country, but also in the marked improvement made this year in not a few that are old to the lovers of this flower.

PLANTS.—Some idea of the competition that ensued may be gleaned from the fact that there were ten entries for the best collection of Chrysanthemums, plants occupying a space not exceeding 50 feet. The schedule stated "to be shown as grown," but this did not prevent trained plants from being staged; these groups were placed round the sides of the hall at intervals. The best, composed entirely of upright grown plants, came from Mr. Brooker, gr. to R. Tomkins, Esq., Reading; and not only was the group well arranged, but the blooms were of fine quality, consisting of both incurved and Japanese, while the plants were well grown. Mr. Basket, gr. to W. J. Palmer, Esq., Reading, was 2d, with a collection coming very near to Mr. Brooker's in point of quality; 3d, Mr. Ashby, gr. to W. Fanning, Esq., Whitchurch, also with well grown and flowered plants. Extra prizes were awarded to Mr. Turton, gr. to John Hargreaves, Esq., Maiden Erleigh; and Mr. Hatch, gr. to S. B. Stephens, Esq., Reading. The best nine specimens of large-flowering Chrysanthemums came from Mr. Farey, gr. to C. Shepherd, Esq., Woodley Hills, Reading, who had nice medium-sized specimens trained, including Japanese, of Red Dragon, La Nymphe, Mrs. Dixon, Golden Christine, Empress of China, Lady Hardinge Howard, William Long, and Reverie; 2d, Mr. Ashby, who had upright plants with several stems carrying good heads of bloom, the leading varieties being Pink Venus, George Glenny, Virgin Queen, and General Bainbrigge; 3d, Mr. Surman, gr. to C. H. Witherington, Esq., Reading. Mr. Brooker had the best six plants, staging good upright grown specimens of Mrs. Halliburton, Barbara, Pink Perfection, Hero of Stoke Newington, Peter the Great, and a white variety unnamed; 2d, Mr. Baskett; 3d, Mr. Jones, nurseryman, Henley-on-Thames. Mr. Turton had the best three specimens, consisting of Cossack, Mr. Forsyth, and John Salter; 2d, Mr. Mayne, gr. to Miss Moon, Reading. The best three standards came from Mr. Farey, who had well grown and flowered examples; 2d, Mr. Bridge, gr. to J. F. Hall, Esq., Erleigh Court; 3d, Mr. Parham, gr. to H. Simonds, Esq., Reading. The best six pompon Chrysanthemums came from Mr. Ashby, who had large untrained specimens, well grown and flowered, consisting of Fanny, Rosinante, Salaman, St. Michael, La Vogue, and Mustapha; 2d, Mr. Farey, with fairly good specimens of the same style; Mr. Bridge being 3d, with trained specimens that had been much disbudded, and carried a few very fine flowers.

CUT BLOOMS.—In all the classes for these there was an excellent competition. In the leading class for eighteen incurved varieties, Mr. F. W. Flight, of Twyford, Hants, a noted grower, was 1st, with a very fine lot of flowers; 2d, Mr. W. R. Strong, Wellington College, who had also capital examples; 3d, Mr. Wills, gr. to Mr. Pearce, Bassett, Southampton. The best twelve varieties came from Mr. J. Strong, gr. to H. Sweet, Esq., Dorney House, Weybridge, who had very fine blooms; 2d, Mr. Farey; 3d, Mr. Munday, Basingstoke. In the class for six incurved varieties, Mr. William Wildsmith, of Heckfield Gardens, added to his long list of triumphs that of coming to the fore as a highly successful cultivator of Chrysanthemums, showing favourite varieties, all well finished; 2d, Mr. Kendall, gr. to H. L. Holland, Esq., Roehampton, S.W.; 3d, Mr. Baskett. Mr. Elliott, gr. to T. Hibbert, Esq., Braywick, Maidenhead, had the best twelve reflexed Chrysanthemums, staging very fine blooms; 2d, Mr. Redditch, gr. to Mr. Paire, Esham, who had fine blooms also; 3d, Mr. Baskett, who staged some Japanese varieties of a reflexed character. Mr. F. W. Flight had the best six reflexed flowers, staging admirable examples; 2d, Mr. Wills; 3d, Mr. W. Wildsmith. Japanese blooms were grandly shown, and so numerous that there were thirteen stands competing in the class for twelve varieties. Mr. F. W. Flight had the best, large, full, and well coloured; 2d, Mr. W. R. Strong, who had excellent blooms; 3d, Mr. J. Strong. Mr. Wildsmith was again to the fore with six blooms, having superb examples; 2d, Mr. Kendall; 3d, Mr. Baskett. The large flowered Anemone varieties were well shown, the best six coming from Mr. Page, gr. to A. Southard, Esq., Bracknell; 2d, Mr. House, gr. to J. O. Taylor, Esq., Reading. Pompon Chrysanthemums were shown in charming bunches—unfortunately we omitted to take the name of the winner of the 1st prize; 2d, Mr. W. Wildsmith; 3d, Mr. Kendall.

TABLE DECORATIONS, &c.—Prizes were offered for the best bouquet of Chrysanthemums, about 10 inches in diameter, with the addition of any foliage. Here Mr. George Phippen, the well-known Reading floral decorator, of the Oxford Road Nursery, was 1st, with a bouquet worthy of a much higher prize than was offered; Mr. Wildsmith coming in 2d, with a charming posy also; Mr. Kendall being 3d. Mr. Phippen also had the best basket of Chrysanthemums, which was relieved by Maidenhair Fern, Cyperus alternifolius, grasses, &c.; Mr. L. Williams, Hazeldean, Ealing, being 2d. These two were severally 1st and 2d in the class for an epergne of Chrysanthemums, Mr. Phippen's being worked out in excellent taste. In addition, Mr. Phippen set up, not for competition, a table laden with bouquets, wreaths, crosses, made with choice flowers; stands of bunches of Chrysanthemums, &c., which was one of the features of the exhibition, and was Highly Commended.

MISCELLANEOUS PLANTS, &c.—There was a class for the best group of plants in pots, limited to 50 feet, Mr. Parham being 1st, Mr. G. Phippen 2d, and Mr. Baskett 3d. These formed a pleasing feature at one end of the Town Hall. Mr. Parham had the best six plants suitable for table decoration.

FRUIT.—There was a very good display of fruit for the season, especially of Apples. The best six dishes came from Mr. Turton, who had good Lady Downe's and Muscat of Alexandria Grapes, King Pippin Apples, Beurré Diel Pears, Medlars, and Filberts, &c., a very nice lot indeed. The best six dishes of Apples (four dessert and two kitchen) came from Mr. Turton, who had excellent examples of Ribston Pippin, King of Pippins, Cox's Orange Pippin, Court Pendu Plat, Prince Albert, and Mère de Ménage; 2d, Mr. Hermon, gr. to F. S. Kurray, Esq., Reading, who had King of Pippins, Scarlet Pearmain, Ribston Pippin, Blenheim Orange, Wellington, and Derby; 3d, Mr. Maber, gr. to A. Waterhouse, Esq., Nattenden. Mr. Turton was the only exhibitor of six dishes of Pears, staging Catillac, Beurré Bachelier, Triomphe de Jodoigne, Beurré Diel, Beurré Clairgeau, and Beurré d'Aremberg. The best two bunches of Black Hamburgh Grapes came from Mr. Ashby. The best two of Gros Colmar came from Mr. Iggulden, Marston Gardens, Frome. The best two bunches of any other black were Barbarossa, shown by Mr. Turton; Mr. Iggulden being 2d, with Alicante. Mr. Turton had the best two bunches of White Muscats, Mr. Rose, of Lockinge Park Gardens, being 2d. In the class for any other white kind Mr. Turton was 1st, with Trebbiano; Mr. Iggulden being 2d, with Mrs. Pearson, somewhat *passé*, and quite small in berry.

Twickenham Horticultural.—The autumn show of Chrysanthemums promoted by this Society was held in the spacious Town Hall buildings on the 18th and 19th, and proved to be a very attractive and successful gathering. A very prominent feature in the hall was a large round group of various decorative plants, arranged with excellent effect beneath a lofty Palm, and the effect was much enhanced by the addition of numerous Pampas plumes projecting from the plants. On either side of the entrance to the hall were arranged on long tables collections of the beautiful Cyclamens for which Twickenham is so famous. These came from Mr. R. Clarke, and Mr. Walker, of Whitton, and were superbly grown and bloomed. A very neat lot of Cyclamens were also staged by Mr. Warren, of Isleworth. The groups of Chrysanthemums in pots were generally excellent, and six in number, and made the sides of the hall exceedingly gay. The best, a well grown and very fresh flowered lot of plants, came from Mr. J. Parsons, gr. to T. Twining, Esq., Twickenham; Mr. Munro, gr. to E. D. Paull, Esq., Twickenham, was 2d, with a capital lot of plants, but the blooms, previously so good, were a little stale; Mr. Gallows, gr. to J. J. Flack, Esq., Twickenham, was 3d; and Mr. G. Coombs, Sheen House, Mortlake, was 4th. The best six trained plants came from Mr. Sallows, who had good examples of Prince Alfred, Mrs. Halliburton, Cloth of Gold, Mrs. Dixon, Mr. G. Glenny, and Mrs. Rundle; Mr. G. Trussler was 2d, with smaller but good plants. Mr. Trussler had the best flat basket of plants, in an effective and gay arrangement, in a nice centre Palm, supported by Poinsettias, Chinese Primulas, Pelargoniums, and other flowering plants, dressed with Ferns; Mr. G. Filsell, gr. to J. R. Gleave, Esq., Twickenham, was 2d. A novel class was found in six plants of Epiphyllum truncatum, in bloom, but the only lot, dwarf, though well bloomed plants, came from Mr. Munro. A lot of eight plants, from Mr. Baker, of Plumstead, in 48's, and on stems some 9 inches in height, showed what was desired and how beautiful a class might result were a few half dozens to be found at autumn exhibitions. The best six Bouvardias, plants 3 feet in height and superbly bloomed, came from Mr. Munro, showing also how beautiful a class these might make. Then there was a class for six Scarlet Pelargoniums, the donor of the prizes specially stipulating for the rich colour. The best lot, all in 32's, and really splendidly flowered, came from Mr. Parsons, and were all Henry Jacoby, showing what a grand winter bloomer this fine kind is. Mr. Munro had the 2d best lot in Wonderful and Vesuvius, dwarf neat plants. Mr. Munro had the best six table plants; Mr. Parsons and Mr. Filsell following in that order. A very beautiful lot of Tree Carnations, habits dwarf, and full of wood and bloom, came from Messrs. Hooper & Co., of Twickenham, as also did a splendid white flowered wreath. Mr. Filsell had the prettiest dressed stand of flowers in the open class, and Mrs. Alfrey took the Challenge Cup offered by Mr. Stearns for the best stand for table decoration, with a very elegantly-dressed epergne that was greatly admired. Both these stands had the special merit of being dressed with few rather than many flowers. A prettily dressed stand, made up of hardy leaves, flowers, and berries, from Mr. Chapman, Hampton Road, deservedly earned the prize in its class. Mr. W. Furne, of Teddington, was the leading exhibitor of cut blooms in Japanese incurved, Anemone, and pompons, all exceptionally good. Messrs. Sallows, Munro, and Trussler, also showed good flowers. A fine lot of some seven dozen blooms were staged by Mr. Bates, of Poulett Lodge, who also had good Muscat and Black Alicante Grapes and other fruits.

FRUITS.—Mr. Wright, gr. to Lady Freake, Twickenham, had four Vines in small tubs, finely fruited, the bunches of good size, and berries black as Sloes. Also he showed six bunches of Alicante finely finished. The best two bunches of Grapes in competition were capitally finished Alicantes, from Mr. Munro, and the 2d best good, though not fully coloured, Gros Colmar, from Mr. O. Heckle, Orleans House. Mr. Trussler had the best four dishes of Apples in Blenheim, Cox's Orange and Fearn's Pippins, and Lane's Prince Albert.

VEGETABLES.—Mr. J. Wild, gr. to J. J. Mackintosh, Twickenham, had the best six vegetables, capital samples. Mr. Charles Garrod, gr. to J. R. Tindall, Esq., Oxford Road, was 2d, also with a nice lot. A grand display of vegetables and fruit was set up by Mr. W. Poupart, market grower, of Twickenham, that included wonderful examples of Clayworth and Market Red Celeries, fine Cauliflowers, huge Parsnips, Turnips, Cabbages, Seakale, Carrots, Potatos in several sorts, Radishes, and a great variety of other products, all of the finest quality. A very good show of vegetables also came from Mr. Coombs, Sheen House Gardens, that merited high commendation.

Birmingham Chrysanthemum.—This magnificent exhibition was held on the 19th and 20th, in the Birmingham Town Hall, eclipsing entirely all other similar displays held in the same place in other years, both in the number of and the general superiority of the exhibits, evidence if any were needed, that the Chrysanthemum is making rapid strides in popular esteem. One cannot praise too highly the cut blooms of Chrysanthemums as a whole, while some series were perfection. Of course the most exciting class was the one provided for forty-eight distinct blooms, for which the liberal award of £10 was offered as a 1st prize, the remaining awards being upon the same liberal scale, and although it only brought four competitors into the field, yet flowers of the first order were staged. Mr. J. Jellico's flowers were declared to be models of beauty, and the encomium was especially due, when we consider the same exhibitor's success in other large classes. The plants in pots were well done, dwarf and healthy, and well flowered, athough mostly with too many flowers to allow of a good size being attained, and the training of others was rigid, yet on the whole they did the growers much credit. Chinese Primroses were finely shown, being much encouraged by the special prizes offered, and richness of colour, abundant bloom, and size of flowers being remarked in most cases. The display of fruit was very fine, and most of the classes were well contested. We regret being unable to give the awards in one or two very full classes, as the work of adjudication, which, by the way, was heavy, was not finished when we left, but the most important awards were chronicled. All the best and largest classes were open ones, and the prizes liberal; the result showing the wisdom of the arrangement—one that might be adopted with advantage by other Societies. The principal classes and prize-winners are given below, in the order in which they appear in the schedule.

PLANTS IN POTS.—Nine Chrysanthemums, dissimilar, in which three lots were staged.—1st, H. H. Hill, Esq., Edgbaston (gr., Mr. Wm. Doughty), with a good, even set of plants, about 3 feet through, and averaging thirty-five to forty flowers upon each plant; 2d, Mr. J. Crook, Edgbaston, whose lot was also good, but a sameness of colour detracted from their otherwise good points; 3d, T. Martineau, Esq., Edgbaston (gr., Mr. O. Brasier). In the class for six dissimilar varieties, Mr. Brasier was well to the front with excellent plants; 2d, E. H. Elkington, Esq., Edgbaston (gr., Mr. T. Day), who staged fine plants; with a grand plant of Mrs. G. Rundle. Mr. Brasier took the lead in the class for one plant. For six pompons, dissimilar, the same exhibitor gained 1st honours; while for three distinct pompons the 1st prize was awarded to Mr. T. Day, all excellent and most profusely flowered plants, about 3 feet across.

CUT FLOWERS.—Forty-eight distinct varieties, twenty four incurved and twenty-four Japanese, the 1st prize being £10. The judges took great pains to adjudicate with impartiality, and there is no doubt the 1st honour was rightly given to Mr. J. Jellico, gr. to F. H. Gossage, Esq., Woolton, Liverpool, whose stands were magnificent, with scarcely a weak flower in them; the finest were—Japanese:—Fair Maid of Guernsey, Boule d'Or, Triomphe de la Rue du Châtelet, Baron de Prailly, Criterion, M. C. Andiguier, Japonaise, Meg Merrilies, M. Desbreau, Balmoreana, Elaine, Peter the Great, R. Ballantine, Ethel, J. Delaux, Mons. Ardenne, Comte de Germiny, Ceres, H. Jacotot, La Nymphe, Flamme de Punch, Thunberg, Dr. Macray, and Triomphe du Nord. Incurved, as follows:—Alfred Salter, Princess of Wales, Sir S. Carey, Empress of India, Prince Alfred Golden Empress, Queen of England, Jeanne d'Arc, Emily Dale, Cherub, Hero of Stoke Newington, Jardin des Plantes, Princess of Teck, Mr. Howe, Lady Hardinge, Barbara, Mrs. Shipman, Beauty, Refulgence, Eve, Princess Beatrice, Mrs. Heale, Mr. Cullingford, and Mabel Ward. Princess of Wales, Jeanne d'Arc, and Princess of Teck could not be staged in finer trim. Mr. A. Barker, gr. to Sir H. Allsopp, Bart., was 2d; while the 3d and 4th prizes were awarded to Mr. G. Neal, gr. to P. Southby, Esq., Hampton; and Mr. W. Comfort, gr. to G. A. Everett, Esq., Knowles, in the order named; Mr. Barker's collection was also excellent, and we specialise the following as being the finest:—Empress of India, Lord Alcester, and Mrs. Heale, in the incurved class; with Peter the Great and Mons. Ardenne in the Japanese group. In the class for twenty-four blooms, twelve incurved and twelve Japanese, Mr. Jellico was again 1st, while Mr. A. Barker was 2d, and Mr. W. Comfort 3d. Eighteen blooms, incurved, distinct.—1st, Mr. J. Jellico,

again staging a most excellent series of flowers, for the most part the same varieties as in other collections, and especially noticeable was Jeanne d'Arc, Princess Beatrice, Refulgence, and Mrs. Heale; Mr. W. Comfort and Mr. W. Dyer, gr. to J. Marigold, Esq., Edgbaston, were 2d and 3d respectively; the 2d collection contained splendid flowers of Jeanne d'Arc, Hereward, and White Venus. For twelve blooms, Japanese varieties, Mr. Jellico again beat all his opponents, having a splendid stand, comprising varieties seen in his other stand; 2d, Mr. A. Barker; 3d, Mr. W. Comfort—the blooms in each being similar to those observed in other collections, and which we cannot specify. In the class for twelve Anemone-flowered varieties Mr. A. Barker headed the list, but even here the redoubtable Mr. Jellico ran him very hard. Good blooms of the following were staged:—Madame Cabrol, Gluck, Fleur de Marie, and Georges Sand. 3d, Mr. G. Neal. There was keen competition in the class provided for twelve blooms incurved varieties, distinct, grown within three miles of Stephenson's Place, the premier position being gained by Mr. W. Dyer, gr. to J. Marigold, Esq., in whose collection were first-class flowers of Barbara, Prince Alfred, and Princess of Wales; 2d and 3d respectively Mr. J. Palmer, gr. to F. Madeley, Esq., Handsworth, and Mr. J. Hughes, gr. to A. F. Osler, Esq., Edgbaston.

MISCELLANEOUS PLANTS AND FLOWERS.—Twelve Primulas, single.—1st, Messrs. Pope & Son, nurserymen, King's Norton, the same firm being 1st in the class for six, as well as in that provided for six doubles, the prize in the latter case being gained by staging beautiful examples of these useful winter flowers; the 2d prize in this class fell to Mr. H. Jackson, gr. to the Rev. G. Kittoe, Boldmead Vicarage. Twelve cut Camellias, not less than three varieties.—1st, Messrs. Perkins, of Coventry; 2d, Mr. E. Gilman, gr. to the Earl of Shrewsbury and Talbot; 3d, Mr. J. Freeman, gr. to Z. Walker, Esq. Twelve Cyclamens.—1st, with a splendid dozen, mostly white or delicate colours, Mr. E. Cooper, gr. to the Right Hon. J. Chamberlain, M.P., the same exhibitor gaining the same position in another class for six, Mr. W. Doughty being 2d.

CLASSES FOR AMATEURS AND GENTLEMEN'S GARDENERS.—Twelve Primulas.—1st, Mr. G. Caldicott, gr. to W. Matthews, Esq., Edgbaston. Nine plants, in or out of flower.—1st, Mr. G. Brasier, gr. to T. Martineau, Esq., with a very fine group of fine-foliaged and flowering plants. Of the latter special mention may be made of Eucharis amazonica, Plumbago rosea, and Callicarpa purpurea. The latter was especially attractive—rarely has such a plant of it been shown. 2d, Mr. W. Doughty, whose plants were mostly fine-foliaged, consequently they lacked the brightness of the leading group. For six foliage plants.—Mr. W. Dyer was 1st, staging splendid examples of Areca australis and Croton majesticus; 2d, Mr. E. Cooper; 3d, Mr. T. Day. For three Poinsettias.—Mr. Dyer was 1st, with splendidly finished plants, while Mr. Brasier took the lead for three pots of Mignonette; and Mr. W. Doughty, 2d. For a bank of natural grown Chrysanthemums the Society offered special prizes, the 1st being easily taken by Mr. W. Dyer, who staged a very fine lot, including representatives of all the classes, some of them carrying first-class flowers in profusion; 2d, Mr. J. C. Nickley, Smethwick; 3d, Mr. S. Snow.

FRUIT.—For a collection of six dishes, Grapes and Pines excluded, Mr. A. Barker was 1st with two dishes of Apples, two of Pears, Medlars, and Strawberries; 2d, Mr. E. Gilman, gr. to Earl Shrewsbury, whose dishes were also good; 3d, Mr. J. Bennett, gr. to Hon. C. H. Wynne, of Corwen. In the class for three bunches of black Grapes there were seven lots staged, the 1st prize falling to Mr. A. Barker, for splendid bunches of Black Alicante; 2d, Mr. H. Thompson, gr. to W. Bassano, Esq., Old Hill, Birmingham, who staged good examples of Meredith's Alicante; 3d, Mr. H. Fraser, gr. to W. A. H. Martin, Esq., Ledbury. For two bunches of white Muscat Grapes, Mr. E. Gilman was 1st for perfect examples of Muscat of Alexandria; 2d, Mr. A. Barker, with the same variety; 3d, M. J. Muncaster, gr. to W. H. Wynn, Esq., Selby Oak. Two bunches of white Grapes, not Muscat.—1st, Mr. E. Gilman (name not given); 2d, Mr. J. Freeman, with Duchess of Buccleuch. One Pine.—Mr. J. Bennett, with a splendid example of Smooth Cayenne; 2d, Mr. A. Barker, with a good Queen. Twelve dishes of Apples, six dessert and six culinary.—This was well contested, a large number of most meritorious lots being staged, but the 1st position was taken by Mr. W. Edwards, gr. to H. Higgins, Esq.; 2d, Mr. W. Green, Tenbury, with good dishes; 3d, Mr. C. Slade, Alcester. Twelve dishes of Pears in not less than six distinct varieties.—1st, Mr. A. Barker, with fine dishes of the following: Prince Consort, Josephine de Malines, Oliver de Serres, Glou Morceau, Duchesse d'Angoulême, Nouveau Poiteau, Beurré Diel, Easter Beurré, Doyenné du Comice, Echassery, and Winter Nelis; 2d, Mr. R. Fraser; 3d, Mr. W. Green, each being very fine.

MISCELLANEOUS EXHIBITS, NOT FOR COMPETITION.—A charming group of plants, flowering and foliage, were staged by Mr. W. Jones, gr. to C. E. Matthews, Esq., in which was a magnificent plant of Erica hiemalis, which deservedly obtained a special prize. Hard by this was a most charmingly arranged group by Mr. Hans Niemann, Barbourne Road, Edgbaston, consisting of Poinsettias, Callas, Mignonette, Asparagus plumosus, Ferns, and Palms; but perhaps the most remarkable was a splendid pan of Pratia littoralis crowded with its small purple fruits, though it is to be regretted it was not in a more prominent position. Messrs. Cannell & Sons, of Swanley, had a grand display of their zonal Pelargoniums, single Chrysanthemums, and well flowered Chinese Primroses: notable in the latter was Swanley Blue; in the Pelargoniums especially attractive were the Queen of the Belgians, a splendid single of the purest white, and a double named Le Cygne, of the same character: both are first-rate, and must become extremely popular plants. Messrs. T. Hewitt & Co., of Solihull, staged a grand and bright bank of zonal Pelargoniums, also Messrs. Pope & Son, King's Norton, who also staged a fine lot of Poinsettias, Ferns, Bouvardias, &c. Messrs. H. Vertegans & Son, Chad Valley Nurseries, made a fine display of foliage and flowering plants in great variety; the wreaths and crosses shown by the same firm were in perfect good taste. Messrs. Perkins, of Coventry, also made a feature in the same direction, the resources of both firms being evidently suitable for such productions. Messrs. Richard Smith & Co., of Worcester, had a fine lot of young Conifers and variegated shrubs in pots bordered with upwards of forty dishes of excellent Apples and Pears; while Messrs. Blake & Mackenzie, of Liverpool, did not forget to make the public aware of the existence of their most valuable boxes for its parcels post, as well as showing many other things useful to gardeners and gardens. (*Correspondent.*)

Winchester Horticultural.—The second annual Chrysanthemum and fruit show of the Winchester Horticultural Society was held in the Guildhall on November 18 and 19, and was a decided success, the entries being numerous in the cut bloom and plant classes. The arrangements were successfully carried out by the courteous Hon. Secretaries, Messrs. Porter and Colson. Mr. E. Hillier, nurseryman, Winchester, showed a large group of miscellaneous plants, very tastefully arranged, not for competition; these, and the collection of fruit shown by the same firm, were a much admired addition to the show. Single epergnes for table decoration, ladies only, were both numerous and tastefully arranged, as is the case generally at Winchester shows.

For the best collection of Chrysanthemums, good quality and general effect to count most, there were six entries. 1st prize was awarded to Mr. W. Neville, gr. to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, whose plants of incurved and Japanese varieties bore fine solid blooms, the plants being also well furnished with foliage, and the colours evenly blended; 2d, Mr. J. Wareham, gr. to Mrs. T. Gunner, Winchester, who had plants with good blooms, but whose plants were too crowded; 3d, Mr. G. Sergent, gr. to F. Birch, Esq., Winchester; 4th, Mr. Astridge, gr. to W. B. Simmonds, Esq., Winchester. For six plants of Chrysanthemums, distinct varieties, Mr. W. Joy, nurseryman, Shirley, turned the tables on his formidable rival, Mr. E. Wills, gr. to Mrs. Pearce, Bassett, by beating him somewhat easily with plants that were not so overblown, and whose colours were fresher; 3d, Mr. A. Prouting, gr. to Miss Butler, Winchester. For six Japanese plants Mr. W. Joy was again the winner of the 1st prize, with neat fresh plants, having a profusion of bloom, of which the following were particularly noteworthy:—Peter the Great, Lady Selborne, Sultana, and Hiver Fleuri. Mr. Wills gained 2d place, with larger plants, but which were not so fresh; 3d, Mr. W. Dove, Shirley. For a single specimen Japanese Mr. Wills secured the 1st award, with a large well bloomed plant of La Nymphe; 2d, Mr. J. Wareham; 3d, Mr. W. Joy. For a single specimen, incurved or reflexed, Mr. Wills was 1st, with a fine plant of Pink Venus; 2d, Mr. Astridge; 3d, Mr. W. Joy.

CUT BLOOMS.—Twenty-four distinct varieties, eight to be Japanese and sixteen incurved or reflexed.—Mr. Molyneux, gr. to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, easily took the lead, with blooms far surpassing any other in size, form, and freshness, composed of the choicest varieties in the several sections. Mr. Melville was 2d with an even stand of smaller flowers very neatly set up; 3d, Mr. E. Wills, with large bloom slightly past their best. For twenty-four blooms, in eighteen varieties, Mr. Molyneux followed up his previous success with blooms similar in character to those in the preceding class; Messrs. W. & G. Drover, nurserymen, Fareham, were awarded 2d, and Mr. Neville 3d. For twelve incurved blooms there were five entries, the prizes being awarded in the order in which their names stand to Messrs. Molyneux, Drover, and Flight. For twelve Japanese blooms the competition was close, the flowers all through being of high merit: Mr. Molyneux was again 1st, with large fresh blooms of great substance; Messrs. Drover followed close with other flowers as good; 3d, Mr. Neville. For twelve reflexed, Mr. Molyneux and the Messrs. Drover took the prizes in the order named, followed by Mr. Wills. For twelve cut blooms, not less than eight varieties of any kind, Mr. A. Brider, gr. to Colonel Martin, Fareham, was 1st with good blooms; 2d, Mr. H. Munday, Basingstoke. For twelve cut blooms, open only to those who had not previously taken a prize for cut blooms.—1st, Mr. J. Dauncey, gr. to J. Bramstone Stane, Esq., Buckfield, Basingstoke; 2d, Mr. E. Flight, Winchester; 3d, Mr. J. Budd, gr. to J. Dalgety, Esq., Locklesly Hall, Romsey. For twelve blooms (amateurs).—1st, Mr. J. B. Colson; 2d, Mr. A. Taylor.

For the best collection of fruit, not less than six varieties, there was only one entry, that from Mr. Budd, who was awarded 1st prize. For three bunches of Grapes, distinct varieties, Mr. Molyneux was 1st, with good well finished examples; 2d, Mr. E. Hillier, with good bunches. For the heaviest bunch Mr. Molyneux gained 1st award, with Barbarossa, 5 lb.

For the best miscellaneous groups of plants, arranged for effect, space 8 feet by 8 feet, Mr. C. Axford, gr. to C. M. Shipley, Esq., Twyford, easily gained 1st honours with a group arranged particularly neat, without being too crowded. The plants used were Chrysanthemums, Poinsettias, Palms, Primulas, &c. (*A Correspondent.*)

Liverpool Horticultural.—The first Chrysanthemum show in connection with the above flourishing society was held in St. George's Hall, Nov. 25 and 26, and however good it has been other years, they have been quite eclipsed by this in every way. The number of entries and collections staged were much larger, indeed in this respect the committee were perplexed to find room for all the stands of cut blooms, a large series of which had to be arranged upon forms in front of the orchestra, in a position rather prejudicial to other exhibits, but no other relief could be found, the spacious hall being filled to overflowing, the vegetable and miscellaneous exhibits having to be placed in the corridor outside. As usual the cut bloom was generally of great merit. Liverpool has gained a wide reputation for incurved varieties, but this year the enthusiastic growers were not content with partial honours, and a most marvellous stride was made in the quality of the Japanese varieties shown. It is doubtful whether any finer blooms have been shown anywhere this season than those in Mr. Mease's winning stand of thirty-six: all round these were admitted to be perfect. Southern growers of note admitted to us this fact, and there was no gainsaying the statement. The display of cut flowers was remarkable, and by far the larger portion of them were staged in the finest condition, but we may particularise those in the stands belonging to Mr. W. Mease, gr. to C. W. Neumann, Esq., Wyncote, Allerton; also those staged by Mr. G. Mease, and Mr. J. Jellico: the latter took his chief honours at Birmingham, nevertheless what he staged here were very fine. The plants in pots, with the exception of the premier collection, in the chief classes of large flowered and pompon varieties, were not quite up to the usual standard, they being unfortunately rather past their best, all the signs of good culture were evident enough, but they of course lacked brightness. The miscellaneous plants in pots made in themselves a very interesting and bright display, but perhaps the feature of the show in this respect was the magnificent bank of Cyclamens staged by Messrs. R. P. Ker & Son, of the Aigburth Nurseries, Liverpool, which, for size and colour of the flowers, as well as floriferousness, it would be difficult to beat. Such a strain as this one rarely sees; it was prettily fringed with Adiantum Farleyense, while a nice specimen of A. rhodophyllum graced the front in the middle.

FRUIT.—The display of fruit was unusually large, the classes in most cases being keenly contested; especially was this the case in the lesser ones: the perfect finish, size of berry, and unusual goodness of the winning bunches was all that could be desired. Especially worthy of mention were the two bunches of Black Alicante staged by Mr. T. Elsworthy, gr. to T. R. Gladstone, Esq. Mr. Mease showed two fine examples of Pitmaston Duchess Pears, the couple weighing 3 lb. 4 oz., perfect in form and colouring; these were not for competition. Pine-apples were largely shown, and were of good weight and appearance; indeed, one might brand everything staged with some special mark of recognition, but space will not permit of this, and we heartily congratulate the committee upon their success in connection with public exhibitions. Below are detailed the principal collections and prize-winners.

CUT BLOOMS.—The most important class was for thirty-six distinct blooms, eighteen incurved and eighteen Japanese, the 1st prize being a Silver Cup value 10 guineas, presented by Messrs. J. Williams & Co., which was taken by Mr. W. Mease, gr. to C. W. Neumann, Esq., Wyncote, Allerton, with what was generally admitted to be the finest stand. It consisted of the following varieties:—Incurved: Lord Alcester, Queen of England, Emily Dale, Empress of India, John Salter, Golden Empress, Hero of Stoke Newington, Jeanne d'Arc, Barbara, Princess of Wales, Sir Stafford Carey, Princess of Teck, Lady Carey, Mrs. Heale, Princess Beatrice, Mabel Ward, St. Patrick, and Mrs. W. Shipman. Japanese: Sultan, Soleil Levant, Madame C. Andiguier, Fair Maid of Guernsey, Japonaise, M. Ardenne, Meg Merrilies, Comtesse de Beauregard, Boule d'Or, F. A. Davis, M. Tarin, Peter the Great, Thunberg, Duchess of Albany, Elaine, Criterion, Comte de Germiny and Belle Pauline—all the Japanese flowers being especially good in all points. 2d, Mr. F. Roberts, gr. to W. D. Holt, Esq., West Derby; followed by Mr. T. Leadbetter, gr. to R. N. Dale, Esq., Brown Hall. Mr. Roberts' collection was very fine, and contained some perfect flowers of the Japanese section, viz., Peter the Great, Alba plena, Triomphe de la Rue de Châtelet, Baron de Prailly, and Thunberg; Incurved: Lady St. Clare, Mrs. Heale, Princess of Wales, and Golden Empress. In the class for twenty-four incurved varieties, distinct, Mr. W. Mease again took the lead, with a most meritorious lot, stout, large, full, and charmingly arranged, as follows:—John Salter, Golden Empress, Princess of Wales, Emily Dale, Lord Alcester, Lord Wolseley, Empress of India, Queen of England, Jeanne d'Arc, Barbara, White Venus, Lady Carey, Princess of Teck, Beauty, Prince Alfred, Hero of Stoke Newington, Mrs. W. Shipman, Lady Hardinge, Princess Beatrice, St. Patrick, Cherub, Miss Mary Morgan, Mrs. Heale, and Refulgence; followed by Mr. J. Jellico, gr. to F. H. Gossage, Esq., Woolton, in whose lot very fine flowers were noticeable, especially Emily Dale, Barbara, Princess Beatrice, and Jeanne d'Arc. For eighteen incurved varieties, distinct.—Mr. G. Mease, gr. to W. Nicol, Esq., St. Michael's Mount, took 1st honours with a splendid stand; while Mr. G. Eaton, gr. to W. H. Shirley, Esq., Allerton House, was 2d; and Mr. A. R. Cox, gr. to W. H. Watts, Esq., Elm Hall, Wavertree, was 3d. The first lot contained fine examples of Lord Alcester, Miss Mary Morgan, Sir S. Carey, Mrs. Heale, St. Patrick, and Lady Carey. Mr. W. Mease again took the lead in the

corresponding class for twelve varieties, staging the same varieties as noticed in the premier collection, which Mr. G. Broady, gr. to J. H. Jones, Esq., and Mr. E. Green, gr. to John Woolwright, Esq., were 2d and 3d respectively. Twenty-four Japanese, distinct.—1st, Mr. W. Mease, with a magnificent stand, both in size and finish of the flowers, including all the leading and some new kinds, as follows :—Criterion, Dormilion, Belle Pauline, Japonaise, Fair Maid of Guernsey, Soleil Levant, Comte de Germiny, Mons. Tarin, Sultan, Meg Merrilies, Boule d'Or, Madame D. Andiguier. F. A. Davis, Curiosity, The Khedive, Duchess of Albany, Baronne de Prailly, Hiver Fleuri, Dr. Macary, Tintamarre, Sarnia, M. Desbreaux. 2d, Mr. J. Jellico, whose best flowers were Red Dragon, Elaine, J. Delaux, Peter the Great; 3d, Mr. T. Leadbetter. Eighteen Japanese, distinct. – 1st, Mr. John Martin, gr. to W. J. Bateman, Esq., Allerton; 2d, Mr. G. Mease; 3d, Mr. W. Wilson, gr. to H. Cunningham, Esq., Gateacre, all the lots being good, Mr. Martin having excellent flowers of sorts similar to those seen in the other good stands. In the class for twelve Japanese, Mr. T. Roberts took the lead, followed by Mr. G. Eaton and Mr. G. Broady in the order named. For six Anemone and six reflexed varieties, distinct, Mr. J. Jellico received the 1st award. Reflexed : Golden Christine, Dr. Sharpe, King of Crimsons, Mr. Forsyth, Chevalier Domage, and Salmon Christine ; Anemone-flowered : Lady Margaret, Acquisition, Bijou, Mons. Chaté, Georges Sand, and Princess Louise. 2d, Mr. E. Green ; 3d, Mr. T. Leadbetter. Twelve pompons, in not less than six varieties.—1st, Mr. T. Foster, gr. to John Brancker, Esq., Green Bank, Wavertree, with a very charming little stand of the following varieties :—Bob, Aigle d'Or, Madame Marthe, Aurora Borealis, Mrs. Dix, Golden Madame Marthe, Rosinante, and Snowball ; 2d, Mr. A. Collins, gr. to S. Smith, Esq., M.P., Prince's Park ; 3d, Mr. A. R. Cox. Six incurved and six Japanese, for which special prizes were offered by Messrs. Dixon & Co., Amhurst Nurseries, Hackney, London, the 1st prize being for twenty-four plants of new Chrysanthemums. There was a very keen competition, a large number of stands being entered, the 1st award falling to Mr. C. Osborn, gr. to N. Staveley Taylor, Esq., Allerton, with the following :—Japanese : Criterion, Fair Maid of Guernsey, Meg Merrilees, Madame C. Andiguier, Peter the Great, and Triomphe de la Rue de Châtelet ; Incurved : Princess of Wales, Queen of England, Golden Empress, Barbara, Princess Teck, and Mrs. Halliburton. 2d, Mr. C. Waring.

CHRYSANTHEMUMS IN POTS. — Six large-flowered, distinct.—1st, Mr. J. Hughes, gr. to H. McIver, Esq., Elmswood, Allerton, with a handsome set of well-grown, even-flowered plants of the following varieties :—Lady Slade, Lady Hardinge, Princess of Wales, Beverley, John Salter, and George Glenny. 2d, Mr. C. Finnigan, Winter Gardens, New Brighton ; 3d, Mr. W. Bustard, gr. to James Lewis, Esq., Aigburth. Three large-flowered, distinct, in which Mr. J. Hughes again took the lead, followed by Mr. Thos. Blackman, gr. to Major Pemberton, Fairfield ; the same exhibitor being 1st in the class for six pompons, while Mr. J. Hughes was 2d, both staging excellent collections ; the first consisted of golden, lilac, and white Cedo Nulli, Lady Isabella, Dun Drin, and St. Thais ; 3d, Mr. W. Bustard. In the class for three pompons Mr. J. Hughes was 1st, with lilac and white Cedo Nulli, and Maroon Model ; followed by Messrs. T. Blackman and Bustard respectively. One standard.—1st, Mr. E. Green, with a charming specimen of Mrs. Dixon ; 2d and 3d, Mr. J. Hughes and Mr. W. H. Joliffe. One pyramid.—1st, Mr. J. Hughes, with a well trained, copiously flowered Mrs. G. Rundle.

MISCELLANEOUS PLANTS.—Six stove and greenhouse, not less than three in flower.—1st, Mr. W. Mease, with a nice lot ; 2d, Mr. A. K. Cox ; 3d, Mr. J. Vaughan, gr. to R. Coltart, Esq., Aigburth Road ; Mr. Cox was 1st in a similar class for four plants. Six stove or greenhouse Ferns.—1st, Mr. A. R. Cox, with charming specimens ; 2d, Mr. W. Evans. Three Orchids, in which there was sharp competition.—1st, Mr. E. Green, gr. to J. Woolwright, Esq., Moseley Hill, with good plants of Oncidium varicosum Rogersi, Odontoglossum Alexandræ, a good spike carrying fourteen heavily blotched flowers with broad segments ; and Odontoglossum grande ; 2d, Mr. Grantham, gr. to R. Young, Esq., Sefton Park, with Vanda cœrulea, Oncidium ornithorhynchum, and Odontoglossum Roezlii album : 3d, Mr. J. Edwards. One Orchid.—1st, Lieut.-Col. Wilson, The Hermitage, Aigburth, with a splendid copiously flowered specimen of Oncidium varicosum Rogersi ; 2d, Mr. T. Worth, gr. to Enoch Harvey, Esq., Aigburth, with a dense basket of Dendrobium heterocarpum ; 3d, T. J. Young, Esq., Bootle, with Oncidium Gardnerianum crispum. Two Calanthes.—1st, Mr. A. Brown, gr. to George Webster, Esq., Over-church Hill, Upton, with two crowded 12-inch pots of C. vestita and Veitchi ; 2d, Mr. W. Mease, with similar pots of the same varieties. One Cypripedium.—1st, Mr. J. Edwards, gr. to Dr. Shadford Walker, Rodney Street, Liverpool, with a fine plant of C. Spicerianum, carrying twenty expanded and bud flowers, although not very large ; 2d and 3d, Mr. W. Evans, and Mr. W. Mease, both staging C. insigne. Six Chinese Primulas.—1st, Mr. E. Brown, gr. to George Webster, Esq., six magnificent plants being staged, varying in colour and very large flowered ; 2d, Mr. A. Collins, Our space forbids mention of other classes.

FRUIT.—Twelve dishes, distinct varieties, the 1st award being given to Mr. Wm. Hannagan, The Gardens, Hooton Hall, for a splendid series, as follows—Grapes : Muscat of Alexandria, Black Alicante, Gros Colmar, and Mrs. Pince ; Pears : Beurré Diel, Doyenné du Comice, Glou Morceau, and Chaumontel ; Apples : Ribston Pippin, Blenheim Orange, and King of the Pippins ; and Melon Conqueror of Europe. 2d, Mr. J. H. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, Derby, who also staged a fine lot. Six dishes, Pines excluded.—1st, Mr. James Hurst, with Muscat of Alexandria and Alicante Grapes, two Apples and two Pears, Beurré Diel being particularly fine ; 2d and 3d, Mr. Hannagan and Mr. J. H. Goodacre. Two Pine-apples.—1st, Mr. D. Roberts, gr. to Hussey Packe, Esq., Prestwold, Hull, with Smooth Cayenne—a handsome specimen, weighing 6½ lb ; 2d, Mr. W. Speed, gr. to Lord Penrhyn, Penrhyn Castle, Bangor, with Smooth Cayenne ; 3d, Mr. G. Gibson. Grapes : Two bunches, Black Muscat flavour.—1st, Mr. J. Hollingworth, gr. to C. M. Campbell, Esq., Uttoxeter, with rich examples of Black Muscat and Mrs. Pince ; 2d, Mr. Goodacre, with Muscat Hamburgh ; 3d, Mr. A. Collins. In the corresponding class for two bunches, without Muscat flavour, Mr. T. Elsworthy was well to the front, with splendidly finished examples of Alicante ; 2d and 3d, Messrs. R. Brownhill and G. Lounder, gr. to S. S. Powker, Esq , Aigburth, each exhibitor staging the same variety. Two bunches white (Muscat flavour).—The prizes were awarded in the following order :—Mr. G. Middleton, gr. to R Pilkington, Esq., Rainford Hall ; Mr. P. Mottershead, gr. to H. S. Woodcock, Esq., Wigan ; and Mr. J. Brierley, gr. to G. D. Adamson, Esq., Didsbury, all staging Muscat of Alexandria, but Mr. Middleton's well merited the honour. In the class for two bunches of other varieties, Mr. J. Hollingsworth was 1st with splendid examples of Golden Queen ; 2d and 3d, Messrs. P. Ingham and T. Elsworthy, with the same variety. Four bunches, distinct.—1st, Mr. J. Hollingsworth, with Golden Queen, Trebbiana, Lady Downe's, and Black Alicante ; 2d, Mr. T. Elsworthy ; 3d, Mr. C. A. Young, gr. to Jos. Evans, Esq., J.P., Prescott. Pears, eight dishes dessert.—1st, Mr. Wm. Hannagan, with splendid dishes of Marie Louise, Beurré Diel, Duchesse d'Angoulême, Glou Morceau, Beurré d'Aremberg, Chaumontel, Doyenné du Comice, and Louise Bonne of Jersey. Four dishes. — 1st, Mr. William Mease, with perfection in Beurré Easter, Beurré Diel, Beurré Bachelier, and Marie Louise. Apples, six dishes, dessert.—1st, Mr. F. Miller, gr. to J. F. Friend, Esq., Northdown, Margate, with well-honoured dishes of Adam's Pearmain, King of Pippins, Cox's Orange Pippin, and two dishes of Ribston Pippin. Eight dishes, culinary.—1st, Mr. Goodwin, which was well merited, with excellent dishes of Mère de Ménage, Lady Henniker, Kentish Fillbasket, Flower of Kent, Waltham Abbey, Warner's King, and another.

NON-COMPETING EXHIBITS.—In addition to Messrs. R. P. Ker & Son's group, previously mentioned, Messrs. Turner Bros., The Liverpool Horticultural Company (John Cowan), Limited, contributed materially to the exhibition with large groups of the choicest foliaged and flowering plants ; while Messrs. Cannell & Sons, of Swanley, made a gorgeous display with four dozen large bunches of double and single zonal Pelargoniums, Chinese Primroses, and a large stand of single Chrysanthemums. Messrs. F. & A. Dickson & Son, of Chester, staged about eighty excellent dishes of Apples, while Messrs. R. Smith & Co., Worcester, and Charles Rylance, of Ormskirk, made similar displays.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, NOVEMBER 26, 1884.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					HYGROMETRICAL DEDUCTIONS FROM GLAISHER'S TABLES 6TH EDITION		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
Nov.	In.	In.	°	°	°	°	°	°				In.
20	29.85	+0.15	45.5	35.5	10.0	40.1	— 1.6	33.9	81	W.N.W		0.03
21	29.71	+0.02	42.5	35.0	7.5	38.8	— 2.9	33.4	82	W.N.W		0.04
22	29.91	+.25	42.0	31.5	10.5	37.1	— 4.6	33.5	87	N. W.N.W		0.00
23	29.56	+0.28	41.0	31.5	9.5	36.0	— 5.7	31.8	88	W.N.W		0.03
24	29.96	+0.28	38.0	29.0	9.0	33.3	— 8.3	31.0	91	W.N.W		0.00
25	30.08	+0.40	37.5	25.2	12.3	31.3	— 10.3	28.0	89	W.N.W		0.00
26	30.09	+0.39	42.5	31.5	11.0	37.7	— 3.9	34.7	89	W.		0.02
Mean	29.94	+0.25	41.3	31.3	10.0	36.3	— 5.3	32.6	87	W.N.W		0.09

Nov. 20.—Dull day. Fine, clear, cold night.
— 21.—Dull morning, drizzling rain, rough wind nearly all day and night. Fine and clear at 10 P.M.
— 22.—Dull, cold day and night.
— 23.—Fine and clear throughout the day. Fine, but hazy.
— 24.—Dense fog all the morning. Few snowflakes at 3 P.M. Fine, cold night.
— 25.—Dense fog all the morning. Fine afternoon and night.
— 26.—Dense fog all the morning. Fine afternoon and night.

LONDON : *Atmospheric Pressure.*—During the week ending November 22, the reading of the barometer at the level of the sea decreased from 30.39 inches at the beginning of the week to 30.27 inches by 3 P.M. on the 16th, increased to 30.31 inches by 9 A.M. on the 17th, decreased to 30.24 inches by 3 P.M. on the same day, increased to 30.49 inches by 3 P.M. on the 19th, decreased to 29.81 inches by 9 A.M. on the 21st, increased to 30.15 inches by 9 A.M. on the 22d, decreased to 30.10 inches by 3 P.M. on the 22d, and was 30.11 inches by the end of the week.

The mean reading of the barometer for the week was 30.20 inches, being 0.18 inch lower than last week, and 0.31 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 45°.5, on the 20th ; the highest on the 16th was 40°. The mean of the seven high day temperatures was 42°.9.

The lowest temperature was 31°.5, on the 22d ; on the 19 h and 20th the lowest temperature was 35°.5. The mean of the seven low night temperatures was 34°.2.

The greatest range of temperature in one day was 10°.5, on the 22d ; the smallest was 7°, on the 16th. The mean of the seven daily ranges was 8° 7.

The mean temperatures were—on the 16 h, 37° ; on the 17th, 38°.4 ; on the 18th, 39° 7 ; on the 19 h, 40° ; on the 20th, 40°.1 ; on the 21st, 38°.8 ; on the 22d, 37°.1 ; and these were all below their averages by 5°.2, 3°.6, 2°.2, 1°.8, 1°.6, 2°.9, and 4°.6 respectively.

The mean temperature for the week was 38°.7, being 6° lower than last week, and 3°.1 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 78°, on the 19th. The mean of the seven readings was 60°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 24°, on the 22d. The mean of the seven readings was 27°.

Rain.—0.07 inch fell during the week.

ENGLAND : *Temperature.*—During the week ending November 22, the highest temperatures were 51° at Truro, 49° at Plymouth and Leeds ; the highest temperature at Brighton was 43°.5, at Blackheath 45°.5. at Wolverhampton 45°.8. The general mean was 47°.2.

The lowest temperatures were 27°.6 at Wolverhampton, 27°.8 at Bristol, 29° at Truro ; the lowest at Liverpool was 35°.5, at Sheffield, Leeds, and Sunderland 35°. The general mean was 32°.

The greatest ranges were 22° at Truro, 20°.6 at Bristol, 18°.2 at Wolverhampton ; the smallest ranges were 11°.5 at Liverpool, 12° at Sunderland, and 12°.9 at Bradford The general mean was 15°.2.

The mean of the seven high day temperatures was highest at Truro, 48°.4, at Plymouth 47°.5, at Leeds 45°.5 ; and was lowest at Wolverhampton, 41°.7, at Brighton 41°.8, at Blackheath 42°.9. The general mean was 44°.3.

The mean of the seven low night temperatures was highest at Liverpol, 37°.8, at Leeds 37°.5, at Sunderland 37°.3 ; and was lowest at Wolverhampton, 30°.4, at Bristol 31°.2, at Bolton 33°.1. The general mean was 34°.9.

The mean daily range was greatest at Truro, 14°.3, at Bristol 13°.1, at Plymouth 12°.1 ; and was least at Sunderland, 6°.4, at Liverpool 6°.5, at Nottingham 7°.5. The general mean was 9°.4.

The mean temperature was highest at Leeds, 41°.2, at Plymouth 41°.1, at Truro 41° ; and was lowest at Wolverhampton, 35°.7, at Brighton 37°.3, at Bristol 37°.5. The general mean was 39°.3.

Rain.—The largest falls were 0.76 inch at Sunderland, 0.31 inch at Truro, 0.21 inch at Cambridge ; the smallest falls were 0.02 inch at Bolton, and 0.03 inch at Plymouth and Nottingham. The general mean was 0.13 inch. Rain fell on every day in the week at Sunderland.

SCOTLAND : *Temperature.*—During the week ending November 22, the highest temperature was 48°.5, at Greenock ; at Dundee the highest was 45°.4. The general mean was 46°.6.

The lowest temperature in the week was 24°, at Glasgow ; at Leith the lowest temperature was 33°.5. The general mean was 30°.3.

The mean temperature was highest at Leith, 40°.4 ; and lowest at Glasgow, 35°.2. The general mean was 38°.3.

Rain.—The largest fall was 0.62 inch, at Aberdeen, and the smallest fall was 0.04 inch, at Paisley. No rain fell at Glasgow or Greenock. The general mean was 0.12 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."—BACON.

CALANTHES DISEASED. — Mrs. Berrington would be much obliged if the Editor could tell her the reason of her Calanthes dying? Hitherto they have flourished well, but this year, under similar treatment, they are rotting away. Can it be anything in the soil? She sends a specimen to be investigated. [The appearances of this disease in Orchids are new to us. On making a microscopical examination of the softer parts of the pseudobulbs they are seen to be infested with the microscopic worms called Nematodes. As these nematoid worms are known to be capable of setting up disease in many other plants, it is quite possible that your Calanthes are dying from their presence in the tissues. The dead and dying material should be removed and burnt. ED.]

Answers to Correspondents.

ADIANTUM BAUSEI: *Garrick.* The specimen does not show the chief peculiarity of A. Bausei, namely, the deflexed pinnules, by which it may at once be recognised when growing. The plant then looks as if the pinnules were drooping for want of water. Yours has the appearance of a young frond of A. tenerum or Ghiesbreghtii.

APPLE SHOOTS DISEASED: *G. Brown.* The shoots are very much cankered, for which there is no certain remedy known. You can assist the trees by keeping the roots near the surface, and by supplying them with strong loam mingled with rotten manure. You will find, where it is practicable, that lifting and replanting will benefit the trees, if carefully done, more than root-pruning alone. The lichen on the shoots is the result of your damp climate; it does no harm, except as a harbour for insects, as it is not a parasite.

BOOK: *G. F.* The book you name is out of print. Burbidge's *Domestic Horticulture* is better.

CHRYSANTHEMUMS SHOWING THE DISC: *E. C.* This is often caused by too severe disbudding for the particular sort, a warm dry atmosphere, and overfeeding with manure-water. The are, in fact, stimulated too much.

ERRATUM.—In our report of the show held at Southampton, November 6 and 7, the name of Mr. A. Pragnell, gr. to B. Turner, Esq., Ardnave Bassett, who gained 1st prize in the class for twelve cut blooms, was omitted. This class was for those who had not previously won a prize for Chrysanthemums.

FERN DISEASED: *G. Paton.* The injury appears to be the work of some of the small leaf-mining insects, but we do not remember to have met with it before.

LAPAGERIA BLOOM: *W. Millard.* These often come in bunches and triplets as yours have done. It did not appear to be higher in colour than many other of the improved forms.

LECTURES IN LONDON: *William Robinson.* We do not know if the lectures are in print. *Plant Life*, by Dr. M. T. Masters, F.R.S. (Bradbury, Agnew & Co.), will give you the information you want.

MIXTURE FOR TREES AS AGAINST RABBITS, &C.: *X. Y.* A paint made of clay, cowdung, and soot, slightly flavoured with spirits of tar, or tar itself, applied as far up as the animals can reach standing on their hind-legs. When smeared with the fatty side of bacon rind hares will not touch the stems of fruit trees.

NAMES OF FRUIT: *Mr. Garrow. Pears:* A, Autumn Colmar; B, Comte de Lamy.—*George Donaldson.* 1, Lord Derby; 2, Tower of Glamis; 3, Beauty of Kent. Nos. 1 and 2 very fine examples.—*J. S., Stroud.* 1, Beurré Bachelier; 2, Beurré Diel; 3, Comte de Lamy; 4, Premier.—*James Ellis.* Nelson Codlin.

NAMES OF PLANTS: *Carter, Page & Co.* Juglans nigra (the American Black Walnut.—*W. F. Piper.* Dendrobium formosum giganteum—a remarkably fine bloom.—*W. H.* Lavandula Stœchas.

POPPIES AT TILBURY AND GRAYS GROWING WILD ON THE BANKS OF THE THAMES: *S.* Not recognised.

POTATO DISEASE: *Old Potato Grower.* First noticed in Germany in 1830, gradually spread till in 1842, at Liége, Belgium, it assumed a very serious form. It appeared in Canada in 1844.

PRIMULA LEAVES TURNING YELLOW: *Primula.* The foliage was affected with red-spider, of which pest we found several on it. Have you applied flowers of sulphur to the plants, and then not carefully washed it off? Not to do this is fatal to the well-being of the plants so treated. The foliage turns yellow from a close cold atmosphere, and from an ill-ventilated warm one. As you give no particulars of their culture, we are unable to say with accuracy what is the matter.

RASPBERRIES: *The Gardener, Almora Hall.* Such occurrences have been very common during the past autumn, both in these fruits and others, and plants rarely seen in bloom at so late a time have been opening their flowers quite recently.

ROSES FOR FORCING: *A. Folkinghorn.* These are very numerous, and one grower may succeed with some, and fail with others. Try Alfred Colomb and Général Jacqueminot; they are both dark, and force with certainty.

ROSE OF SHARON: *J. T.* It is not possible to say definitely what is the plant intended. The name has been variously applied. The Oleander or the Polyanthus Narcissus, which grow in the Plain of Sharon, has as good a title as any to the name. In gardens Hypericum calycinum is sometimes so called, but it is not a Rose and does not occur in the Holy Land. Some of the so-called everlasting plants (Gnaphalium) are also called Rose of Sharon. The plant is mentioned in the "Song of Solomon," chap. ii., v. 1, but nowhere else that we know of.

SPHAGNUM: *C. H.* Both A and B are samples of "real" sphagnum, the only difference is that A is dead and B alive; both are useful, the former for mixing with composts, and the latter for "dressing off" with and other particular work.

THE DOVER YEW: *W. Barron.* We are glad to see by the shoot sent that the tree still lives—"flourishing" is scarceiy the word.

XYLOPHYLLA LATIFOLIA: *W. S., Shoreham.* The apparent leaf is really a flattened branch; flowers, as a rule, do not grow on leaves. The plant is allied to Euphorbia, and is a native of the West Indies. The Fern is Phlebodium aureum.

CATALOGUES RECEIVED.

H. & F. SHARPE, Wisbech—Trade List of Seed Potatos.
RICHARD DEAN, Ealing—Now and Choice Potatos.
JAMES DICKSON & SONS, Edinburgh—Seedling and Transplanted Forest Trees.
LOUIS VAN HOUTTE, Ghent, Belgium—Trees, Shrubs, &c.
J. VANDER REES (late R. Parker), Exotic Nursery, Garrett Lane, Tooting, Surrey, S.W.—General Nursery Catalogue.
A. JEFFKINS & CO., Westerham—General.
STEPHEN BROWN, Weston-super-Mare—Plants, Roses, Fruit Trees, &c.
C. B. SAUNDERS, St. Saviour's, Jersey—Fruit Trees, &c.
WOOD & INGRAM, Huntingdon—General, and Alpine and Herbaceous Catalogues.
J. M. THORBURN & CO., New York—American Seeds.

COMMUNICATIONS RECEIVED.—John McL.—W. Longthaw.—H. H. Ward.—Sutton & Sons.—J. Hudson.—W. Swan.—J. O'B.—W.—G. W.—A. D.—E. Chadwick.—R. D.—J. McIndoe.—Ben.—M. Saul.—H. E.—R. F. J.—J. R.—W. L.—W. H. Divers.—W. J. M.—T. T.—E. Serpell.—J. T.—S. W.—J. B. S.—G. R. J.—H. C., Geneva.—M. D. (with thanks).—A. O. S.—J. T. B.—Asa Gray.—W. E. G.—H. S., Geneva.—G. N.—R. M. C.—Sir T. L.—F. M., Glasnevin.—V. B.—J. T.—E. M.—C. N.—J. D.—E. B.—H. Carter.—W. Sills.—John McLean.—R. Kirk.—J. Elliss.—Cannell & Sons.—W. Rollis Fryer.—F. W. B.—J. Stewart & Sons.

DIED, on the 22d inst., at Brighton, JOHN EDWARD MEEK, of Poulett Lodge, Twickenham, and of 195, St. John Street, Clerkenwell, aged forty-seven.

Markets.

COVENT GARDEN, November 27.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

A GOOD supply of St. Michael Pines now to hand, and prices of home-grown fruit much depressed. Nova Scotia and Canadian Apples in heavy consignments, price unaltered. Kent Cobs still dull. *James Webber, Wholesale Apple Market.*

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0
Arum Lilies, 12 blms.	4 0-	6 0
Azalea, 12 sprays	1 0-	1 6
Bouvardias, per bun.	0 9-	1 0
Camellias, per doz	2 0-	6 0
Carnations, 12 blms.	1 0-	2 0
Chrysanth., 12 bun.	2 0-	6 0
— large, 12 blooms	0 6-	2 0
Cyclamen, 12 blooms	0 3-	0 6
Eucharis, per doz.	3 0-	6 0
Gardenias, 12 blms.	9 0-	18 0
Heliotropes, 12 sp.	0 6-	1 0
Lapageria, white, 12 blooms	2 0-	3 0
— red, 12 blooms	1 0-	2 0
Marguerites, 12 bun.	3 0-	6 0
Mignonette, 12 bun.	1 0-	4 0
Pelargoniums, per 12 sprays	1 0-	2 0
— scarlet, 12 sprays	0 6-	0 9
Primula, double, bun.	1 0-	1 0
Roses (indoor), doz.	2 0-	6 0
— (outdoor), 12 bun.	6 0-	12 0
Tropæolum, 12 bun.	1 0	2 0
Tuberoses, per doz.	1 0-	1 6
Violets, 12 bun.	1 0-	1 6
— French, bunch	1 6-	2 0
— Parme, French, per bunch	4 0-	5 6
Wal flower, 12 bun.	4 0-	6 0
White Jasmine, per bunch	0 6-	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0
Arbor-vitæ (golden), per dozen	6 0-	18 0
— (common), dozen	6 0-	12 0
Begonias, per doz.	4 0-	12 0
Bouvardia, dozen	9 0-	18 0
Chrysanth., dozen	4 0-	9 0
Cyperus, per dozen	4 0-	12 0
Dracæna terminalis. per dozen	30 0-	60 0
— viridis, per doz.	12 0-	24 0
Erica, various, doz.	9 0-	18 0
Euonymus, various, per dozen	6 0-	18 0
Evergreens, in var., per dozen	6 0-	24 0
Ferns, in variety, per dozen	4 0-	18 0
Ficus elastica, each	1 6-	7 0
Foliage Plants, various, each	2 0-	10 0
Marguerite Daisy, per dozen	8 0-	15 0
Myrtles, per doz.	6 0-	12 0
Palms in variety, each	2 6-	21 0
Pelargoniums, scarlet, per dozen	4 0-	6 0
Primula sinensis, per dozen	4 0-	6 0
Solanums, dozen	9 0-	12 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	1 6-	4 0
— Nova Scotia and Canadian, barrel	10 0-	24 0
Cobs, per 100 lb.	60 0-	62 6
Grapes, per lb.	0 6-	3 0
Lemons, per case	21 0-	
Melons, each	1 6-	3 0
Pine-apples, Eng., lb.	4 0-	6 0
Pears, French, doz.	1 6-	3 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Artichokes, Globe, per doz.	4 0-	6 0
Beans, French, lb.	0 6-	
Beet, per doz.	1 0-	
Cabbages, per doz.	1 6-	2 0
Carrots, per bun.	0 6-	
Cauliflowers, English, dozen	1 0-	2 6
Celeriac, per root	0 4-	
Celery, per bundle	1 6-	2 6
Cucumbers, each	0 6-	1 0
Endive, English, per dozen	1 0-	
Garlic, per lb.	0 6-	
Herbs, per bunch	0 2-	0 4
Horse Radish, bun.	3 0-	4 0
Lettuces, Cabbage, per dozen	1 6-	
— Cos, each	0 2-	
Mint, green, bunch	0 9-	
Mushrooms, p. baskt.	1 0-	2 0
Onions, per bushel	4 0-	
— Spring, per bun.	0 6-	
Parsley, per bunch	0 4-	
Radishes, per doz.	1 6-	
Salsify, per bund.	1 0-	
Seakale, per punnet	1 6-	2 0
Small salading, per punnet	0 4-	
Spinach, per bushel	2 0-	
Tomatos, per lb.	0 6-	1 0
Turnips, bun.	0 5-	

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.* Champions, 45*s.* to 60*s.* per ton. Trade very quiet.

SEEDS.

LONDON: *Nov.* 26.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that there was scarcely any business transacted on the seed market to-day, the attendance being very limited; indeed, the indisposition to operate, which has now for so long characterised the seed trade, shows no symptoms at present of disappearing. Clover seeds all round are without change in value. Canary seed moves off very slowly. In Hemp seed the tendency against holders continues. Blue boiling Peas and Haricot Beans sell more freely, owing to the colder weather. Feeding Linseed is quiet.

CORN.

At Mark Lane on Monday, there was no tangible improvement in the Wheat trade, either in tone or quotations. Flour was quoted 6*d.* lower for the week in the face of very small receipts. Barley met only a limited sale, without appreciable change in value. Maize was quiet, but the small supply was held for steady value. Beans and Peas remained without alteration.—On Wednesday there was no tangible improvement in either Wheat or flour. Barley, Beans, and Peas remained without alteration, and demand quiet. Oats sustained a further rise of 3*d.* For Maize prices were very firm and still hardening. Average prices of corn for the week ending Nov. 22:—Wheat, 31*s.* 1*d.*; Barley, 31*s.* 5*d.*; Oats, 19*s.* 5*d.* For the corresponding period last year:—Wheat, 40*s.* 5*d.*; Barley, 32*s.* 10*d.*; Oats, 19*s.* 7*d.*

CATTLE.

At the Metropolitan Market on Monday trade in beasts was assisted in some measure by the country demand, and prices were upheld, although in consequence of the dull state of the dead meat markets the Metropolitan demand was very limited, and sales in this direction progressed very slowly. The sheep supplies could hardly be called heavy, but they were quite equal to the demand, and the tendency was rather downward than otherwise. Quotations:—Beasts, 4*s.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 5*s.* 10*d.*; calves, 3*s.* 8*d.* to 5*s.* 8*d.*; sheep, 4*s.* 10*d.* to 5*s.* 4*d.*, and 5*s.* 10*d.* to 6*s* 6*d.*; pigs, 3*s.* 8*d.* to 4*s.* 4*d.*—On Thursday beasts were firm, and quite as dear as on Moaday. Sheep were inactive, without change, and calves were scarce and wanted. Pigs were dull.

HAY.

Tuesday's Whitechapel Market report states that supplies were small in consequence of the rough weather on the preced ng day. Trade was very dull, with a drooping tendency in prices. Quotations:—Clover, prime, 95*s.* to 108*s.*; inferior, 40*s.* to 75*s.*; prime second cut, 90*s.* to 108*s.*; hay, prime, 80*s.* to 90*s.*; inferior, 30*s.* to 65*s.*; and straw, 28*s.* to 34*s.* per load.—On Thursday there was a good supply, and the trade was very dull, at Monday's rates.—The Cumberland Market report states that there was a slightly better demand, owing to the frosty weather, at the following quotations:—Clover, best, 98*s.* to 108*s.*; inferior, 50*s.* to 70*s.*; meadow hay, best, 80*s.* to 84*s.*; inferior, 50*s.* to 70*s.*; and straw, 28*s.* to 34*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that best samples meet with moderate demand, whilst inferior sorts are neglected. Quotations:—Kent Regents, 70*s.* to 80*s.*; Scotch ditto, 90*s.* to 100*s.*; Essex Shaws, 50*s.* to 60*s.*; Victorias, 70*s.* to 80*s.*; Magnum Bonums, 50*s.* to 70*s.*; Champions, 50*s.* to 65*s.*; and French, 40*s.* to 50*s.* per ton.—The imports into London last week consisted of 1045 bags from Hamburg, 4 from Antwerp, 320 from Harlingen, and 30 from Rotterdam.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Harton, 16*s.*; Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.*; Hetton Lyons, 16*s.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; Hartlepool, 17*s.*; Hulam, 16*s.* 3*d.*; East Hartlepool, 17*s.* 3*d.*; South Hartlepool, 16*s.* 3*d.*; Tees, 18*s.* 3*d.*

Government Stock.—Consols closed on Monday at 100⅞ for delivery, and 100⅛ for the account. Tuesday's figures were 100⅛ to 100⅜ for both delivery and account. The closing prices of Wednesday were 100⅜ to 100⅝ for delivery, and 100⅛ to 100⅜ for the account. The finishing figures on Thursday were 100⅜ to 100⅝ for both delivery and the account.

SPECIAL CULTURE OF

FRUIT TREES and ROSES.

A large and select stock is now offered for sale.

The Illustrated and Descriptive CATALOGUE of FRUITS post-free.

The Descriptive CATALOGUE of ROSES post-free.

THOMAS RIVERS & SON,

The Nurseries, Sawbridgeworth, Herts.

THE NEW RASPBERRY,

LORD BEACONSFIELD

(A SEEDLING).

The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society, 1883. Strong Canes, 15*s.* per dozen, £5 5*s.* per 100. Usual allowance to the Trade **A. FAULKNOR,**

INKPEN, HUNGERFORD.

ROSES, A GRAND COLLECTION.

ROCKWORK SHRUBS, all the best.
STANDARD ORNAMENTAL TREES, all the best.
HARDY CLIMBERS, a splendid collection.
HARDY "FLORIST" FLOWERS, including Carnations, Pæonies, Violets, Hollyhocks.

New General CATALOGUE of the above and many other things may be had gratis and post-free on application.

THOMAS S. WARE,

HALE FARM NURSERIES, TOTTENHAM, LONDON,

SPECIAL TRADE OFFER.

LILY OF THE VALLEY.

Strong selected buds for forcing at 22*s.* per 1000.

ANEMONE JAPONICA ALBA

(Honorine Joubert) at 10*s.* per 100.

Samples free on application. Cash with order. Package free.

E. KRUIJFF, Sassenheim, near Haarlem, Holland.

A SPECIALITY.

Rhododendrons and other American Plants, Grown in Sandy Loam.

A superb Collection of all the leading Varieties in Cultivation, also many thousands of RHODODENDRON PONTICUM and HYBRIDS for Plantations and Coverts.

A Sample Basket, containing Twelve Choice and Distinct Varieties, to name, for 30*s.*

These plants, being thus prepared, may be grown in any ordinary fibrous loam, without the expensive addition of peat soil or other composts.

Priced LIST on application to

JOHN CRANSTON,

KING'S ACRE, HEREFORD.

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to 10 feet high.
" laurifolia, ditto.
" Hodgins', 3, 4, 5 to 8 feet.
" myrtifolia, ditto.
" Scottica, 3 to 8 feet.
" Yellow-berried, altaclarense and others.
" Variegated, of sorts, 3, 4, 5, 6, 8 to 10 ft.
" Waterer's splendid plants, 3, 4, 5, and 6 feet, 8 to 15 feet in circumference.
" Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimens.
" Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteen years' growth, hundreds.
" new Golden Weeping, a large number of very beautiful plants.

(many thousands.)

BOX, Green and Variegated, 3, 4, 5, 6 to 7 feet, many thousands.
YEWS, Common, 3, 4, 5, 6 to 10 feet, thousands.
" Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.
" Irish, 5 to 10 feet, hundreds. [thousands.
CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6 to 8 feet,
" Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful specimens.
THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.
RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands.
JUNIPERS, Chinese, 7, 8, and 10 feet high.
" Chinese Golden, 3 to 6 feet.
JUNIPERUS VIRGINIANA GLAUCA, 3 to 5 feet.
ABIES CANADENSIS, 4 to 7 feet, hundreds.
" DOUGLASII, 3 to 5 feet, thousands.
" " GLAUCA, 2 to 4 feet, hundreds.
" ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
" HOOKERIANA, 3 to 5 feet.
" PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
" GRANDIS, 5 to 7 feet.
" LASIOCARPA, 3 to 5 feet, hundreds.
" MAGNIFICA, 2 to 3 feet, hundreds.
" NOBILIS, 1½ to 3 feet, thousands.
" NORDMANNIANA, 6, 7, to 10 feet.
" PINSAPO, 6 to 10 feet, hundreds.
" PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet.
CEDRUS DEODARA, 6 to 9 feet, hundreds.
" LIBANI (Cedar of Lebanon), 3 to 5 feet.
THUIA OCCIDENTALIS LUTEA, 3 to 6 feet, hundreds.
THUIOPSIS BOREALIS, 3 to 5 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet, hundreds.
" PISIFERA AUREA (true), 3 to 6 feet.
" PLUMOSA AUREA, 3 to 5 feet.

Knap Hill Nursery, Woking Station, Surrey

STANDARD ROSES, good plants, £3 10*s.* per 100; Dwarfs, strong, on Brier and Manetti, 30*s.* per 100. W. JACKSON, Blakedown, Kidderminster.

WILLIAM BARRON AND SON'S Descriptive CATALOGUE of Forest Trees, Conifers, and Hardy Ornamental Trees, Fruit Trees, Rhododendrons, Roses, &c., is now ready, and may be had, post-free, on application.

Elvaston Nurseries, Borrowash, near Derby.

FOR SALE, Twelve PEACHES and Two NECTARINES, true to name, in 13-inch pots—all in excellent bearing condition. For sorts and price apply to B. HOPE, Buddleton Park Gardens, Bicester.

Lovely Lilies.

WM. GORDON has still the finest collection of these. Buy of the Importer.

LILIUM ALBUM KRÆIZERI, most lovely of all Lilies, and very rare; pure white with band of lovely pea-green up the centre of each petal, which contrasts finely with the chaste white.

LILIUM MELTOMENE—the loveliest of all the speciosum rubrum tribe; its dazzling brilliancy defies competition, and the ordinary speciosum sinks into insignificance.

LILIUM BROWNII—the finest of the trumpet-shaped Lilies; creamy-white, exterior purplish-brown; massive.

The three for 5*s.* 6*d.*; six for 9*s.*, post-free.

LILIUM AURATUM, new arrival, 6*d.*, 9*d.*, 1*s.*, and 1*s.* 6*d.* each, finest possible bulbs.

WM. GORDON, Nurseries, Twickenham, Middlesex.

EPPS'S SELECTED PEAT.—40 sacks, 2*s.* 6*d.* per sack; 30 ditto, 2*s.* 9*d.*; 20 ditto, 3*s.* 6*d.*; 5 ditto, 4*s.* 6*d.*; sacks 6*d.* each. In trucks of 14 cubic yards, 11*s.* per yard. For Rhododendrons and common purposes, 14*s.* per ton, not less than 4 tons; sample sack, 2*s.* 6*d.*

LOAM, SAND, LEAF-MOULD, SPHAGNUM, &c.

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100,000 LARCH, stout transplanted, 18 inches to 3 feet; ditto Scotch, 18 inches to 2 feet. FIR, Spruce, handsome, bushy, 12 to 18 inches. Sample bundles of 100, 3*s.* ROSES, Standard and Half-Standard, of new and leading kinds, 75*s.* per 100.

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COCOA-NUT FIBRE REFUSE,

4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.

LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.

BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.

COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton; in 2-bushel bags, 4*d.* each.

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.

SPHAGNUM MOSS, 8*s.* 6*d.* per sack.

MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

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12-oz. Sample Packets, free by post, 12 stamps.

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THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

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Quality, THE BEST in the Market. (All sacks included.)

PEAT, best brown fibrous .. 4*s.* 6*d.* per sack; 5 sacks for 20*s.*
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PEAT, extra selected Orchid 5*s.* 0*d.* ,,
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PEAT MOULD ,, .. } 1*s.* per bush. (sacks included.
SILVER SAND, coarse, 1*s.* 3*d.* per bush., 12*s.* half ton, 22*s.* ton
RAFFIA FIBRE, best only .. .. .. 8*d.* per lb.
TOBACCO CLOTH, finest imported .. 8*d.* lb., 28 lb. 18*s.*
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MUSHROOM SPAWN, finest Milltrack .. 5*s.* per bushel.
SPHAGNUM MOSS, all selected 2*s.* per bush., 6*s.* per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* each; 10 sacks, 9*s.*; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.* Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated, in sacks only, 2*s.* each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,

WEST FERRY ROAD, MILWALL, LONDON, E.

KEEL'S GARDENERS' FRIEND and BLIGHT DESTROYER.—Best winter dressing for Peach Trees, &c. No painting nor washing required. Syringe as directed with Keel's Insecticide, wonderful results—destroys all Blight—imparts no flavour to Fruit—clean, healthy, and very cheap. Send orders early to W. G. KEEL, Newton-St. Loe, near Bristol (late Keel & Hawes, Bath); or to Nurserymen. Empties to Bath Station.

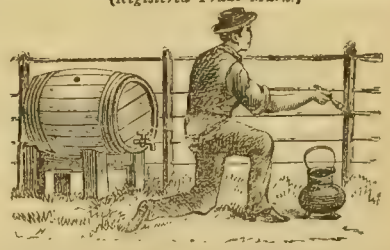
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GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.* from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

Oil Paint No Longer Necessary.

HILL AND SMITH'S BLACK VARNISH, for Preserving Ironwork, Wood, or Stone.

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This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon carriage paid to any Station in the Kingdom.

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CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

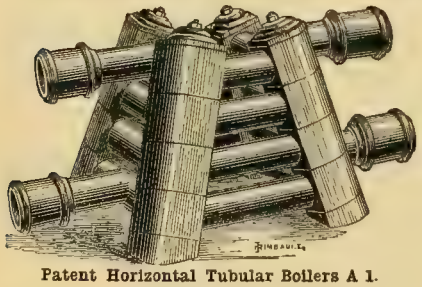
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F,	32 in.	700 ,,	12 5 0
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* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c.

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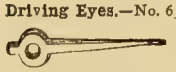


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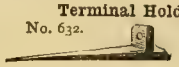
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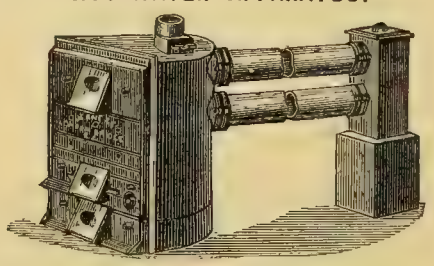


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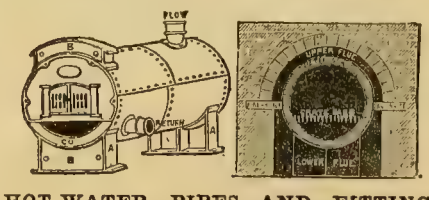
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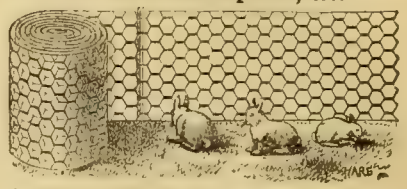


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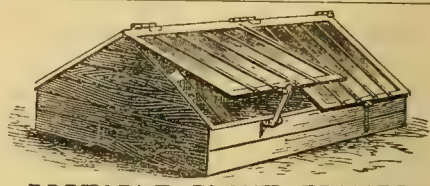
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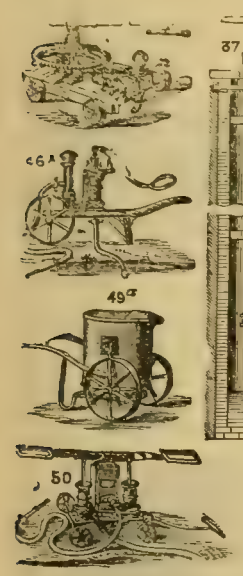
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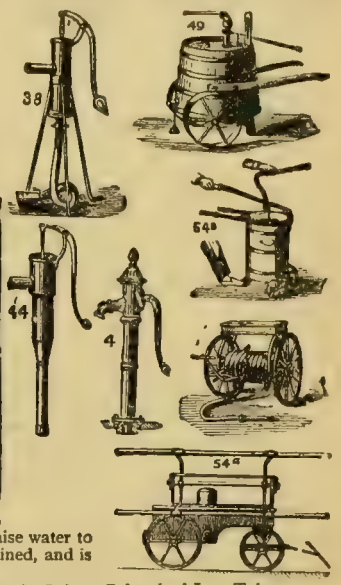
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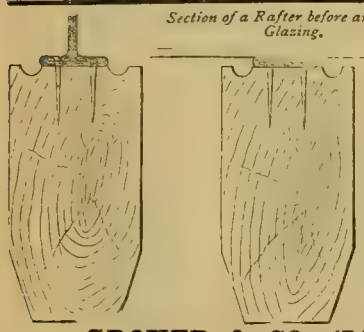
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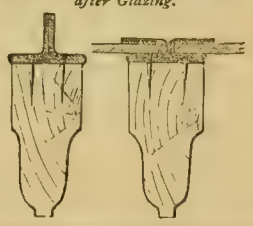
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HOT-WATER PIPES ...	... ...	2-inch, 1*s.* 0*d.*; 3-inch, 1*s.* 5*d*; 4-inch, 1*s.* 9*d.* per yard.
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16×14	20×18
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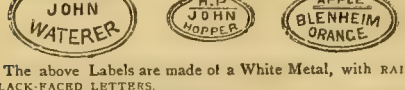
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The *Gardeners' Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."

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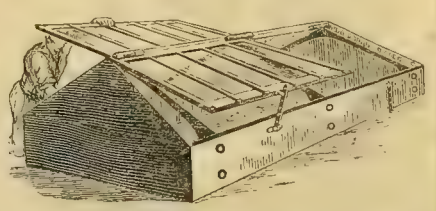
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Made of Best Wood and English 21-oz. Glass.

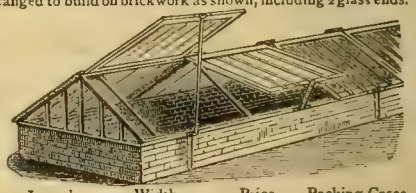
Invaluable in large gardens for protecting plants in open ground, or storing same when turned out of conservatory.

CASH PRICES, including Packing Cases.

6 feet long,	3 feet wide,	including one pair of ends	£2	2	0
12 ,,	,, 3 ,,	,, ,, ,,	3	12	0
6 ,,	,, 4 ,,	,, ,, ,,	2	14	6
12 ,,	,, 4 ,,	,, ,, ,,	4	12	6
12 ,,	,, 5 ,,	,, ,, ,,	6	0	6
12 ,,	,, 6 ,,	,, ,, ,,	7	12	6

No. 64.—Span-roof Plant Frame.

The Gardeners' favourite Frame, used for storing bedding plants in winter, and in summer for growing Melons, &c., arranged to build on brickwork as shown, including 2 glass ends.

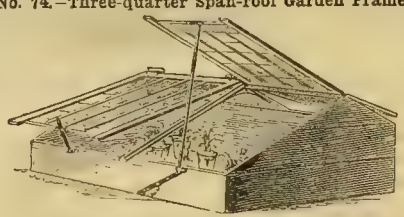


Length.	Width.	Price.	Packing Cases.
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18 ,, ..	5 ,, ..	7 5 6 ..	6 0
24 ,, ..	5 ,, ..	9 2 6 ..	7 6
30 ,, ..	5 ,, ..	11 2 6 ..	9 0
12 ,, ..	6 ,, ..	6 10 0 ..	5 0
18 ,, ..	6 ,, ..	9 0 0 ..	6 6
24 ,, ..	6 ,, ..	11 10 0 ..	8 0
30 ,, ..	6 ,, ..	14 0 0 ..	9 6

Made to any length. See Catalogue for larger sizes.

Wood for the Frames 1¼ inch thick.

No. 74.—Three-quarter Span-roof Garden Frame.

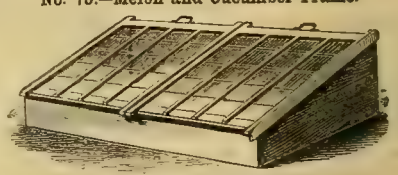


CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
No. 2 ..	8 feet ..	6 feet ..	£4 15 0 ..	5*s.* 6*d.*
No. 3 ..	12 ,, ..	6 ,, ..	6 10 0 ..	6 6
No. 4 ..	16 ,, ..	6 ,, ..	8 5 0 ..	8 0

Height in front, 11 inches, back 22 inches, centre 32 inches. Lights made to turn over. Set-opes for ventilating.

No. 75.—Melon and Cucumber Frame.



CASH PRICES, Carriage Paid.

Size.	Length.	Width.	Price.	Packing Cases.
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No. 3 ..	12 ,, ..	6 ,, ..	4 17 6 ..	4 0
No. 4 ..	16 ,, ..	6 ,, ..	6 7 6 ..	4 6

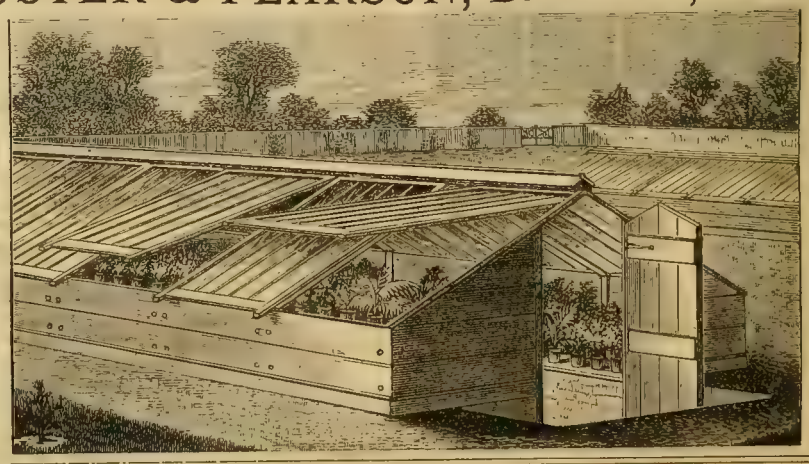
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THE

GARDENERS' CHRONICLE.

Established 1841.

No. 571.—Vol. XXII. {New Series.} SATURDAY, DECEMBER 6, 1884. {Registered at the General Post-office as a Newspaper.} Price 6d. {Post-free, 6½d.}

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NOTICE :—COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory; Scientific at 1, in the Library. GENERAL MEETING for the Election of Fellows at 3 P.M., in the Gallery of the Conservatory, on TUESDAY NEXT, December 9.
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FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey.

SEAKALE, for Forcing; VINES; PEACHES and NECTARINES in pots—fruiting trees; Dwarf Maiden FRUIT TREES, Dwarf ROSES. LIST on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

To the Trade.
ASPARAGUS, extra strong, or Forcing, Giant and Connover's Colossal, 3 and 4 years, 20s. per 1000.
E. P. DIXON, The Nurseries, Hull.

FOR SALE, Four Tons of JERUSALEM ARTICHOKES. Apply to G. COX, Leigh Park, Havant.

To Florists and Wholesale Gardeners.
PRICE LISTS WANTED, especially of ASSORTED POT PLANTS. Address—
CARL SENSENHAUSER, Kunst-u. Handelsgärtner, Pretsch-on-the-Elbe, Germany.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive consignments of GRAPES, TOMATOS, CUCUMBERS, Choice FLOWERS, &c.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM. ACCOUNT SALES sent daily, and CHEQUES forwarded weekly. BANKERS and TRADE REFERENCES. BASKETS and LABELS supplied.

WISE AND RIDES, Covent Garden, W.C., beg to inform Senders that GARDENIAS, EUCHARIS, and STEPHANOTIS are in demand.

WISE AND RIDES, Covent Garden, W.C., have now a demand for Tuberoses, Arum Lilies, White Bouvardias, good Roses, Chrysanthemums, &c.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Tomatos, Cucumbers, Gros Colmar, Alicante, and Muscat Grapes.

To Nurserymen, Private Growers, &c.
A. CATTANEO, COMMISSION SALESMAN, 44, Hart Street, and New Flower Market, Covent Garden, W.C., is open to RECEIVE CONSIGNMENTS of CHOICE CUT FLOWERS in any quantities. Terms on application.

WANTED, 400 strong Black Italian POPLAR, about 15 feet high; also 400 strong Huntingdon WILLOWS, about 12 feet high. State price, &c., to Z. WELBOURNE. The Gardens, Woodhouse, Stanstead, Essex.

Peach and Nectarine.
WANTED, an Old Noblesse PEACH and a good NECTARINE that have been well trained, and that will remove with safety. Stems about 3 feet and head 9 or 10 feet across. Price, with other particulars, to JOHN CARTER, Nursery, Keighley.

HYBRID GLADIOLI.—The cheapest and the best in the Trade. HOOPER'S WHOLESALE LIST will be forwarded on application.
HOOPER AND CO., Covent Garden, London, W.C.

Autumn Planting.
THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, have, as usual, an extensive Stock of healthy, well grown seedling and transplanted FOREST and ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., special offers of which will be made on application.

DAHLIA TUBERS.—All the best varieties of the following sections :—Show, Fancy, and Pompons, Singles; also Cactus and Semi-Cactus varieties. Special offe may be had upon application to
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

To Osier Growers, Basket Makers, and Nurserymen.
BRADFORD AND SONS, Yeovil, Somerset, now Grow and Cut yearly 100 acres and upwards of OSIER BEDS, and will quote prices to the Trade, according to quantity required.
Samples and prices of Osier "Sets" on application.

Tea Roses.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

BARR'S DAFFODILS. Now is the time to plant these.
Illustrated DAFFODIL LIST free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

HYBRID RHODODENDRONS, all colours mixed, 1½ to 2½ ft., 40s. 100. Hardy Azaleas, fine bushes in bud, 40s. 100.—W. JACKSON, Blakedown, Kidderminster.

"GLOIRE DE NANCY" CARNATION, the best white Clove in cultivation, 60s. per 100, 8s. per dozen. MRS. SINKINS, the best white Clove Pink, 30s. per 100, 4s. per dozen. OLD CRIMSON CLOVE, 30s. per 100, 4s. per dozen. All strong plants, established in pots.
POUNCE'S Nursery, Hendon, near London, N.W.

WILLIAM BARRON AND SON'S Descriptive CATALOGUE of Forest Trees, Conifers, and Hardy Ornamental Trees, Fruit Trees, Rhododendrons, Roses, &c., is now ready, and may be had, post-free, on application.
Elvaston Nurseries, Borrowash, near Derby.

Hyacinthus candicans.
BUDDENBORG BROS., BULB GROWERS, Hillegom, near Haarlem, Holland, offer the above, splendid white flowering bulb, at 50s. per 1000.

Special Offer to the Trade.
FREESIA REFRACTA ALBA.—50,000 (fifty thousand) extra strong flowering bulbs of the above offered for sale. General LIST of Cape Bulbs now ready.
ROBT. TEMPLEMAN, Colonial Seedsman and Florist, 12, Castle Street, Cape Town, Cape of Good Hope.

ROSES—ROSES—ROSES.—25,000 Dwarf Roses, H.P., strong Plants, in all the leading varieties, true to name, 5s. per dozen, 30s. per 100, £14 per 1000.
TEA ROSES, from 5-inch pots, best varieties only, 6s. per dozen, 45s. per 100—my selection. Send for sample dozen. Manetti Stocks, for budding next season, 5s. per 100, packages included.
C. ALLEN, Stone Hill Nursery, Heigham, Norwich.

Grape Vines—Grape Vines.
IRELAND AND THOMSON have a large and thoroughly ripened stock of the above in Planting and Fruiting Canes. CATALOGUES on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

RASPBERRY CANES.—An immense quantity of the choicest Carters' Prolific and Fastolf for disposal.
The Advertiser being the most extensive cultivator of Raspberries in England, special care will be taken to select Canes most suitable for a vigorous growth and an early fruiting. Lowest cash terms on application to
R. BATH, Crayford, Kent.

GOOSEBERRY TREES and Carter's Prolific RASPBERRY.—Strong 2 and 3-yr. old Lancashire Lads and Raspberry Canes for Sale.—Apply to W. WARREN, Worton Gardens, Isleworth, W.

For Sale.
RASPBERRY CANES, Red and Black CURRANT TREES, and Victoria RHUBARB SETS. Apply, R. BATH, Wansunt Farm, Crayford.

SEAKALE and ASPARAGUS. Crowns for Forcing. Apply to WILLIAM BAGLEY, Millshot Farm, Fulham, S.W.

SALES BY AUCTION.

Dutch Bulbs.—Monday, Thursday, and Saturday.
To Gentlemen, Florists, and Others desirous of Planting largely.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, THURSDAY, and SATURDAY NEXT, December 8, 11, and 13, at half-past 11 o'Clock precisely each day, extensive consignments of DUTCH BULBS, from two of the principal growers in Holland, comprising about 30,000 named Hyacinths of sorts, 20,000 Tulips, 100,000 Crocus, 2000 Polyanthus, &c., all first-class bulbs, in lots to suit large and small buyers.
On view mornings of Sale, and Catalogues had.

Tuesday Next.
The FALLOWFIELD COLLECTION of ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 9, at half-past 12 o'Clock precisely, a very valuable lot of ESTABLISHED ORCHIDS, comprising many large specimens and rare species. Among others may be mentioned :—

Dendrobium Ainsworthii
,, thyrsiflorum, a special variety.
,, densiflorum, one of the finest specimens in the country.
Cypripedium politum
,, vexillarium, probably the grandest specimen extant.
,, Sedeni superbum
Aërides maculosum
Maxillaria Sanderiana
Cœlogyne Massangeana
Cœlogyne Lemoineana
Masdevallia Wimiana.
,, Veitchii grandiflora—flowers 7 inches across.
,, Schlimii
,, ignea militaris
,, Armeni
Vanda insignis—Ainsworth's variety
Odontoglossum præstans
,, coronarium
,, aspersum
,, nevadense
Lælia furfuracea

Also an unusually grand lot of ODONTOGLOSSUM ALEXANDRÆ, from Mr. F. Sander, St. Albans.
On view morning of Sale. Catalogues of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.—Lilies, Roses, and Plants.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 10, at half-past 12 o'Clock precisely, without reserve, 15,000 unusually fine bulbs of LILIUM AURATUM, and two cases of special LILIES, just received from Japan; 300 CAMELLIAS, AZALEAS, and other PLANTS from Belgium; 600 Standard and other ROSES, of the best sorts, from an English Nursery; a collection of Hardy English-grown LILIES, including extra large bulbs of the finest varieties in cultivation; LILY of the VALLEY, SPIRÆAS, and an assortment of HARDY PLANTS and BULBS.
On view morning of Sale, and Catalogues had.

Wednesday Next.—15,000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will include in their SALE at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, December 10, at half-past 12 o'Clock precisely, 15,000 Bulbs of LILIUM AURATUM, and 2 cases of special LILIES, just received from Japan, in unusually fine condition.
On view morning of Sale, and Catalogues had.

Friday Next.
CATTLEYA ACLANDIÆ, petals primrose, lip pure white.
CATTLEYAS, from United States of Columbia.
PHALÆNOPSIS SANDERIANA, highly coloured variety.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 12, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a large quantity of choice imported ORCHIDS, in the best possible condition, comprising Cattleyas, from the United States of Columbia, which appear very distinct; C. Aclandiæ, C. amethystoglossa, Lælia purpurata, Masdevallia racemosa Crossi, Odontoglossum Alexandræ, O. Roezli, Phalænopsis Sanderiana, and also a variety from a new locality; Vanda Sanderiana, V. insignis, true; also Aërides, Angræcums, Cypripediums, and a plant found in flower by Mr. Boxall of Cattleya Aclandiæ, with a pure white lip, dried flowers of which will be on view.
On view morning of Sale, and Catalogues had.

On Friday Next.
Several Cases of BURMESE ORCHIDS, received direct.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 12.

Preliminary Notice of an Important Sale of the entire COLLECTION of COOL ESTABLISHED ORCHIDS formed by the late J. S. Bockett, Esq., of The Hall, Stamford Hill, N.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Administratrix to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY and WEDNESDAY, December 16 and 17, at half-past 12 o'Clock precisely each day, the whole of the far-famed COLLECTION of COOL ESTABLISHED ORCHIDS, probably the grandest lot, both in regard to varieties and to superior cultivation, that have ever been submitted to public competition.
The whole of the plants will be Sold Without Reserve, and none will be disposed of previously to the Auction.
Mr. EBBAGE, the Head Gardener, will be happy to show the plants, and to afford information coecerning them.

Upper Hallifford, Middlesex.
34 Acres of Capital Tithe-free ARABLE and MEADOW LAND, with Two Cottages thereon.

MESSRS. GOUGH AND DOVE will LET by AUCTION, at the "Flower Pot" Hotel, Sunbury, on TUESDAY, December 16, at 3 o'Clock, in one lot, for a term of 99 years, direct from the Freeholder, a very desirable and compact Tithe-free ESTATE of 29 a. 2 r. 0 p. (with powers to increase it to 34 Acres) of capital ARABLE and MEADOW LAND, in a good state of cultivation, with Two Cottages thereon, admirably adapted for Building, Market Garden, Horticulural, and Nursery Purposes; beautifully situate, abutting on the road leading from Upper Hallifford to Charlton, Littleton, and Chertsey, bounded on one side by the Thames Valley Line of the London and South-Western Railway, about 400 yards from the Shepperton Station, and in the rear by a beautiful running stream of water.
May be viewed at any time prior to the Auction, and particulars, with plan and conditions of letting, had at the place of letting; and of Messrs. GOUGH AND DOVE, Auctioneers, Surveyors and Land Agents, Sunbury-on-Thames.

Monday Next.—(Sale No. 6790.)
FIRST-CLASS DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 8, at half-past 12 o'Clock precisely, 900 lots of first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, GLADIOLI, LILIUMS, and other DUTCH BULBS, in lots to suit all buyers.
On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 6791.)
2000 LILIUM AURATUM, HOME-GROWN LILIES, and other Lilies.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, on TUESDAY NEXT, December 9, at half-past 12 o'Clock precisely, an importation of 2000 LILIUM AURATUM from Japan, 3000 South African TUBEROSES, Hardy ORCHIDS of sorts, 150 LILIUM HARRISII, choice Home-grown LILIES, including most of the best species in cultivation, consignments of BULBS from Algiers, and HELLEBORES from Germany; also 500 MILLA BIFLORA, 500 TIGRIDIA CONCHIFLORA and others, 500 ORNITHOGALUM GRACILIS, 100 MONTBRETTIA POTTSII, 1000 gigantic crowns of LILY of the VALLEY, 100 fine plants of IRIS ROBINSONIANA, and 100 CARNATIONS, including Mary Morris, W. P. Milner, &c.; DUTCH BULBS in variety, &c.
On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6792.)
2000 First-class ROSES, PLANTS from Ghent, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 10, at half-past 12 o'Clock precisely, 2000 first-class Standard, Half-standard, and Dwarf ROSES, from one of the best English Nurseries; a Consignment of choice-named AZALEAS, Hybrid RHODODENDRONS, PALMS, and DRACÆNAS, from Ghent; HARDY HERBACEOUS PLANTS, DUTCH BULBS of sorts, &c.
On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6793.)
CATTLEYA AUREA, splendid importation.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY NEXT, December 11, at half-past 12 o'Clock precisely, a superb importation of the rare and superb CATTLEYA AUREA, in unusually fine condition; a fine batch of C. BOGOTENSIS, marked and specially fine varieties; a quantity of the lovely C. CHOCOENSIS, PESCATOREA KLABOCHORUM, and many ORCHIDS of value.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6793.)
CATTLEYA LABIATA, Autumn-flowering var., in Bloom.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 11, a fine plant of the true Autumn-flowering CATTLEYA LABIATA, in flower, with nine bulbs and leads; and a few other good ORCHIDS coming into Bloom, from a private Collection.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6793.)
4 Cases of ARAUCARIAS, as received, each containing upwards of 500 plants, in fine condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 11.
On view morning of Sale, and Catalogues had.

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on THURSDAY, December 18. Gentlemen desirous of entering Plants for this Sale will please send particulars not later than THURSDAY NEXT.
Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

The Brixton Auction Rooms, Loughboro' Road, S.W.
EARLY SALES of ROSES and SHRUBS.

MESSRS. PEED AND GREAVES, HORTICULTURAL AUCTIONEERS, will SELL by AUCTION as above, on WEDNESDAY and SATURDAY NEXT, December 10 and 13, at 12 for 1 o'Clock precisely, 250 lots of Standard and Dwarf ROSES, Pyramid and Standard FRUIT TREES, CAMELLIA STOCKS, GOLDEN EUONYMUS, and EVERGREEN SHRUBS.
May be viewed the day prior, and Catalogues had of the Auctioneers, 1, Holland Road, Brixton, London, S.W.

WANTED TO RENT, a SMALL NURSERY, about seven or eight miles from Covent Garden, to consist of three or four Greenhouses, with Ground attached. Residence connected preferred, or must be obtainable near.
H. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

PARTNERSHIP, or SALE.—Florists.—Advertiser, who is in possession, under a Lease for twenty-one years, at a very low rental, of commodious NURSERY GROUNDS, with good Glass and appliances, situate within 5 miles of London, wishes to meet with a Gentleman with Capital, to Purchase a Half Share or Take the Whole of the Business, which, with additional capital, can be greatly extended, by erecting further houses, which, with the appliances, now on the ground, a good return can be realised. The houses are well stocked with selected Plants.
Address, Mr. LOMAX, Solicitor, 9, Great Russell Street, Bloomsbury, W.C.

Middlesex—Between Southall and Hounslow.

TO BE LET, 15 Acres of FRUIT PLANTATION with large House and Outbuildings. Also 9 Acres of MEADOW LAND near. Rent £350.
Apply to E. P. NEWMAN, Market Gardeners' Valuer and Auctioneer, High Street, Uxbridge.

Grape Houses.

TO BE LET, for Seven or Fourteen Years, Three Double GREENHOUSES, each 100 feet × 20 feet. Hot-water Pipes and Fittings complete, with a Detatched COTTAGE and GARDEN, 420 feet × by 120 feet, of very rich soil suitable for Nurseries.
Apply to FREEHOLDER, Chas. Tayler's Advertisement Offices, 154, Fleet Street, E.C

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

PROTHEROE AND MORRIS, HORTICULTURAL, MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

JOHN KENNARD'S HORTICULTURAL SUNDRIES. Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

Hyacinths in Pots.
POTS made expressly for HYCINTHS can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Rhubarb and Seakale Forcing.
STRONG well-made POTS for the above can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

MONEY WANTED.—£50 or £100 for improvements. Glass and Stock-in-trade. Will give 10 per cent interest, payable in advance. Principal repayable in 2 years if desired. Reference and security on application. No professional money lenders treated with.
Address, in first instance, to H. H., Messrs. Hurst & Son, 152, Houndsditch, London, E.

PEACHES and NECTARINES, Pyramids, in Pots, 12 and 13-inch, well set with Fruit-Buds, for Sale, or EXCHANGE for dwarf-trained Trees. Apply to E. AYLING, Forty Hill, Enfield, Middlesex.

ROWLAND MAY offers the undermentioned Surplus Stock, all of which has been frequently transplanted, and being grown in a very cold climate and an exposed nursery are certain to do well when moved :—

CHESTNUTS, Horse, 7 to 9 feet, very stout good trees, with good roots, 6s. per dozen, 45s. per 100.
LIMES, 7 to 8 feet, grown thinly, 9s. per dozen, 70s. per 100; 5 to 7 feet, straight, clean trees, red twigged variety, untrimmed, 6s. per dozen, 45s. per 100.
HORNBEAM, 5 to 8 feet, very strong, with good roots, 1s. per dozen, 30s. per 100.
WALNUTS, 3 to 4 feet, 4s. per dozen, 30s. per 100.
OAK, English, 5 to 8 feet, 4s. per dozen, 30s. per 100.
POPLARS, Black Italian, 5 to 8 feet, very clean, 8s. per 100.
BIRCH, Common, 5 to 8 feet, perfect specimens, 4s. per dozen, 30s. per 100.
CEDRUS DEODARA, 4 to 5 feet, bushy and well furnished, grown singly, 30s. per dozen.
PINUS AUSTRIACA, 1½ to 2½ feet, very stout, with good fibrous roots, 10s. per 100; 2 to 3 feet, three times transplanted, 25s. per 100.
SCOTCH FIR, 2 to 3 feet, very stout, twice transplanted, good colour, 35s. per 1000; 3 to 3½ feet, thret times transplanted, 5s. per 100.
BEECH, 1½ to 3 feet, twice transplanted, 25s. per 1000; 3½ to 4 feet, three times transplanted, 6s. per 100.
SYACAMORE, 1½ to 4 feet, very clean grown, 22s. 6d. per 1000; 3 to 4½ feet, stout and clean grown, 27s. 6d. per 1000.
MAPLE, Norway, 1½ to 4 feet, clean and quick grown stuff, 22s. 6d. per 1000.

ROSES, Dwarfs, H.P.'s, finest named exhibition kinds, 25s. per 100, my selection. Maréchal Niel, on Brier Cutting, very strong, with shoots 2½ to 4 feet long, 10s. per dozen Gloire de Dijon, ditto, 5 feet long, 9s. per dozen, 50s. per 100. Teas, &c., out of open ground, on Brier Cutting and Seedling Brier, in such kinds as Duc de Magenta, Triomphe de Rennes, Madame Trifle, Climbing Devoniensis, Céline Forestier, Belle Lyonnaise, Perfection de Montplaisir, Niphetos, David Pradel, Princess Vera, &c., 9s. per dozen, kinds or separate.
STRAWBERRY RUNNERS, in 12 leading varieties, 1s. 6d. per 100, 12s. 6d. per 1000.
DAISIES, Red and White, 4s. per 100.
VIOLETS, Czar, 12s. per 100.
EAST LOTHIAN STOCK, Purple, Scarlet, and White, grand plants, 5s. per 100.
Above are all offered subject to being unsold, and for cash or satisfactory reference.
Wensleydale Nurseries, Leyburn, Yorkshire.

CHESTNUT (Spanish), Larch, Hazel, Ash, Birch, Alder, Willow, Oak, and Thorn Quick. Stout, well-rooted, transplanted. A large quantity to be sold.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

Extra Strong Fruiting Vines.
H. LANE AND SON have still some of the above to offer, equal in strength to those they have been so successful with for many years in taking the First Prizes at the leading Horticultural Shows.
The Nurseries, Berkhamstead, Herts.

EUCHARIS AMAZONICA, splendid flowering bulb, clean, free from disease, and in best possible condition, 50s., 75s., and 100s. per 100.
VERONICA TRAVERSII, good bushy plants, 6 by 6 inches, 25s. per 100; 18 by 18 inches, 50s. per 100; 24 by 24 inches, 75s. per 100.
VIRGINIAN CREEPERS (AMPELOPSIS HEDERACEA), 3 to 4 feet, extra good, 60s. per 100.
Discount to the Trade. Apply.
WILLIAN MILES, West Brighton Nurseries, Hove, Sussex.

MANETTI STOCKS.—A few thousand to offer, 1-year, clean-eyed, and well-rooted, 18s. per 1000; also 10 bushels of MACLEAN'S WONDERFUL PEA. Good sample.
GEO. BOLTON, Nurseryman, Wyddial, Buntingford, Herts.

FOR SALE, Twelve PEACHES and Two NECTARINES, true to name, in 13-inch pots—all in excellent bearing condition. For sorts and price apply to B. HOPE, Middleton Park Gardens, Bicester.

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to 10 feet high.
,, laurifolia, ditto.
,, Hodgins', 3, 4, 5 to 8 feet.
,, myrtifolia, ditto.
,, Scottica, 3 to 5 feet.
,, Yellow-berried, altaclarense and others.
,, Variegated, of sorts, 3, 4, 5, 6, 8 to 10ft.
} many thousands.
,, Waterer's splendid plants, 3, 4, 5, and 6 feet, 8 to 15 feet in circumference.
,, Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimens.
,, Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteen years' growth, hundreds.
,, new Golden Weeping, a large number of very beautiful plants.
BOX, Green and Variegated, 3, 4, 5, 6 to 7 feet, many thousands.
YEWS, Common, 3, 4, 5, 6 to 10 feet, thousands.
,, Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.
,, Irish, 5 to 10 feet, hundreds. | thousands.
CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6 to 8 feet,
,, Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful specimens.
THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.
RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.
AZALEAS. Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands.
JUNIPERS, Chinese, 7, 8, and 10 feet high.
,, Chinese Golden 3 to 6 feet.
JUNIPERUS VIRGINIANA GLAUCA, 3 to 5 feet.
ABIES CANADENSIS, 4 to 7 feet, hundreds.
,, DOUGLASII, 3 to 5 feet, thousands
,, ,, GLAUCA, 2 to 4 feet, hundreds.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, HOOKERIANA, 3 to 5 feet.
,, PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, thousands.
,, NORDMANNIANA, 6, 7, to 10 feet.
,, PINSAPO, 6 to 10 feet, hundreds.
,, PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet
CEDRUS DEODARA, 6 to 9 feet, hundreds.
,, LIBANI (Cedar of Lebanon) 3 to 5 feet.
THUIA OCCIDENTALIS LUTEA, 3 to 6 feet, hundreds.
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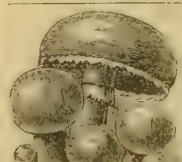
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G. RUSE, Babraham	0	5	0
Mrs. EDWARDS, Babraham	0	5	0
Collected by Mr. N. F. FULLER, Idsworth Gardens, Horndean, at a Meeting of the Committee of the Havant Chrysanthemum Society	0	16	6
Mr. LOCK, Havant	0	2	6
Mr. ARTER, Havant	0	5	0
Mr. SUTER, Havant	0	2	6
Collected in Boxes at Messrs. CUTBUSH AND SON'S Chrysanthemum Show at Highgate	6	6	0
Collected by EMPLOYÉS at the Highgate Nurseries	1	1	0
ANONYMOUS	0	3	0
Mr. J. B. KENDALL, Templeton Gardens, Roehampton, S.W.	0	10	6
YOUNG MEN in the Templeton Gardens, Roehampton, S.W.	0	4	0

THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 6, 1884.

KENFIELD.

SOME few miles from the old city of Canterbury, and fewer still from the station at Chartham, is the manor-house at Kenfield. We need not say anything to recommend Canterbury to the notice of the reader. Chartham is not likely to be so familiar to him, and although the horticultural attractions of the place are not remarkable, yet as wandering horticulturists in general have a keen eye for the picturesque and the beautiful—for whatever may be interesting, in fact, we may do well to call attention to the picturesque old houses on the green, so different from the stucco erections of our modern suburbs—and more especially to the glorious Decorated church and its fine and most interesting brass. These, however, must not lure us from our purpose—only let the visitor to Kenfield make a note of them. A drive or walk of a few miles over a richly undulating country, fairly wooded, with poor hungry chalk soil on the downs and crests of the hills and rich fertile loam in the valleys and combes, brings us to our goal—the Pinetum at Kenfield Hall, near Petham, the seat of R. E. Thomson, Esq.

Shelter and soil have co-operated here to induce a stately growth of the trees, which has been rapid beyond what might have been expected in the time, and which is the more astonishing, as the climate of this part of Kent is not exactly Californian in its amenity. On the day of our visit, a week or two ago, Kenfield was surrounded by a cold "haur"—a strange contrast to the warmth and brilliant sun we left an hour or so previously on the Kentish coast. The Pinetum was laid out in 1854, under the direction of Mr. Thomson, by the late Mr. Masters, of Canterbury—an enthusiast in his profession, who combined the instincts of an artist with the zeal of a naturalist, and who was spared to witness much of the stately effect he had foreseen and provided for.

In addition to the Pines there is a collection of deciduous trees, such as Copper and notched-leaf Beeches, White Elm and White Limes, evergreen Oaks, and Ailantus, and a selection of flowering shrubs. In the park are Conifers, planted in 1849, and grand Sycamore trees on which the rooks build their nests, as well as Ash, Walnut, Oak, Scotch Pine, and Larch of a size seldom seen. The greater part of these trees, and an avenue of Horse and Spanish Chestnuts, must have been planted by members of the Thomson family nearly 300 years ago, with the large beds of Lent Lilies under them. The present resident has planted 100 Walnut trees. There is not a farm on the estate to which he has not added a good orchard. Groups of Fir and Larch have been planted all over the estate, and the woods have been planted up according to the falls of underwood, which is very material in keeping up the value of the underwood on the estate. The Holly and Yew are left in the falls for effect. There is a plantation of fruit trees, and one for wood plants at Garlinge Green. In the garden are ferneries, rockeries, pools of fish, and beds of flowers and sub-

tropicals. The gardener, Mr. Charles Webb, has been with Mr. Thomson for some years, and has great knowledge of Conifers and their cultivation.

In February, 1845, Mr. Thomson bought of Mr. Hooker, Goudhurst, an Araucaria imbricata, Cedrus Deodara, Pinus insignis, excelsa, and Douglasii, and planted them inside a wall of his garden, and in 1849 took the wall down and removed all the Pines with the exception of Pinus insignis, which was killed by the frost in 1861, with a young tree grown from the seed of the Pinus. The insignis was a beautifully grown tree, 35 feet high, and the girth of the stem was 7 feet. The Araucaria on the lawn in the front of the house is laden with male catkins, and is at least 30 feet high. There are four Araucarias now with male catkins and two with cones, from which fifty young plants have been raised from their seed. There are six large Wellingtonias of great height and bearing cones, well sheltered, and the foliage as it drops has never been taken away from the trees, and, although there is great depth of good soil, sewage has often been applied, and always in rainy weather.

These particulars have been derived from the descriptive list published by Mr. Thomson, a list containing a catalogue of all the species of Conifers cultivated, together with indications of their native country, their present height and other particulars. Could we print this list in its entirety it would obviate the necessity for any remarks of our own, but the space at our disposal does not permit this, and hence we confine ourselves to the mention of a few of the more remarkable trees kindly pointed out to us by Mr. Thomson. And first of the Wellingtonia (Sequoa) gigantea. This is one of the noblest specimens we have seen anywhere. It was planted in 1854 by the late Mr. Masters himself when only 6 inches high, and has now attained a height of about 70 feet, while the side branches are 112 feet in circumference, the lower ones gracefully sweeping down to the turf, and then upturned, and bearing numerous cones. A Red-wood (Sequoia sempervirens) and two Deodars were planted on the same day by members of the Thomson family. Four of the golden variegated Wellingtonias from Hartland of Cork, planted long afterwards, have already attained a height of 16 feet, and are the handsomest of the kind we have met with. The Red-woods average 60 feet in height, and the ten Deodars range from 50—60 feet each. As for the other trees we cannot follow any definite order, as our visit was a short one, and the weather not propitious. Taking them in the order in which we find them in our note-book, we have first to call attention to a noble specimen of the Irish Yew, some 20 feet in height, a well-grown and striking tree. Dovaston Yews of large size are most effective for filling up corners, and are largely employed here with excellent effect. Abies bracteata, a tree one seldom meets with, probably because it is spring-tender, has here attained a height of 36 feet; its long sharp-pointed leaves and pale spear-like shining buds are very characteristic. Of Abies Lowiana (or whichever of its numerous synonyms may be preferred) there are several handsome specimens, averaging 40 feet in height. It is clear that the differences in this plant are largely dependent on the localities whence they were obtained. The earlier importations appear to have been more uniform in character than the later ones, thus amongst the older trees, planted for some years, there is no difficulty in recognising this species both from concolor and from grandis, but go into the nearest nursery and inspect the seed-beds and quarters of young plants, and the difficulty of saying where concolor ends and lasiocarpa or Lowiana begins, or *vice versâ*, is by no means slight. At the same time, the extreme form of true concolor is very readily distinguishable.

There is a group of noble Picea Menziesii, with clean boles, from 50—70 feet in height, and with fine spreading heads, that make us think of Longfellow's "forest primæval," so stately are they, and so perfectly is the aspect of a forest produced by them. One of the boles that we roughly measured was 70 inches in girth at 4 feet from the base. Pinus insignis, and P. Pinea succumbed some years ago to the frost, and are now only represented by small specimens. The Pinaster thrives, but is as scraggy in appearance as it is elsewhere. One planted in 1849 measures now 86 inches in circumference at 4 feet from the ground, and has a height of 60 feet. A form of P. Laricio, perhaps P. Pallasiana, though with a smaller cone than we are accustomed to see in that variety, is represented by a grand specimen, the trunk of which is 85 inches in circumference at 4 feet from the ground, and some 60 feet in height. Pinus macrocarpa has attained a height of 50 feet and bore a cone some time since, others are now forming. The tallest Araucaria is over 55 feet in height, well furnished to the base, a beautiful specimen. As already mentioned, numerous seedling plants have been raised here, now ranging from 2—3 feet in height, and planted in various situations in the grounds. The Douglas Fir does well here, the specimens averaging from 40—60 feet in height. One of the most interesting shrubs in the ground is a plant of the fastigiate Cephalotaxus pedunculata which has betrayed its origin by sending out several large spreading branches with the two-ranked leaves of the species instead of the scattered foliage of the erect shoots, which have the same arrangement as in the Irish Yew. We have only mentioned the larger specimens, but the collection is rich in smaller ones of more recent introduction or smaller stature, and is indeed for its size one of the most complete and interesting it has been our good fortune to witness.

Hardy perennials are in favour at Kenfield, and as indications of the advantages of shelter it may be mentioned that the New Zealand Flax (Phormium tenax), Dracæna indivisa, and some of the hardy Bamboos, are planted out here, and although they receive no protection they have attained large dimensions.

As in most collections where the owner has a special fondness for trees, or has associations with particular specimens, thinning and timely removal have not been carried out sufficiently early, so that some of the specimens can now never assume the full majesty and beauty of which they are capable; but who would have thought of seedlings 6 inches in height becoming such giants in the course of a quarter of a century?—or who cannot sympathise with the feeling that forbids the removal of such valued friends?—and yet!

We add from Mr. Thomson's list the following details relating to the height of a few additional species:—Abies alba, 20—30 feet; A. Smithiana, or Morinda, 50 feet; A. cephalonica, 65 feet; A. Fraseri, 50 feet; A. grandis, 20 feet; A. nobilis, 40—50 feet; A. Nordmanniana, 50 feet; A. pectinata, 50—70 feet; A. Pinsapo, 40—50 feet; A. Douglasii, 40—60 feet; Cedrus atlantica, 60 feet; Cupressus Lawsoniana, 30—50 feet; C. L. erecta viridis, 10—15 feet; C. sempervirens, 50 feet; Libocedrus decurrens, 50 feet; Pinus Cembra, 40 feet; Pinus Coulteri, 50 feet; P. monticola, 50 feet; P. ponderosa, 55 feet; P. pyrenaica, 55 feet; Thuia gigantea, 50 feet.

WILD FRUITS IN ITALY.—Consul-General Colnaghi, reporting on the province of Diezzo, Italy, says one of the rural industries common to the wooded districts is the gathering of wild Strawberries, Raspberries, and Mushrooms. In the season, at certain hours of the day, almost a procession of women and children may be met in the woods carrying baskets filled with fruit to the central villages, whence it is forwarded to the cities of the plains. As the season advances men often walk five, six, or more hours, over the mountains, with large baskets on their backs, to gather the fruit on the higher hills.

New Garden Plants.

ANGRÆCUM KOTSCHYI, *H. G. Rchb. f.*

My prediction is fulfilled. This extraordinary plant rivals Angræcum Ellisii. I have at my side a grand inflorescence, kindly presented me by Sir Trevor Lawrence. It would be very desirable to have some remarks added by Sir Trevor about the nature of the plant itself and the treatment requisite to get it in such perfection. [We shall insert a communication relating to this plant from Sir Trevor Lawrence next week. ED.] The peduncle is 0.44 m. long, terete, with low blunt transverse elevations here and there on its surface. The colour is greyish-green, with very numerous small white dots, and here and there is a brown marbling. There is a pronounced tendency to zigzag, as each second flower—there are twelve!—stands on an angulate portion of the peduncle. There is a short protracted emergence from the peduncle under each pedicelled ovary. The flowers, when fading, have lightest sulphur-coloured perianths, excepting the reddish base of the lip, which has a more vivid colour than the lighter reddish stalked ovaries. The gorgeous long spurs, with their spiral curves, appear to like to curl around their neighbours. Imagine a family of light reddish-ochre-coloured serpents. Such an inflorescence is so surprising that it may be regarded as a most welcome ornament of an Orchid collection, though it has neither bright colours nor a normally acknowledged shape of flower. The lips have a longer isthmus and a narrower anterior blade than those which were on the flowers kindly forwarded by Messrs. J. Veitch & Sons in September, 1880. It is, however, in this case a great satisfaction to me that Sir Trevor Lawrence does not want a special name for each individual of his grand collection. *H. G. Rchb. f.*

RHODODENDRON TOVERENÆ,* *sp. n., F. von Muell.*

During a recent ascent of ranges fully 6000 feet high in south-eastern New Guinea it fell to the fortunate lot of Mr. Carl Hunstein to discover a grand epiphyte, of which he brought a solitary flower, but made a coloured sketch of the latter also (see fig. 127). Though it is unusual to define any plant botanically from a single flower, I feel no scruples in this exceptional case in placing at once this superb production of the Papuan flora on descriptive record, especially as the material, although scanty, allows of referring the plant clearly to the genus Rhododendron. Thus also I am enabled to fulfil a long-cherished wish to connect with some splendid floral treasure the name of the Marquis Goyzueta de Toverena, Consul-General in Australia for the Italian kingdom, a nobleman who has given much encouragement to my researches while worthily representing here for a series of years his great country.

Four species of Rhododendron are described from New Guinea in Dr. Beccari's *Malesia*, i., pp. 200, 202; they all came from Mount Arfak; so that the addition of a south-eastern species renders it probable that these superb plants occur in numerous specific forms throughout the higher regions of the Papuan island. This fifth congener differs in its white and very large flowers from the other four; but R. Konori has also a 7-lobed corolla (a characteristic otherwise only recorded in R. Fortunei), and the number of stamens is also about the same as in R. Toverenæ, while the anthers are likewise remarkably elongated. Among the Sikkim species of Rhododendron our new one approaches to R. Edgworthi; but the flowers are numerous (forming indeed, according to the collector's note, magnificent umbel-like bunches of over a foot's width), the limb of the

* *Rhododendron Toverenæ.*—Corymbs containing about twelve flowers, each on an average 6 inches long and wide; calyx reduced to a terminal narrow oblique expansion of the stalklet, the latter nearly glabrous; corolla pure white, its tube slender cylindrical, about 3 inches long, but not half an inch wide at the middle, slightly widened upwards, lobes seven, horizontal, oblong-ovate, somewhat waved, scantily reflexed at the margin for short spaces, rounded-blunt or (according to the sketch) occasionally sinuous at the summit or there produced into two or three lobules; stamens fourteen, somewhat exserted, about 4 inches long, filaments in their lower portion densely beset with short spreading hair, in the upper portion nearly glabrous, anthers linear-cylindrical, nearly or fully half an inch long; pistil hardly longer than the corolla-tube, cover of the stigma patellar, ovary 7-celled, stigma 7-lobed, style about 1½ inch long, as well as the ovary fulvous-velvety, except towards the summit. *F. v. M.*

corolla is broader, the tube much longer, the stamens become increased in proportion to the corolla-lobes, and the anthers are longer and pale-coloured, while (as noted by the finder of the plant) the stigma and upper part of the style are deep red; the foliage may also prove very different. Our plant comes nearer to R. Falconeri, so far as the copious masses of its flowers, the much-lobed corolla and the numerous stamens are concerned; but the length and width of the flowers is much greater, and the shape of the corolla is not campanulate. Indeed only R. Griffithi in its variety Aucklandi comes up to the size of the flowers of R. Toverenæ, the latter, however, is distinguished by the comparatively slender corolla tube, much longer anthers, and a denser vestiture of the pistil. Mr. Hunstein speaks of pink leaves next the flowers, which would accord with young leaf-shoots of red tinge, such as are observed in several Rhododendrons, particularly R. Fortunei and R. Hookeri. A consideration of the fact that the calyx in many species of Rhododendron becomes obliterated strengthens the view that the floral envelope of Proteaceæ and a few orders allied to them is petaline, not calycine. *Ferd. von Mueller.*

THE ST. PETERSBURG BOTANIC GARDEN.

This famous garden is situated in a northern suburb on the Apothecaries' Island, and comprises about 32 acres of ground. There are twenty-four or twenty-five houses, and the great Palm-house, the largest of all, is said to be nearly 100 feet high. They are all built of wood, and the hotter houses are provided with double sashes. Boards are used in winter to keep out cold, and, as would be expected from the severity of the climate, the houses are built more with regard to convenience and utility than architectural effect. They are all provided with entrance lobbies, the utility of which can well be imagined. The collections in extent and variety are such as to illustrate the vegetable kingdom with great completeness, and they are astonishing to those who know the difficulties to be encountered in growing plants. That one of the chief botanic gardens of the world should be kept up and perfected in so high a latitude is no small evidence of the enterprise and energy which the managing mind is so well known to possess. The extent of the collections and the difficulty of doing full justice to them may be understood from the fact that our first inspection of the houses occupied fully five hours, and we had only been able to make passing notes. A number of the best of the specimens were at the International Exhibition at the time of our visit, and we do not perhaps mention some of the most remarkable in these notes.

Bromeliads.—In a house devoted partly to the Bromeliaceæ we found a method of growing the plants of this order which is at once novel and effective. The imitation of Nature is the key-note of this establishment, and the Bromeliads are situated in the branches of trees, where they are fixed at first by means of wire, sphagnum, and a little peat. A grove is formed of selected Birch stems and branches, which are stuck in the ground, and by careful arrangement occupy effectively the space afforded by the house. Some of the plants are nearly as high as the ridge, and the group is so large as to form a good feature. The ground beneath is covered with Selaginella. Here we do not observe any uncommon kinds, and the aim probably is to show the characteristic effect of which Bromeliads are capable; but in another house, containing the principal collection, are several new species. [One of them is precisely like the plant known as Glaziova insignis, but with spiny-margined leaves. Bromelia fastuosa var. Bergmanniana, with inner leaves of brilliant red, is one of the most striking. There are many imported plants, which have yet to flower. In yet another house we noted Canistrum eburneum from Haage & Schmidt, a fine species with spotted green leaves.

Ferns.—The Fern-houses are very interesting, and a striking feature is the use of Ivy to cover the iron supports of the roof. Ivy also adorns the rafters in some of the houses, and this form of ornamentation we found to be common in Russia. Among Filmy Ferns, as a specimen, Hymenophyllum nitens is the most remarkable. A fine Todea barbara attracted our attention, so large that it could not be taken to the Exhibition. There are fine Tree Ferns, of which we noted Cyathea princeps, C. medullaris, and C. Gardneri as among the best. Dicksonia antarctica was of great size, Balantium was very good, and so also were Cibotium regale and Hemitelia calolepis. A set of the genus Lomaria, here included with Blechnum—so far as the species we noticed are concerned—seemed of great interest among the others, and of fine specimens of good species we noted L. gigantea, L. nuda, and L. fluviatilis. The first we admired the most, but the last is also one of the best of the genus, and is very distinct, as well as interesting, from its



Fig. 123.—The Botanic Garden, St. Petersburg.

slightly peculiar habit, the fronds being much depressed. A plant called Blechnum falcatum we noted as worth recollection, and as we cannot find the name in books it may be new.

In one of the other houses is a young stock of a new species of Cheilanthes, from Turkestan, but yet too young to show its character. Among the new Ferns introduced by nurserymen, of which the majority find a place in this collection, is Adiantum erosum, from Messrs. Veitch, excellent and pretty from its finely divided pinnæ.

ORCHIDS, ETC.—In the Orchid-house are two fine species of Lycopodium; the most striking is L. squarrosum, which has a thick, erect, darkly coloured stem, with rigid leaves, sharply subulate and slightly depressed. The other kind, L. reflexum, has pendulous stems, with bright green leaves, variously directed. In this house are the Nepenthes, about fourteen kinds, all grown in baskets. Not many Orchids were in flower, but these were good kinds, such as Oncidium Krameri and Calanthe veratrifolia. One of the nicest is Oncidium pulvinatum, with bright though small flowers, of dark yellow, spotted with red. The variety of Brassia Lanceana called Lietzei apparently differs from the species in having olivaceous flowers. Others we noticed were Habenaria maculosa and the curious Bifrenaria inodora, with olivaceous segments and a purple lip. This collection is a large one, to which important additions are frequently made.

THE GREENHOUSES.—In the Heath-house a fine specimen of Wistaria multijuga was splendidly in flower, and it is much more ornamental and free-blooming than we had supposed. The flowers are pure white, in long narrow racemes. Ivy is used in this house to screen the under-part of the stage, and its appearance is much better than that of the bare ground or floor, so often exposed to view. Long ranges of greenhouses contain a great variety of plants, interesting botanically. There are several uncommon kinds of Helichrysum, such as H. rupestre, H. serpyllifolium var. orbiculare, and H. felinum. Hippia frutescens and Stoebe cinarea may be mentioned as other interesting fruticose Compositæ. In this house we observed for the first time the common Laurel in pots, but almost in every garden it is to be found, and some of the nurserymen grow it for decoration by the hundred. Testudinaria rupicola is a kind quite new to us, and in this house probably is the long-sought-for Gazania Pavonia. We have little doubt that this is the true plant, though for some years we had not seen it.

PALMS AND CYCADS.—A large greenhouse is set apart for herbaceous plants, for raising the seeds and growing on the young plants. Certain collections are kept here in reserve, and, among others, we found a considerable one of Irises, which includes, according to a label, the extremely rare Iris suaveolens. One of the finest plants in this house is Allium Alexieanum, from Western Turkestan, remarkable for its fine broad recurved leaves and somewhat handsome Hæmanthus-like inflorescence. A very fine specimen of Myosotidium nobile shows great skill in its culture, though possibly its culture may be facilitated by some favourable condition not found in England. The principal plants flowering in this house were Fritillaria imperialis var. inodora, from Turkestan, not widely different from the species, but yet distinct, and apparently differing most in its much smaller flowers; Chorispora Greigi, a pretty Crucifer, with lilac flowers and pinnatifid leaves, reminding one of Orychophragma in its appearance; Rubus arcticus, one of the best specimens we have seen; Rhododendron Chamæcistus, Phyteuma betonicæfolium, Corydalis angustifolia, and Tulipa Gesneriana var. luteo-bicolor, with yellow flowers, the outer perianth-segments red outside. A pot specimen of Ophioglossum vulgatum was remarkable for its fine development, and among the most curious and striking plants we noted Lactuca Roborowski of Professor Maximowicz. Here were flowering many of those terrestrial Orchids we noted particularly at the Exhibition.

The Japan house contains a good collection of the plants of that country, and there are many kinds we are accustomed to see out-of-doors. In this house are numerous varieties of the common Holly. The New Holland house has in it a Wellingtonia growing in a tub; there is also an extremely pretty specimen of Casuarina tenuissima, with fine drooping branches. One of the most curious things for a Coprosma is C. acerosa, which, as the name denotes, has needle-like leaves. It forms a striking shrub to those who are interested in such things, and grows about 3 feet high.

SUCCULENTS, ETC.—Succulents are well represented, and in the succulent-house there is a fine group of Araliads, a class of plants appreciated more on the Continent than in England. In nearly all gardens we have found one or a number of Oreopanax dactylifera, one of the best kinds, and with us one of the most rare. The Cactus-house (as well as several others) is situated upstairs, that is to say, over the shed behind one of the other houses, much on the same plan as we believe is also found in the Jardin des Plantes, of Paris. Here is a fine specimen of the rare and very distinct Anhalonium prismaticum. The Mammillarias appear to do much better than the other Cacti, which probably suffer more than they do from the shortness of the summer and the darkness of winter.

CONIFERS.—A house devoted to Coniferæ is one of the most interesting, and it brings home to the mind how much cultivation out-of-doors is limited by the cold of the climate. This collection is extensive, but, with few exceptions, the kinds are all hardy in England. The specimens are arranged in natural groups, all those of one genus standing together. As one of the most curious, and at the same time attractive, we noted Cryptomeria japonica var. spiralis, of which there was a good specimen, pretty and interesting; Libocedrus Doniana was very good, and, as generally with us, necessarily grown in pots. The Deodar was another of our rather tender kinds, but some of the species in this house, that would not live out-of-doors, could but excite our sympathy with Russian gardeners for the rigid climate they have to deal with. Probably some of the species were in this house to complete the collection, though there are but few apparently that can survive the climate. Some were very pretty specimens, as for instance Biota pendula and B. orientalis. Junipers were also very good; but Pines and Firs are, of course, less suited to the restriction of pots and moderate space. To plant out such a collection would need immense space, and these specimens are all in pots. In this house is a fine Lapageria, no doubt splendid in bloom, if it flowers well. From this we enter a large house of Rhododendrons and Azaleas, few of the former in flower, but rather a good show of the latter.

The small Palm-house is one of the most ornamental in the garden, and it contains also some fine specimens of Cycads, one of them, Lepidozamia Peroffskiana, being magnificent of its kind and perfect in every particular. The finest specimens are Chamærops humilis macrocarpa, Rhapidophyllum hystrix, Ceroxylon Klopstocki, and Livistona Jenkinsoni. A few of the best Cycads are Encephalartos Altensteinii typ., and the variety paucidentatus; Ceratozamia Kusteriana, C. longifolia, and C. Miqueliana; Encephalartos longifolius integrifolius, and E. longifolius dentatus. All these are particularly fine, and among miscellaneous plants a large Freycinetia compelled attention. The specimens in this house are disposed in groups, bordered with Aspidistra lurida.

AROIDS—In this garden the collection of Aroids is fine and important, and it includes a number of new and rare species. Anthurium Gustavii is a very fine new species with immense green leaves, and it attracted our attention at the Exhibition as one of the fine plants there. Among specially fine specimens were Philodendron Selloum and P. pinnatifidum var. rubropunctatum. This last has its petioles spotted with red, and the leaf-blade is cut into narrow divisions. The most noteworthy in flower was Amorphophallus maculata; it has a dark scape a foot high, spotted with white; the hood is erect, coloured in the same way as the stem on the outside, but within of a dirty white colour. A variety of Amorphophallus named Konjac was new to us; but there was no foliage by which to form an opinion of it. Some of the species we thought of most interest were Gonatopus Boivini, Hydrosma maxima, Spatharteum heterandrum, and Helicophyllum Alberti. A curious kind of Philodendron, with long petioles and small leaf-blades, will probably prove to be new. Many of these climbing Aroids are grown on Birch-stems standing in a group, on a similar plan to that adopted for the Bromeliads.

In the great Palm-house is a fine Yucca aspera, which has a good stem 3 feet high. The greatest novelty to us in this house was a fine Bamboo with purple stems, in habit like B. Arundinacea, and called Guadua latifolia. We remember no other Bamboo like it, and do not find by our list that we have seen a Bamboo under this name, or a synonym. It appears at once distinct by its stem; the leaves are broad, and it is a handsome plant. In this house are splendid specimens of Maximiliana regia, Livistona rotundifolia, L. subglobosa, and Diplothemium Martianum.

(To be continued.)

Orchid Notes and Gleanings.

DENDROBIUM CUMULATUM.—This pretty and, in the form of its lip, somewhat singular Dendrobe, is now in flower at Kew. It was first described by Dr. Lindley in the *Gardeners' Chronicle* for 1855 from leafless specimens, its native country being then unknown. In 1868 Colonel Benson, who sent from India to England, and generally to Kew, numerous and valuable Orchids, forwarded living specimens of the above from Moulmein. D. cumulatum has tufted pseudobulbs 1 foot or more in length, and produces its flowers on the one-year-old bulbs, the flowers being aggregated along the lower part of the bulbs, as in D. secundum and other allied species. The sepals and petals are nearly equal, and spread out so as to form a sort of standard, against which are placed the short white column and the papery labellum, which has a curiously cristated apex, not unlike what is seen in Vanda cristata. Spur rather long and thick, slightly curved. The under-sides of the petals and sepals, the spur, together with the peduncles and pedicels, are a shining rose-purple, the front of the flower being almost white and frosted. A sweet vanilla-like odour arises from the flowers, especially when they first open. A well grown plant of this Dendrobe would, when clothed in its freely produced bunches of bright sweetly-scented flowers, be a pretty object even when placed by the side of its numerous beautiful brethren. The Kew plant is but a small one. A figure of it will be found in the *Botanical Magazine*, t. 5703. *W.*

LÆLIA ELEGANS, VAR. ALBA.—Since the year 1853, when Messrs. Backhouse succeeded in introducing the typical L. elegans (figured in *Botanical Magazine*, t. 4700, as Cattleya elegans), some distinct and widely different forms of it have found their way into English collections, several of which have received varietal names, such as Houtteana, prasiata, lobata, &c., and the above name, alba. This last-mentioned is by far the most sought after of these varieties, and like many other white-flowered varieties of coloured Orchids, it always fetches a good price in the market. As is well known L. elegans has deep rose-coloured sepals and petals, and a purplish labellum with side wings much paler. In L. elegans alba the petals, sepals, and side wings of the flowers are pure white, whilst the blade of the lip is a bright purple-magenta, or violet-purple. Between this and the type there are numerous shades of colour in varieties of L. elegans, and sometimes one sees a rose tinted variety offered as the true white form. There is, of course, quite as much real beauty in some of these tinted varieties as in the pure white itself, but judged by their relative value in the market, the former are not so rare. A plant of what would deserve to be called the pure white form were it not for the faintest tinge of rose in its petals, is now in flower in the Orchid house at Kew. To those who do not know this Lælia, it may be pointed out as being one of the freest growing and easiest to manage among Cattleyas and Lælias, as it thrives well in an ordinary warm greenhouse temperature, and never fails to produce its large handsome flowers early in winter. *W.*

CYPRIPEDIUMS IN COLD FRAME IN SUMMER.—Some very fine Cypripediums which have been subected to especially cool treatment in summer and autumn are now in bloom at Mr. James Cypher's, Queen's Road Nursery, Cheltenham, the quality of their flowers and the strength of the plants being far in advance of those kept in a higher temperature—a fact which goes a long way towards proving the correctness of the plan which Mr. Cypher adopts. In the early part of the summer a cool, shady, moist pit having been selected, all the varieties of Cypripedium insigne, including C. i. punctatum violaceum and C. i. Chantinii, together with some plants of C. villosum, C. Boxalli, C. Sedeni, and several other of the Selenipedium section were placed in it, and carefully tended and watered. The plants grew with a remarkable vigour, and at the approach of cold weather they were removed to a cool house where all the varieties of C. insigne and C. Sedeni are now in bloom. So vigorous are the plants of C. insigne that many of the flower-stems are over 1 foot 6 inches in height, and over twenty of them are twin flowered. The C. Sedeni also seems to have gained depth of

colour and substance by its sojourn in the cold frame, and all the other plants treated, which are not in bloom, bid fair to produce in due time flowers of more than ordinary quality. Mr. Cypher considers that, grown on his plan in summer, a large selection of Cypripediums may be made, which, by summer treatment in a cold frame, may be rendered so sturdy that they will do in the cold-house for the winter and spring; indeed he has succeeded already in growing the lovely C. Spicerianum in a much lower temperature than usual, and he has now a great display of it in bloom, both of the original and the magnificum types. Of course in making the selection of Cypripediums for a cold pit, those why try the experiment must proceed cautiously. All the varieties of C. insigne are well known for their hardiness, and C. villosum, C. Boxalli, C. Schlimii, C. longifolium, C. caudatum, and all the other varieties of Selenipedium, C. Sedeni, and all the Sedeniform hybrids as well as Uropedium Lindeni, may safely be ventured on in a pit which gives most of the characteristics of a cold-house (not dry and draughty); but all the Bornean and Javanese varieties, in fact all with variegated leaves, must be cautiously dealt with, and not too much ventured on at once. Carefully worked out the subject will surely advance us a step in Orchid culture, and that, too, with pleasure to the experimenters.

Prominent among the many good things in flower now at Mr. Cypher's are Masdevallia tovarensis with seventy-four blooms in a 6 inch pan; Aerides Rohaneana with two long spikes of very sweet-scented flowers; Odontoglossum Cervantesii, with seven flowers on one spike and four on another; a grand show of very highly coloured Calanthe Veitchii, and over twenty fine spikes of Saccolabium giganteum. *J. O'B.*

Lycaste plana.—A very fine variety of this old but rare Bolivian species is now in flower with R. H. Measures, Esq., at The Woodlands, Streatham. In general appearance both plant and flower are like Lycaste Deppei. The sepals are olive-green, the hooded petals pure white, and the lip, which gives the great charm to the whole, is white, heavily blotched and stained with blood-red. L. plana was originally introduced in 1841, and no doubt all Orchid growers would be glad to see it again imported in fair quantity. *J. O'B.*

Orchids at Mr. William Bull's.—The Odontoglossum-house here, with its scores of spikes of O. crispum in endless variety of form, tint, and markings, is a sight in itself worth going a long distance to see, especially at this dull time of year, added to which there is a magnificent lot of O. Pescatorei, while O. Wilckeanum, O. Coradinei, O. madrense, O. tripudians, Calanthe Veitchi, &c., dispersed throughout the house, make a *tout-ensemble* charming in the extreme. In the vexillarium-house, Oncidium varicosum and O. Forbesii were flowering in profusion—two very useful and showy Oncids that every one should grow—but the Odontoglossum vexillarium and O. Phalænopsis are the best I ever saw, and in the most superb health and condition. The Masdevallia-house is now gay with hundreds of blooms of the lovely white Masdevallia tovarensis. On one plant I counted upwards of 100 flowers. M. trochilus, M. attenuata, M. amabilis, M. Reichenbachiana (a wonderful specimen of M. macrura), and others were in flower. In another of the cool houses I noticed a batch of the lovely Trichosma suavis, filling the house with its delicious perfume; Oncidium tigrinum, very sweet and handsome; Cymbidium Mastersii and C. giganteum, Odontoglossum Rossii majus, Lælia pumila in variety; the yellow Oncidium cheirophorum, Sophronites grandiflora, and quite a forest of spikes of Lælia anceps, L. autumnalis, and the variety L. autumnalis atrorubens; also a grand batch of Lycaste Skinneri, conspicuous among them being the varieties rubella, grandis, and superba; these were very fine in size and colour. In one of the warmer houses a new Angræcum from the West Coast of Africa was flowering for the first time, also the new Dendrochilum cucumerinum, and the very finest Dendrochilum Cobbianum I have seen, and as you see it here it is perhaps the showiest species of the genus; Cœlogyne Massangeana, Oncidium ansiferum, Zygopetalum maxillare grandiflorum, and a grand batch of Cypripedium Spicerianum. In another house there is a wonderful batch of Odontoglossum citrosmum, clean, healthy, full of glossy green leaves, and just finishing up the present year's pseudobulbs, which are exceptionally fine; Cycnoches chlorochilum, the Golden Swan Orchid, was flowering in this house; and the new Epidendrum xanthinum, Odontoglossum grande, O. Krameri, &c. Nothing can, however, surpass the vigour and cleanliness of the Cattleyas and Lælias in Mr. Bull's large specimen house, and the great number of splendidly developed flower-sheaths give promise of a magnificent display of bloom, interesting also, as many of the varieties are flowering for the first time in this country. Vandas, Angræcums, Sobralias are here represented in magnificent specimens, Dendrobium Dearei, D. superbiens, D. bigibbum, D. Fytcheanum, D. formosum giganteum, Barkeria elegans, Stelis acuminata, Cyrtopodium Andersonii, Comparettia macroplectron, Cattleya luteola, and many other good things were in bloom. *G. J.*

FORESTRY.

Forestry for December.—Thinning.—The general thinning of plantations and cutting of underwood should now be pressed forward without delay. In thinning pay early attention to the marginal trees or front lines, more especially upon the exposed or windward side, as by allowing these ample room they become branched to the ground, and thus form a permanent shelter and exclude the most destructive winds. As the thinning advances, remove to the drives or rides all timber, firewood, and branches. Heavy timber should be removed by horses, taking great care not to injure the bark of standing trees, and all branches, firewood, and small poles carried out and lotted by men. The present month is a good time to fall and remove hedgerow or farm timber, as but little damage can now be committed on fields, whether arable or ploughed down. In some cases it may be found advisable to grub or uproot farm timber, more especially where the trees are growing on the fields, or at a distance from the fences. As soon as the game coverts are shot through no time should be lost in completing work in connection therewith. To perpetuate the density and value of game coverts an annual pruning or trimming and layering of the plants is, although frequently neglected, all important. This is more especially the case with such plants as the Privet, Laurel, and Rhododendron, which, unless well managed, soon become useless for the purpose intended.

Nursery.—Conifer seeds may be collected during the present month, more especially the various species of Pinus which should be carefully dried and stored away in the cones until required for sowing in spring. Those seeds stored for some time back should be frequently examined and turned over; the rot-heap should also receive an occasional turn, so that fermentation may go on equally all over the mass. Keep on planting in the nursery during fine, open weather. In transplanting seedlings give ample room to each plant, which will not only promote a strong bushy habit and the formation of plenty of roots, but also aid to a great extent in preventing disease, as well as contribute towards the ultimate success of the trees when planted out permanently. In all nurseries 15 inches should be allowed between the rows of plants, and 6 inches from plant to plant for Larch and Pines; hardwoods 18 inches between the rows, and from 10 to 12 inches between the plants. All vacant ground in the nursery should be well cleaned and trenched. If to be replanted immediately spread on the surface a quantity of rich compost composed of bones, road scraping, lime, and general nursery refuse. Where convenient it is, however, much better to plant all vacant ground with Potatos, whereby a heavy dressing of farmyard manure can be applied without any of the risk usually attached to such when applied direct to the young nursery stock. By working the nursery border in general rotation all are kept in the best possible order for producing strong, healthy plants. In applying lime to nursery compost it may be well to remember, that for such trees as the Larch anything of a calcareous nature is best avoided. Collect all scourings of ditches, leaves, leaf-mould, and other refuse for the formation of compost heaps. Where sufficient leaves have not been collected, there is still an opportunity of getting them from corners and hollows into which they may have drifted.

Planting.—During favourable weather planting should still be the first consideration. In all dry situations autumn or early winter planting is much preferable, and attended with more satisfactory results than where such work is deferred till spring. Damp ground, peat-bog, or heavy clays are, however, best planted in spring. Ornamental planting and the formation of game coverts may also be carried on during favourable weather, but do not insert plants in ground containing particles of frost, or, as before stated, in any portions saturated with an undue quantity of moisture. When frosty or otherwise unfavourable weather intervenes all hands may be profitably employed in groundwork improvements, road-making, drainage, and fitting of ground to be planted in spring, as well as wood-splitting and the binding of faggots for home consumption.

Hedging.—Finish up the planting of new and repairing of old fences. Trim back all hedges that have been planted for two years, and in doing so cut upwards instead of downwards, as the latter method, by producing a ragged cut, causes irregularity of growth, and not unfrequently results in the rapid decay of the stools. For new fences the best plants to use are three-year seedlings twice transplanted, especially such as are of a bushy nature and furnished with an abundance of fibrous roots. Clean, by digging or hoeing, the sides of existing fences, which will materially assist in preserving the plants in a healthy vigorous condition. In filling up gaps in old hedges extra strong plants should be used, the growth of which will be much increased and strengthened by an addition of decomposed farmyard manure or fresh loamy soil in the positions in which they are to be planted. For dry, gravelly soils, Beech may be used in conjunction with the Quicks, in the proportion of one of the former to two of the latter.

Fencing.—Take advantage of dry, frosty weather during the present month for the cartage of all fencing material to unpland situations. Such fences cannot, however, be created in a satisfactory manner during frost, but by having the material at hand a start can be made at any time when weather and other circumstances permit. Repair existing fences, tree-guards, and rabbit-proof wire-nettings. By paying careful attention to these serious damages by vermin and game are frequently averted. A piece of Oak or Larch bark placed around the stems of standard specimen trees and firmly tied with galvanised wire at top and bottom is a cheap and most effectual method of protecting these from the depredations of hares and rabbits, and one that from extensive experience I can honestly recommend. Pay attention to tree stakes, and see that the moorings do not become loose during stormy weather. For large trees three wires placed equidistant and attached to stakes driven firmly into the ground form a capital stay. Smaller plants may be secured by driving a stout, sharp-pointed stake firmly into the ground as close to the tree-stem as practicable, and uniting this and the tree-stem with matting and tarred rope. Where a number of specimen trees are distributed through the park and adjoining grounds it will be found advantageous to have them examined minutely at least once every week, and any defaults at once set right. This, in most cases at least, can be readily accomplished in one day by a man and boy—the day most suitable and convenient being Saturday. They should be provided with a bag containing hammer, nails, and staples, as well as a spade, hatchet, crow-bar, and coil of wire.

Pruning.—As the thinning of plantations advances pruning should take up the rear, and all double or contending leaders, straggling or broken branches carefully sawn over and the wound afterwards dressed with a sharp knife or chisel. Dead or broken branches in the park or policy grounds should not be allowed to remain on the trees longer than can be avoided. The wounds caused by amputation may, after being dressed and smoothed over, be painted with tar or rubbed with damp earth, as the appearance of newly pruned branches is anything but desirable where exposed to view along the sides of drives and walks, or in close proximity to the mansion. Pruning should also be attended to in the nursery, not only as regards stem and branch but roots as well, the latter more especially with such trees as the Oak. Shrubberies will also require some attention in the way of removing and shortening the current year's growths. This should not be performed in a stiff or decided way, but so as to produce an easy and natural appearance.

Roads and Walks.—The present is perhaps the

best season of the year for renovating old or forming new roads, drives, or walks. Prepare material for repairing these, and never adopt the reprehensible practice of carting rough stones and breaking them where required for use on the road or walk. Previous to metalling roads a slight picking of the surface is necessary and will greatly assist the broken stones in settling down. Rough gravel or screenings placed thinly over the metalling and well pressed down with a heavy roller, will also help to consolidate the roadway and make it easy for traffic and of great durability. Attend to the drainage of roads and walks, their durability and comfort being much enhanced thereby. During wet weather roadside gratings should be daily examined and kept free from all accumulations of leaves, branchlets, and *débris* generally.

DRAINAGE.—Woodland ditches and the mouths of closed drains will require a more than ordinary amount of attention during the winter season. The drainage of woods and plantations seldom receives the attention it should, but when it is remembered that where stagnant water is allowed to remain really healthy vegetation cannot exist, the need of a thorough system of drainage will be the more apparent. Scour out and deepen all existing watercourses, and where necessary form new ditches for the removal of superabundant moisture. The mouths of closed drains should be examined weekly, or during very wet weather every alternate day, as the accumulation of rubbish may cause them to become choked and unworkable, which, if not at once attended to, may end in more serious and costly results.

GENERAL WORK.—Remove Ivy from trees and the roots of hedges. In the former case the work is most effectually performed by grubbing up the roots for a distance of 3 feet around the base of each tree. It is also better to have it removed from the tree stems for a distance of, say, 4 feet up. When time permits a thorough clearance of all decaying wood and *débris* from plantations should be effected. The practice of leaving the smaller branches and unsaleable pieces of wood to rot on the ground, or, what is equally bad, placing these roughly together for game shelter, is most objectionable, and should never be tolerated. Where prunings or fallen branches are allowed to lie and accumulate from year to year the woods cannot be in a healthy state, as such *débris* are the most prolific sources of the fungoid diseases, and also of the numerous insect pests which have committed such extensive depredations on our forest trees of late years. The Pine beetle (Hylurgus piniperda) and Pine weevil (Hylobius abietis) are two of the most destructive insects in Fir woods, the origin of which may, in the majority of cases, be traced to some old wood or branches that had been left lying about when thinning the plantation. By taking the precaution to have all such wood collected and burnt at this season of the year, before the genial warmth of the returning spring and summer calls these insects into active life, multitudes of them will be destroyed, and as the age of reproduction will never be reached the insects will become less and less numerous, until finally, by careful management, they become extinct altogether.

If not the most destructive certainly one of the most unsightly fungi we have to deal with is Capnodium Footi. Evergreens, such as the Laurel, Bay, Ivy, and Aucuba seem to fare worst, although I have found it somewhat plentiful on the Sycamore, Beech, and Holly. The fungus gives to the leaves the appearance as if exposed to smoke, which, under a strong lens, resembles a vast agglomeration of little sooty nodules. Although this fungus is usually accompanied by scale insect, and undoubtedly grows with greater luxuriance where the excretions of these are present, yet the presence of the one is by no means necessary for the growth of the other; indeed, I have repeatedly found the fungus without the scale, and *vice versâ*. Two methods adopted for the destruction of this fungus are collecting and destroying the affected foliage, and syringing the plants with a weak solution of paraffin oil and water. *A. D. Webster, Penrhyn Castle, North Wales.*

"HAVANA CIGARS."—As an illustration of the value of names to commercial articles the following extract from the report of the British Consul on the trade and commerce of the province of Bahia, will be of interest. Under the head of "Tapioca, Cassava, and Tobacco," it is stated that the supplies annually increase, "but the three articles are locally subjected to so many 'tricks of the trade' that few persons seemingly care to ship them. For the edification of consumers, I may mention that Tobacco goes hence to Hamburg and returns here and to the West Indies as 'Havana cigars,' and no doubt much is sold under that denomination in England and throughout Europe."

DISEASE OF PARSNIPS.

PERONOSPORA NIVEA, UNG.

IT frequently happens that growers of Parsnips find the roots attacked by a disease which greatly resembles in its effects that of Potatos. The large fleshy tap-roots exhibit brown diseased patches, which patches may at length extend over nearly the entire root. The whole growth may then fall into a mass of putrescence. In referring this ailment to the Potato disease the practical growers are not far wrong, for both diseases are caused by the attack of a resting-spore and zoospore-bearing Peronospora.

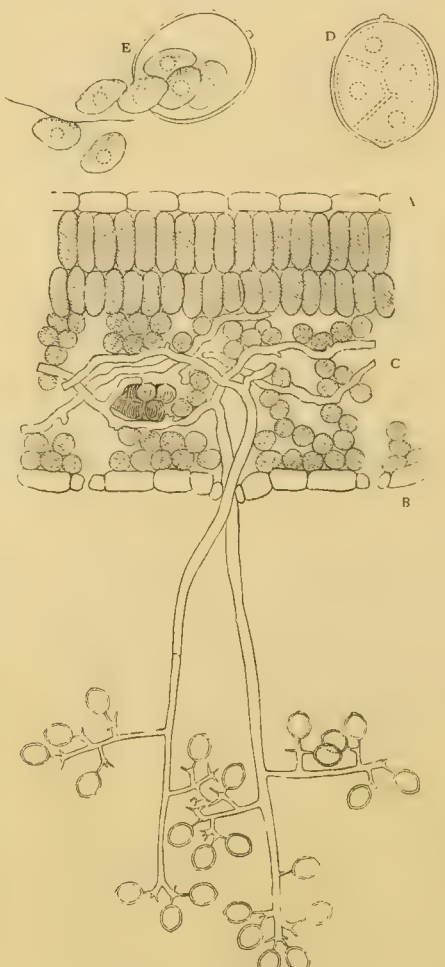


FIG. 124.—DISEASE OF PARSNIPS

Section through a fragment of Parsnip leaf, showing Peronospora nivea, Ung., growing from the lower surface, enlarged 200 diam. Conidia and zoospores enlarged 1000 diam. A, Upper, B, lower skin of the leaf; C, Spawn of the fungus branching in the tissue of the leaf.



FIG. 125.—DISEASE OF PARSNIPS.

F, G, Resting-spores of Peronospora nivea, Ung.; H, J, K, L, M, Protomyces macrosporus, Ung.

The disease of Parsnips now before us is caused by a fungus named Peronospora nivea, of Unger, sometimes printed as P. umbelliferarum of Caspary. The parasite is not confined to Parsnips, for it grows on many other Umbelliferous plants, notably Chervil, Hemlock, Parsley, and various worthless Umbelliferous weeds. It will, therefore, be seen that Umbelliferous weeds nurse the parasite when garden Umbellifers are not near. As in the Potato disease, the first attack of the fungus of Parsnips is made on the leaves, from the leaves (where the fungus ramifies in the interior) the mycelial threads reach the stem, and by the soft interior of the stem the fungus easily reaches the esculent roots.

At A, fig. 124, we have illustrated from Nature, enlarged 200 diameters, a section through a fragment of a Parsnip leaf; the upper surface of the leaf with its epidermal layer and two rows of sausage-shaped palisade cells is seen at A, the lower surface, with three stomata or organs of transpiration at B, and the loosely packed cells of the interior of leaf, with three spiral threads belonging to veinlet at C. The spawn of the fungus is seen traversing the intercellular spaces of the lyaf, and emerging as spore-bearing threads through one of the organs of transpiratien. The fungus spawn is furnished with numerous minute suckers, and these suckers pierce the constituent cells. The mycelium of the fungus "causes putrescence by contact;" by this we, of course, mean that the contact of the fungus breaks down the cell structure, and putrescence immediately follows. The fungus utilises the cell contents as food. A newspaper critic has recently found great fault with our description of a fungus causing "putrescence by contact," because his books had taught him that the mycelium of Peronospora pierces the cells in the style that a thread passes through a bead. No doubt many mycelia pierce plant cells somewhat in this way, but in some instances, as in the one before us, the mycelial threads have the same diameter as the diameter of the cells themselves, and, as the growth of the mycelium proceeds, the leaf falls into putrescence—"by contact"—the whole cell structure collapses before the growth of the thick mycelium.

The tree-like branching growth of the fungus, two stems having emerged through one organ of transpiration, is seen in the lower part of this illustration, the numerous dull semi-transparent spores are balanced on inconceivably minute and fine spicules or short hair-like branches. When the spores, or conidia as they are often termed, are enlarged to 1000 diameters, they are seen as at D. At the base of the spore the minute stalk by which it was at first attached to its supporting thread is seen, and the membrane of the spore is shown as gradually thinning towards the top. The top is the weakest point of the spore, and at this point it bursts at the time of germination. As the spore reaches maturity, and especially when placed on any moist surface, its interior protoplasmic substance becomes differentiated into a number of polyhedric portions, as shown by the dotted lines at D, and each of these portions—six, seven, or eight—is destined to become a zoospore. A ripe conidium is shown in the act of germinating and setting free its zoospores at E. Each zoospore is at length furnished with two fine vibrating hairs, or cilia, and with these cilia the zoospore is aided in its movements over any damp surface. Zoospores are generally described as naked specks of free protoplasm, with no cell-wall or membrane, and for this reason we have always illustrated them with a single, and not a double outline. Personally, however, we consider it by no means proved that the zoospores in Peronospora are without an extremely attenuated membrane, and that this membrane opens or bursts on the germination of the zoospore. At germination the cilia vanish, they are absorbed by the zoospore or they break up into fine particles, or they dissolve, or appear to do so. It is sufficient in this place to say that the fine vibrating hairs become lost to sight at the time of germination. It is a nice point for cavillous persons to fight about, and signs are not wanting that more than one disputatious person is ready to "settle" this nice point for us to his own satisfaction. The Rev. M. J. Berkeley was probably the first person who ever saw zoospores in Peronospora, for not only was he the first to illustrate them in Peronospora infestans of Montagne, but

in describing the plant now before us, nearly fifty years ago, he wrote, "Spores very large, and decidedly filled with sporidia."

As in the fungus of the Potato disease, the putrefactive fungus of Parsnips produces oospores or resting-spores in the leaves, stems, and roots of the plants affected. Two of these bodies, enlarged to 400 diameters, are shown at F, G, fig. 125.

It is a remarkable fact that a second fungus, named Protomyces macrosporus, of Unger, often grows in company with Peronospora nivea, on Umbelliferous plants. The associated growth is extremely common on Goutweed (Ægopodium podagraria, Linn.), and the presence of the fungi is very manifest to the unaided eyes by the deformed and knotted or swollen appearance of the affected leaves. The Protomyces bears oospores or resting-spores like the Peronospora, and when the oospores belonging to the former are small in size, they are not to be distinguished from the oospores of the Parsnip fungus. The oospores of Protomyces are, however, variable in size, and a series of five examples, enlarged 400 diameters from Nature, are shown at H, J, K, L, and M. The presence of the oospores in the leaves causes decayed pieces containing oospores to drop to the ground.

We believe that Professor Caspary, and at one time Mr. Berkeley himself, believed these oospores of Protomyces to belong to the Peronospora of Parsnips, but of late years we think a different opinion has prevailed—an opinion we share in, and which indicates that it has not been proved that Protomyces has anything to do with Peronospora. The two fungi simply grow close together on and in the same leaf, like Æcidium and Puccinia. Highly imaginative persons say the two fungi look as if they grew from the same mycelium, therefore they might possibly grow from the same mycelium—therefore they do grow from the same mycelium.

When the oospores of Protomyces burst on the ground in spring they set free a large number of little moving oscillating spores, about the same, or a trifle less in size than the zoospores of Peronospora nivea. They are non-ciliate zoospores, or if they have cilia or vibrating hairs they are too fine to be seen. On touching each other it is common to see one or two of the zoospores fuse together. Professor De Bary has termed this fusing "conjugation," and when two spores of Protomyces have touched he terms them zygospores, because, as he says, they are yoked, paired or connubially "conjugated." We need hardly say it is not every one who believes in this startling interpretation of one of the commonest phenomena belonging to fungus spores. If true, the spores of many of the higher fungi "conjugate." Place fresh spores of the common Agaric, Trogia crispa, Fr., on to a glass slide and fix under the microscope. Every spore will be seen free. Breathe on the glass and look again, and it will be seen that the warm moist breath has caused the spores to "conjugate" in the most polyandrous and polygamous manner.

The mycelium of Protomyces is capable of piercing and breaking down cell structures, and so causing putrefaction after the manner of Peronospora, therefore the resemblance in habit between the two fungi, and the resemblance in the oospores is, to say the least, striking. Fresh observations are wanted from Nature, especially from persons not too apt to jump to conclusions.

The original drawings from which our illustrations have been photographically reduced with the original microspical preparations of the Peronospora and Protomyces may be seen in the Department of Botany, British Museum, South Kensington. As the resting-spores of the fungus which causes disease in Parsnips hibernate in the decaying leaves, stems, and roots of the plants affected, it is obvious that the only way to stamp out the disease is either to burn or deeply bury all affected material. An alternation should also be made in the crops; Umbelliferous plants should not be grown for two years in succession on the same plot of ground if disease has been noticed. *Worthington G. Smith.*

"M.P."—A curious illustration of the inconvenience attaching to abbreviations when transferred to a foreign language, is afforded in a recent number of the *Revue Horticole*, wherein the reader is requested to pronounce the name given to a new kind of Potato as if were written *Eme Pi*.

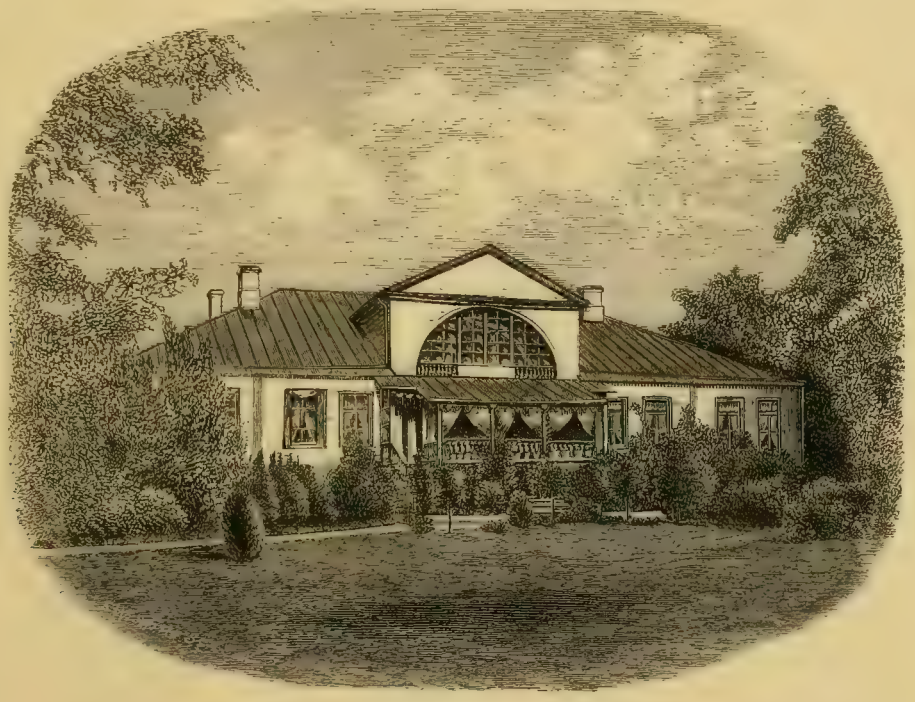


Fig. 126.—The Director's House, Botanic Garden, St. Petersburg. (see p. 713.)

NEW CHRYSANTHEMUMS.

Admitting that London is the centre of Chrysanthemum activity, those, like the writer, who cannot readily get away to see your great exhibitions, and who are still inveterate admirers of the flower, deserve your commiseration. It is probably from this point of view Mr. Cannell, of Swanley, has thoughtfully sent me a box of blooms, principally new introductions, and that will likely find their way into commerce this year. Permit me to refer to a few of the best to my mind. I give the place of honour to the representative of what in future will probably be a new and distinct class—the Anemone-Japanese. A great beauty is Fabias de Maderanaz, high convex cushion-like centre, pure white, with a shade of faint rose, the outer guard petals falling downwards almost parallel to the stem. Cloth of Gold is a welcome addition to the yellow Japanese; like the last, the petals are very numerous, and form a large convex globular head, without any of the looseness peculiar to this class. Exactly opposite in conformation is Belle Pauline, very large, broad loose petals, white, tinted rose at the edges, and measuring 7 inches across. Formosum, very broad, lilac-rose reflexed petals, reminding one of the good old peach Christine, but of deeper tint. Having a colour-resemblance to this, but lighter, is Brise du Matin. The petals are perpendicular half way, and then curiously fall outwards—very broad. Mignon may be included along with the two last. I now come to four all with narrow petals, and that might be included in the thread-like tesselated Japanese. Salteri, intense dark crimson, with a shade of gold towards the extremity of the petals, finely globular—very large. Almost identical in colour, with broader petals, the outer ones forming a fringe, is Mrs. Townshend. Similar, but with a lighter shade of amaranth, is La Belle Alliance. Different from either of the last three in colour is Julius Scarff—a great acquisition; petals deep purple-pink, reverse pure white. This white is wholly unseen, as the edges of the petals join at the back. The size and habit seem all that could be desired. There

can be little doubt that these will find their way into all exhibition collections. Of fine habit, but a shade smaller, is the bronzy-gold Comet. Somewhat similar in colour, lighter centre, reflexed broad petals, is Distinction. Before coming to the singles I must not forget Cullingfordi—crimson, also reflexed.

The following, to my mind—and I have grown them for two years—is the best half-dozen of singles yet introduced :—Magenta King, long deep magenta-red petals, with conspicuous centre ; Canary, far the best of the yellows, and far finer than Mr. Toole ; Coachman, though it may seem ungallant to say so, I prefer to the earlier white introduction, Miss Cannell ; Mrs. Kellock with me has been early, large, and produced very numerously—colour light rose, quilled florets ; Eilen Terry, even better than the last ; finally, and the best of all—a Japanese single, of the most attractive white, suffused blush—named America, very large—a great beauty. *W. J. Murphy, Clonmel.*

NEW HALL, HEY, RAWTENSTALL.

IT is always a pleasure to have a look through the Orchid-houses at this noted establishment, for if there should not happen to be a large display of bloom, as is the case just at present, there are abundant indications that in their proper season many showy kinds will be gay with their rich and pleasing flowers. It is a very gratifying feature, also, when the proprietor is so well versed in the knowledge that pertains to Orchid culture as Mr. G. W. Law-Schofield is ; doubtless this arises in the first place from the fact that some care and discernment are necessary in the earlier purchases, as well, too, as in those that are continually being added to the collection. Couple this knowledge with an enthusiastic fondness and admiration of the plants and their curious and fantastic flowers, and you have just such an one who will not be satisfied in his endeavours until he reaps a large and continuing measure of success. Such success Mr. Schofield is now reaping. His plants look well. The six houses devoted to their culture are filled with a rich assortment of the choicer and better forms, and when the days begin to brighten, the Dendrobiums first, followed by the Cattleyas, Odontoglossums, &c., will make a display it will do one good to see. The Dendrobium Wardianums are promising well, about forty plants having about 200 new bulbs well ripened, with buds showing a good part of their length, and some bulbs are 3 to 4 feet long ; D. crassinode, well represented, having bulbs 2 to 3 feet long ; D. devonianum, with scores of new bulbs, some reaching 4½ to 5 feet, will give an idea of the feast in store to be obtained by these showy and now easily obtained species. I noticed the thoroughly good old species D. nobile is still fostered and cared for—a grand plant, just tied out, measuring 4½ feet through, having about 120 new bulbs, some 4 feet long ; other choice varieties of nobile are also to be met with, including a nice plump piece of nobilius. Of Cattleyas a very nice collection is here. A plant of imperialis, which is a fine form of the gigas and Sanderiana section, was in flower. These must be seen to obtain a correct idea of their individual beauty. This section varies considerably, and description fails to give a correct idea of their beauties. C. aurea was also in flower, and in some respects excelling the splendid variety figured in the *Orchid Album* (plate 84). These latter species and varieties should, if they are grown with other Cattleyas, be suspended from the roof, or grown on the most sunny side of the Cattleya-house ; but if a number of plants have been secured, they should be placed in a separate division, and treated in a manner where just a little more skill and care need to be exercised. First, do not over-pot them better, just and only just have room to put the plants in the pots, crock well up and work only a little coarse fibrous peat about the plants, water sparingly, giving plenty of air and light and a fair amount of heat, but not the moist damp heat so coommonly recommended for many other things : when once rooted they will grow nicely away and though perhaps not flowering the first season, they will by-and-bye produce their showy blossoms, and then all the attention is amply repaid. Numerous other Cattleyas are here, Gaskelliana that brought thirty-five blooms during the past summer ; Mendeli, Trianæ, Mossiæ, and several nice pieces of exoniensis, all in excellent condition, having a large number of sheaths well up amongst the foliage. The Odontoglossums are in good heart also, the popular and leading sorts being well represented, amongst them several varieties of exceptional merit. The O. vexillariums, of which there about three dozen, are now in a satisfactory and promising condition. There are scores of other equally interesting specimens ; these, however, will be sufficient to give an idea of the excellent collection that Mr. T. Wise has under his charge. *W. Swan, Fallowfield, Nov. 25.*

CHRYSANTHEMUM SHOWS.

THESE competitive exhibitions having now, in the Southern districts of the country, come almost to an end, we can only mention briefly the minor show at Devizes, held under the auspices of the Benevolent Institution of that town. The show was intended to raise money for the relief of the destitute poor of the town during the winter months. This most commendable purpose was aided by the ladies and gentlemen of the district, and was the means of bringing a very excellent show of Chrysanthemums together. The spacious Corn Exchange was made available for the purpose. A Challenge Cup, which is annually competed for, is awarded to those who have gained the greatest number of prizes ; another Silver Cup is given by the Mayor for the best six large-flowered varieties. Cut blooms and plants alike were creditable productions, and some good fruit from neighbouring gardens made its appearance on the show tables, and the attendance was a very good one.

THE SHROPSHIRE GARDENERS' AND AMATEURS' ROSE, FRUIT, AND CHRYSANTHEMUM SOCIETY held its annual exhibition on November 13, during beautiful weather, and the number and quality of the exhibits, both as regards plants, cut blooms, and fruit, all that could be desired, the competition being very keen throughout. Our correspondent informs us that the show was very tastefully arranged, and the attendance of visitors good. Several miscellaneous exhibits made their appearance, and, although not meant for competition, added to the pleasing aspect of the show. E. Wright, Esq. (gr., Mr. West), secured the principal prizes for cut blooms with good examples of well-known varieties ; and the Rev. J. D. Corbett (gr., Mr. Milner) the chief prizes for plants with well-grown, fine-foliaged, and abundantly flowered specimens. Prizes for fruit were pretty freely distributed, and many contributions were present on the show-tables, the examples observed being very fine of their kind.

THE PROPAGATOR.

NEPENTHES, OR PITCHER-PLANTS. — Gardeners should at this time begin to make a general batch of Nepenthes cuttings, because in the first place the cuttings can be obtained in a more dormant state than at any other season of the year, and in the second the old plants which have been cut back for propagating purposes will have ample time during the winter months for the formation of shoot-buds, which will break into growth with the coming spring and develope into bushy plants laden with pitchers. It is a good time to cut back any old specimen plants that have grown unsightly, or too large, and those that have degenerated into a non-pitchering state. We may say the Nepenthes will occasionally fall into the latter state, and there is no other remedy for it than to cut the plants back, leaving only one or two leaves on each shoot as assistance to the plant in the formation of fresh growth.

Nepenthes from Cuttings.—The plant must be cut down and divided as follows for cuttings :—The tops of the plant being taken off first, which should have three or four leaves upon it, the remaining portion can be made into cuttings having two leaves upon each piece. It is not necessary to cut them at a leaf-joint. Before potting each cutting should be taken in hand and the bottom of it should be cut straight off, in order that its surface may be smooth and moist, which is necessary to the healthy formation of roots, and if a sharp knife, penetrating to the depth of ⅛ inch, is drawn across this smooth surface so as to form a ×, it will be found to cause a more regular production of roots. Small 60-sized pots are used for the cuttings, and also soil composed of half finely-chopped sphagnum moss, a quarter fibrous peat, and a quarter sand ; to this mixture should be added a small quantity both of charcoal broken into pieces of Hazel-nut size, or of finely-broken oyster or cockle-shells. In potting a little sand should be placed at the base of each cutting, which should be so firmly pressed into the pot that if the plant were held up by its stem it would not come out of the pot. Each cutting should be steadied by a small stick, to which it should be securely tied, and each leaf should be separately looped up as erect as possible—without, however, doing any damage to the cutting. The cuttings should now be well watered, and must be placed upon a good bottom-heat in a case or frame. The following treatment must be strictly observed while the cuttings are in the frame or case :—

For ventilation the glasses or lights should be removed for one hour every morning, and during this time the cuttings that have become dry should be watered with a fine-spout pot, but the whole of them should be watered overhead with a fine-rose pot to wash off any condensed moisture that may have accumulated upon them during the night. If the sun shines brightly on the frame shading will be necessary for the time. As soon as the cuttings have well rooted they should be allowed a little more air, and the quantity should be daily increased until they are strong enough to stand out upon the open bottom-heat. While they are in small pots care must be taken to keep them well watered, both in the soil and overhead. After the cuttings have been three weeks upon the open bottom-heat they should be potted into large 48's ; each plant should be potted firmly, having the soil raised in the centre and sloping off towards the edge of the pot, and also each must be supported by a stick. For the six or eight weeks following the plants must be replaced upon the bottom-heat, and kept well watered ; and when they are thoroughly established they can be placed in baskets and suspended from the roof in the ordinary way. They must be kept well watered and lightly syringed. It is a good plan to unhook the baskets and soak them well in the water-tank occasionally.

The Nepenthes are seen to the best advantage when tastefully arranged in baskets suspended from the roof. The baskets should be made of hard and durable wood, such as Teak or Oak, and should be filled with soil composed of half very fibrous peat, one-third turfy loam, and a quarter sand, mixed together, small quantities of charcoal broken into pieces of Walnut size, ballast, or finely broken pot-sherds, and chopped sphagnum moss.

They should be grown in a temperature varying from 60° to 70° Fahr., and allowed a good and constant supply of water. This must be carefully attended to, because if the plants are allowed to become dry two or three times it will cause a loss of foliage and pitchers, which will destroy the ornamental and graceful appearance of the plant. It is also necessary to syringe them gently overhead several times during the dullest part of the day. *T. O.*

Plants and their Culture.

GREENHOUSE FLOWERING PLANTS. — In most establishments where there is a general collection of Cape and New Holland plants there will be a certain amount of training and retying that will want attention in the case of specimen and half-specimen plants, and young stock will likewise require some regulating, which if done in the earlier stages of their existence will save some trouble in the future ; besides which, if some types of plants that are naturally of a stiff and brittle growth are allowed to go too long without receiving the necessary attention, there will in all probability be some breakage, which will cause no small amount of annoyance when it happens among choice specimens. At this season of the year any leisure time may be devoted to work of this kind. The sticks should be carefully pointed, so that they may easily be inserted into the soil. In sharpening the sticks do not leave any sharp edges, but rather go to work as if the point was that of a lead pencil, only rather more tapering. Do not allow any of the sticks to be placed dangerously near to the centre of the ball. When I used to do work of this kind I preferred to have the majority near the edge of the

pot, but not quite close, or the fine fibrous roots that are usually found there will be injured. With specimen plants of some few kinds there will be need of a greater number of sticks to keep them shapely unless the training be done somewhat after the manner of a climbing plant—a style I do not advocate. Dracophyllum gracile is an example of this kind of plant, and when the sticks are taken from such the soil should be pressed firmly down, removing at the same time any that may be decomposed and sour, replacing the same with a little fresh peat and silver sand in about equal proportions. For tying these plants the best material to use is thread; if raffia be used it will decay very soon if used sufficiently small so as not to be unsightly. The sticks for such plants of slender growth ought also to be as small as is consistent with safety, except where they enter the soil.

With several plants, such as Erica Cavendishii, E. depressa, and other compact and dense-growing species, but little tying is required, as their sturdy growth, with attention given to the stopping of any gross shoots, will be found almost sufficient to keep them shapely. Indian Azaleas that are solely employed for conservatory decoration hardly ever require a stick to keep them in the necessary form. Ours have not any stick or ties about them, and are grown somewhat to a face in order to arrange them effectively when in bloom. When in flower I use the straggling shoots for cut blooms, thus getting a good length of shoot with the flowers. For home decoration I think it a waste of time to tie and train any kind of plant that can with good culture be made to do without it.

The usual routine of watering among the specimen plants in the greenhouse must be proceeded with in a most careful manner during this season of the year. The health of the plant, the size of the pot in proportion to its top growth, and whether repotted during the last summer, will have to be taken into consideration. The knack of knowing just about the right time to apply water to the delicate rooted Cape and New Holland plants can only be acquired by practice, and when this is mastered one of the difficulties in the successful culture of these plants will be overcome. Indiscriminate watering, or watering them in case they may need it on the morrow will not do with these subjects. The due regard to this important fact is often overlooked, the plants become unhealthy, and so have become unpopular with gardeners, being considered to be of more difficult growth than they really are. To this, as much as any other cause may be attributed the rare appearance of several plants which some few years back were found in many collections. It ought to be added that rain-water is preferable to any other, avoiding what is commonly known as hard or well water, so far as is possible.

To the present time but little fire-heat will have been needed in southern parts of the country, a few nights only excepted, to maintain the night temperature at 38° to 45°. Ventilate freely during the day whenever favourable, the fine weather of late having been particularly suited to this end. Should the change of weather just set in continue, a trifle of warmth applied for a while in the daytime will be beneficial to dispel damp and keep under mildew. This parasite may be kept greatly in check by applying a little sulphur to the hot-water pipes, no danger from the same need be apprehended whilst the pipes have not to be made unduly hot, which latter should never occur in the greenhouse at all. By cleanliness and other means strive to make the plant-houses as attractive as possible.

Softwooded Plants, whether they are grown in houses or in pits, will need every attention as regards ventilation, in order to keep the growth which is made as sturdy and compact as possible; if in pits the danger from injury by an excess of dampness will be greater than in houses. Show and fancy Pelargoniums are safer on a shelf near the glass in a house rather than in a pit. Primula sinensis, especially if in a forward condition of blooming, will be better in a house, or if in a pit, where a trifle of heat in the pipes will aid in keeping a more genial temperature, and where any excess of damp will be dispelled. Remove all flowers as they fade, and before decay sets in on the petiole of the bloom, or the same will soon be communicated to the entire truss. Cinerarias in all stages will be better in an airy house than allowed to remain in a pit; herbaceous Calceolarias, however, will thrive well in cold pits which are frost-proof. Stocks in pots will be safe enough in similar places, if the precaution is taken of keeping them rather dry till growth commences in the spring. Lachenalias will now be growing briskly, see, therefore, that the foliage is kept as dwarf and compact as possible, a light position on a shelf suiting them admirably. *James Hudson, Gunnersbury House Gardens, Acton.*

Fruits Under Glass.

Peaches and Nectarines.—The early house having now been closed, the direction laid down for it on p. 591 should be followed; no subjects are more susceptible to injury from undue hastening by too much warmth during the early stages of its progress than the Peach, therefore, if success is to be attained patience must be exercised, and no increase in the temperature to that recommended be attempted until the blossom-buds commence to swell freely, when the night warmth may range between 45° and 50°, the maximum being maintained only when it can be commanded by a minimum amount of artificial aid; the day temperatures may also be raised to from 55° to 60°, and increase by sun-heat even to 65° or 70. A continual circulation of air, which should be admitted by the front ventilators so that it passes over the pipes and becomes chilled before dispersing through the house, will be instrumental in strengthening the buds, and making their progress safer. The syringing of the trees must still be pursued with discretion, avoiding its practice late in the afternoon; but a humid atmosphere must be kept up continually. Dryness at the roots being one of the causes of buds dropping, the condition of the border must on no account be overlooked, and sufficient tepid water to thoroughly soak it down to the drainage should be given as frequently as is necessary, providing the rubble and tile drains are perfect; an error is more likely to be committed by not giving enough than not enough. If a successional-house has not already been prepared for closing it should be taken in hand without delay, and be closed in due time. In pruning and training a mistake is sometimes made by those inexperienced in laying the wood in too closely, and which would not take place if the development of the foliage was rightly taken into consideration. Weak growths should be removed while those that are tied in should be left entire; where, however, from want of space or some other cause a shoot has to be shortened let it be to a triple bud so that a wood-bud is ensured at the point: the fruit-buds are easily distinguishable from the wood-buds, by their plump, more globular form. Trees are uncommonly well furnished this season with matured wood, which literally bristles with fruit-buds—a happy circumstance, resulting from the great amount of summer sunshine experienced this year. Houses at rest should be kept wide open and as cool as possible; where accommodation has to be found in them for bedding or other plants, particular care must be taken now frosts are prevailing that they are not kept so close and warm as to cause the buds premature excitement, for if this takes place and a subsequent check occurs, they will drop to a disastrous extent: perhaps the prospect of a good crop is oftener sacrificed from carelessness in this matter than from any other cause, while it is often attributed to defects in the border.

Vines.—Muscats or other thin-skinned varieties which it is intended to make early use of, and which it is not desirable to try to keep so late as Lady Downe's and some other thick-skinned kinds, that can be kept longer in good preservation, may now be cut together with a piece of their young wood attached, and arranged in the Grape-room, in bottles of water. The object of having them gathered now, is because it admits of the Vines being pruned, and affords a longer period of complete rest than could otherwise be the case. The sooner any Vines are pruned after their foliage falls the better it is for their health, as it removes the possibility of the sap when it returns—which it quickly commences to do—from being wasted in swelling buds upon laterals that have to be cut away; for this reason, of early return of sap, the deferring of pruning until it is late has an impairing effect upon the constitution of Vines, besides inducing liability to bleeding; this, however, unless pruning is put off until very late, can be prevented by a timely application of styptic. This calls to mind a case of bleeding which happened to a house of Vines here some years since, and which was stopped by the following means:—The Vines in question were old ones of Lady Downe's and Mrs. Pince; they were pruned early in January, and tied in their permanent positions. All went well until they were started, when several of the top spurs on each Vine commenced to bleed severely, while those on the lower portions of the rods were perfectly dry; it occurred to us that if we applied styptic to the latter and allowed it to set, and then bring the points of the Vines into a drooping position, in the meantime commanding a low temperature by closing the valves and throwing the house open at night, the force of the sap would be lessened upon the bleeding spurs, while it could not affect the others, and the bleeding would cease. And so it did, and we lost no time after the spurs had dried in stopping their open pores with styptic, and replacing the Vines as soon as it had hardened, when we found the means taken were effectual. Since the last Calender was written the mild weather has changed to sharp frosts at night and occasional showers of snow and sleet; during the continuance of such weather the temperature recommended for the early house must be kept at the minimum point. The buds being now on the move examination should be made of the border, and if found to be dry it should be moistened through with water at a temperature of between 85° and 90°, and old Vines breaking weakly may be with advantage assisted with liquid manure. Young Vines which are to fruit for the first time next season should now be fit for pruning, and may be shortened back, so that 6 feet to 8 feet of young wood is left on each; the condition of the rods must regulate the shortening, providing they are moderately strong, and have prominent buds, the greater length should be left, but should they be weak, or if strong appear by the flatness of their buds indisposed to break regularly, closer pruning should be adopted. *Thomas Coomber, The Hendre Gardens, Monmouth.*

The Hardy Fruit Garden.

Presuming that the work of root pruning and transplanting is finished, and the young trees correctly labelled and carefully staked, pruning must receive our attention, beginning first with Apples in orchards. Where trees are of mature age but little pruning is required, but where the branches are crowded together cut some of them out, and especially in the centre of the crown, using a small sharp saw to cut out weak or ill-placed branches, but on no account shorten back the branches, as this would have the effect of still more crowding the centre later on; keep the shoots thin, and the fruit will come finer. What is of more importance is to give a dressing of manure liberally to any tree which has borne a heavy crop of fruit, or which is well set with bloom-buds. In the case of young trees it is otherwise; the tree must be shaped to what it will ultimately become, whether standard, pyramid, or bush form. Too much wood is often left in the earlier years, and then severe pruning is obliged to be resorted to, and for that reason (except in the case of gross shoots) we do not recommend the shortening of shoots, for if the wood is well ripened there is no necessity for the tree is sure to get thick enough without this. In the case of orchards which have been planted many years, and where the climate is damp and the atmosphere pure, vast quantities of lichen will grow on the old wood, giving an unsightly appearance; this can be scraped off in moist weather with any blunt instrument and the stems washed with a mixture of lime and soot: the latter tones down the whitewashed appearance which lime alone presents. Oftentimes great mischief is done in orchards by hares and rabbits, more especially when much snow is on the ground. We have used here successfully the "Tree Protective Composition" manufactured by Nathan Ahlbottn, Leith; it is sold in small casks at 18*s.* each, or in larger quantities.

Pears require exactly the same treatment as Apples except in the case of pyramids, which is a very desirable form for the Pear. When grown in this way the tree must be kept in shape by the free use of the knife, and care is required in the formation of young trees not to shorten the leader much, thus causing too many horizontal branches. The Cherry dislikes the knife and its roots being meddled with, and does better when planted on grass-land than any other orchard tree. If orchards must be dug great care is required to prevent injury of the surface-roots; to simply fork the soil lightly over is enough for that purpose.

Endeavour to keep a regular temperature of about 40° in the fruit-room, and do not leave the door or windows open; and now that the outside temperature has fallen low, close all the ventilators, and see that the shutters are kept on the windows, and use those kinds first which are most likely to spoil; and look carefully over the fruit weekly, removing all decaying ones. That which comes into use in January and the two following months is usually placed on the ground floor, and brought forward after the New Year. Should severe weather set in and frost enter the room, leave the fruit undisturbed until it gradually thaws. Fruit is longest preserved by excluding all light and keeping a low fixed temperature. *J. Rust, Eridge Castle, Sussex.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec. 8	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	Dec 9	Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Scientific Committee, at 1 P.M. Sale of the Fallowfield Collection of Orchids, at Protheroe & Morris' Rooms. Sale of Roots and Lilies, at Stevens' Rooms
WEDNESDAY,	Dec 10	Sale of Lilies, Roses, and Plants, at Protheroe & Morris' Rooms. Sale of Hardy Plants and Bulbs, at Stevens' Rooms.
THURSDAY,	Dec. 11	Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Sale of Imported Orchids. at Stevens' Rooms.
FRIDAY,	Dec. 12	Sale of Imported Orchids, at Protheroe & Morris' Rooms. Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
SATURDAY,	Dec 13	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.

WHEN, a year or two ago, some of our excellent friends from the "Cercle d'Arboriculture" and the National School of Horticulture of Belgium, paid us a visit, they were very favourably impressed with everything they saw, except our market gardens. In the matter of MARKET GARDENING they thought we were behindhand. We do not know in what precise details we were considered defective, but we are quite disposed to accept the general impression as correct, so far as it goes. The opportunities for forming a judgment were not very large, but on the other hand the judges were exceptionally competent men, and more disposed to praise than to blame. Our climate is certainly not worse than that of Flanders, our soil is as good or better, the kinds we cultivate present no inferiority to those we are accustomed to see in the Belgian markets. The deficiency must therefore lie in the method of cultivation, and assuming the correctness of our friends' verdict we are inclined to attribute their superiority to more favourable conditions as to the rent of land, incidence of taxation, and price of labour. The cost of production is probably considerably greater here. Again, the system of *petite culture* which obtains so generally in Belgium admits of a more thorough cultivation and a closer supervision than do our methods. Be this as it may, the Belgians are looking to market gardening and to fruit culture to palliate the depressed condition of their agriculture, for unfortunately we have no monopoly of distressed agriculturists. More than this, our friends have cast their eyes across the border, and taken note of the tons of vegetables and fruit which find their way into Covent Garden from France, from Germany, from Holland, and from far-off America. Why should not the Belgians have a share in supplying the large demands of their neighbours? At any rate they mean to try, and our market gardeners may have shortly to compete with yet another host of produce-raisers. The Belgian Minister of Agriculture has, we learn, instructed an official in his department to proceed to London to examine the resources which the London markets offer for the importation of Belgian vegetables. The official in question will have to take account of railway and steamboat charges, of times and seasons and gluts in the market. It is of no use sending us inferior produce, it is of no avail to send even the best when the market is overstocked. Frequently it happens that, from over-supply or lack of demand, the English market gardener makes no profit at all on what he sends to market. The Belgian growers will no doubt appoint an agent to watch these matters, and the telegraph will be called into play to give timely notice, so far as it can be done, of what it will pay to send, and when.

It is instructive to see how our colleagues across the Channel set to work. *Imprimis*, there is a Minister of Agriculture; in the United States there is an Agricultural Department, which in either case watches over the interests of the cultivator, and put him in possession, not only of fiscal and financial information, but of methods of cultivation, of new products, insect and fungus enemies, and the means of evading or counteracting them. Here we have our Board of Trade, which collects elaborate statistics, but these, and the legitimate deductions from them, never find their way to the rank and file of the producers; they are not brought home to the working farmer or gardener, as they are in other countries. Even if they were presented to the cultivator, only a small proportion would be qualified by education and training to understand them and turn them to practical account. To provide for this our neighbours have Schools of Horticulture and Agriculture, the like of which do not exist in this country (for our two or three Agricultural Colleges are intended for a higher class of students than we are speaking of, and even of them there are but two or three against 100 in little Denmark, and 158 in Germany!) Not only have our neighbours training schools, but they have an admirable system by which men trained in these institutions and proved to be competent to teach the theory and practice of cultivation visit at regular intervals the different parts of the country, and give demonstrations and practical instruction as well as theoretical explanations. Information of the most valuable kind is thus brought to the very door, not only of the farmer and market gardener, but to his very labourers.

Another means by which useful cultural information is diffused is through the agency of books published at a cheap rate, written by men of unquestioned competence, but in a style capable of being understood by the workman. Such a book is before us now, with the title *Traité Elementaire de Culture Maraichère* ("Elementary Treatise on Market Gardening"). This is drawn up by M. BURVENICH, one of the Professors of the State School of Horticulture, and who for fourteen years was charged with the duty of visiting the country districts in Eastern Flanders and the Duchy of Limbourg with a view of instructing the cultivators by means of lectures and practical demonstrations. This treatise has been honoured by the award of a gold medal, and is indeed a remarkably concise, simple, and trustworthy guide. Teaching, whether oral or by means of books, is singularly facilitated by the local schools and village museums, which we are told contain samples of soils, manures, seeds, models, plans, and the like, arranged for practical purposes. Those who penetrated into the Educational Department of the late Health Exhibition must have seen for themselves how admirable were the arrangements in the village schools of France and Belgium for this purpose, while the huge model of the School of Horticulture at Vilvorde, to which we alluded at the time, will have shown how extensive and complete are the arrangements at headquarters.

There cannot be the slightest doubt that all this will tell, and our vaunted superiority will, if we do not take care, be a thing of the past. Instead of crying out against foreign competition, which is not only inevitable, but a great boon to the general body of consumers, let us in our turn study the methods by which our neighbours are able to supplant us in our own markets. There is room for all, but there is no reason why our own growers should not avail themselves of the advantages they possess of being on the spot, advantages of which no foreign rival can deprive them.

—— THE ROYAL SOCIETY.—At the anniversary meeting of the Royal Society on Monday last one of the Royal medals was presented to Professor OLIVER in recognition of his services to systematic botany and morphology, services continuously and unostentatiously rendered for many years, and by which the publication of the *Genera Plantarum* was so greatly facilitated, that without them it would not have been possible to have brought it to a conclusion. An award of like character was made to Mr. GEORGE DARWIN, one of the sons of the late CHARLES DARWIN, for his remarkable researches in mathematical astronomy.

—— THE ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.—The following are the dates upon which the exhibitions will be held next year:—March 17 and 18, April 28; National Horticultural Show opens May 22; Rose Show, July 11; Chrysanthemum Show, November 17 and 18.

—— EXHIBITIONS FOR THE YEAR 1885.—We should be glad, as early as possible, to receive from secretaries and managers of provincial horticultural societies and associations the dates and designations of the shows purposed to be held by them during the next year, when we would give them publicity in several ways.

—— FORESTRY.—Dr. J. CROMBIE BROWN'S labours are unceasing. Scarcely have we had occasion to notice the publication of one work relating to Forestry than we are confronted with the duty of calling attention to two others, namely, *Forestry in the Mining Districts of the Ural Mountains*, and *Forests and Forestry in Northern Russia* (Oliver & Boyd). Like Dr. BROWN'S former works these are partly based upon personal observations, partly upon information derived from the most trustworthy sources. The works in question are agreeably written, but bear marks of hasty preparation; doubtless consequent on the necessity of publishing them in connection with the recent Forestry Exhibition in Edinburgh; nevertheless, those who are desirous of obtaining information upon the subjects treated of will be grateful to Dr. BROWN for having put before them in so pleasant a form such a mass of otherwise not readily accessible matter. In view of the attempts now being made to establish one or more forest schools in this country Dr. BROWN'S books have special significance, and will, we doubt not, be influential in promoting an object he has much at heart.

—— COVENT GARDEN SALESMEN.—The notice in our last issue has brought us further complaints. One writer says that he has no words to express his indignation at the way in which the vendor is treated by the salesman, and at the way in which our advertising columns are made use of to the prejudice of the vendor. It is only fair to say that the consignor is usually ignorant of the conditions under which alone produce can be sold in the market. If there be no demand for a particular class of goods on a particular day, or if the goods arrive too late, or be of inferior quality, or badly packed, the dealer often cannot dispose of them at any price. The fact that the business is a speculation should be realised by the consignor. At any rate, it is desirable to call attention to the matter, with the view, if possible, of finding some remedy for a state of things which is becoming intolerable. We can exercise but little control over statements made in our advertising columns, but if an indisputable case of dishonesty could be brought before us our publisher would, of course, refuse to insert the advertisement of the inculpated person; but no action can be taken upon *ex parte* statements incapable of verification in detail.

—— THE JAPANESE HOP.—A specimen of this was exhibited by M. MAX CORNU before the National and Central Horticultural Society of France recently. It was raised from seeds sent by M. BRETSCHNEIDER. According to the report it is an annual species of rapid growth, so rapid, in fact, that it forms in one year tufts of upwards of 23 feet in height (7 metres). Moreover, the lower leaves do not fall off as in the common Hop. For covering purposes this Hop should be valuable. Nothing is said about the bitter aromatic properties of this species, which probably are the same as those of the common Hop.

—— LECTURES ON AGRICULTURAL SCIENCE.—Under this title has been published a series of lectures on various subjects delivered before the Institute of Agriculture at South Kensington. The subjects comprise among others "The Adulteration of Seeds," by Mr. CARRUTHERS; "Bees and Fruit Production," by Mr. CHESHIRE; "Natural and Artificial Grasses," by Mr. BUCKMAN; "The Nature of Farm Crops," by Professor FREAM; "Nitrogenous Matters in the Soil," by Mr. WARINGTON; "Germination," by Mr.

Bettany; "The Mildew of Corn," by Mr. Worthington Smith; and other matters.

—— Cyclamens: Then and Now.—An old cultivator of Cyclamens said, a few days since, that forty years ago a collection of six or eight plants of Cyclamen persicum was thought to be a very good one, and if they yielded a few flowers in March and April the cultivator was considered to be fortunate and clever. When they had gone out of flower the bulbs were placed on the highest shelf in the greenhouse, near the glass, and there literally roasted, in the full belief that this was the best means of ensuring flowers the following season. In reply to a question he said that in those days they had no knowledge of Cyclamens seeding, and that what propagation was attempted—and it was always hazardous—consisted of dividing the roots. The Cyclamen was further looked upon as a plant very shy of flowering, and the drying process was believed to increase the head of bloom. How different it all is in these days. When looking through Messrs. Sutton & Sons' Portland Road Nursery, near Reading, a few days since, we saw sowing of the present season's crop of seed in full operation—rather deep boat-bottomed seed-pans being used for the purpose, and all the crosses kept separate. In another house was a set of plants in 32-pots, raised from seed sown at the corresponding period last year, not a few of them nearly 2 feet across, having large and finely marked leaves, and carrying wonderful heads of bloom. The strain was that known as giganteum. Let no one say in the future that the varieties of the large-flowered section are less free of bloom than the small-flowered; here the former, bearing flowers, too, of superb quality, were as free of bloom as could well be desired. Some of the plants began to flower in August, but it must be borne in mind that the past summer was of such a character as to hurry on things in the way of Cyclamens at an unusually rapid rate. Talk of foliage plants! Here could be seen leaves of great size, finely rounded, and so handsomely marked with grey on green grounds as to eclipse in beauty not a few foliaged plants. Messrs. Sutton & Sons, while breeding for increased size and beauty in the flower, have by no means been unmindful of beauty in foliage, and in their efforts to increase this they have succeeded in a remarkable degree. A white variety is appropriately named Butterfly. The blossoms, after becoming fully expanded, flatten down so that the petals are spread out in a horizontal manner, and appear like a cluster of white butterflies that have alighted on a level surface of leaves.



Fig. 127.—One of twelve in a "truss" of a new Rhododendron from New Guinea: flowers white. (see p. 713.)

—— A New Bedding Begonia.—Such is the best designation that can be given to a singularly dwarf and free-flowering Begonia now to be seen in flower at Messrs. Sutton & Sons' London Road Nursery at Reading. It was obtained from a cross between three—B. semperflorens, Snowflake, and one named Schmidtii, sent out by Messrs. Haage & Schmidt, of Erfurt. It was bedded out last year, and found to answer admirably; it was very dwarf and wonderfully free, and in the open ground the flowers were white. Under glass at this season of the year the flowers have a pink hue, and quite small plants are laden with flowers. Indeed it may be termed a perpetual bloomer, and it is as valuable for winter flowering as for summer bedding. It does not seed, and therefore has to be propagated by cuttings. The foliage is somewhat intermediate between the two, the margins of the leaves are hairy: in this respect it partakes of the character of the German parent. It is a most interesting and useful hybrid, and illustrates once more the interminable development apparently possible with hybrid Begonias.

—— Testudinaria sylvatica.—Two species only of these remarkably curious members of the Yam family are known to science. Both are natives of South Africa, and what was supposed to be another species from Mexico, and grown at Kew many years ago, is probably nothing more than the old T. elephantipes that had been introduced to cultivation in Mexico. A male plant of T. sylvatica is flowering freely in the dry atmosphere of the Succulent-house at Kew. The small greenish-yellow flowers are borne in dense axillary racemes, and if not particularly striking, are agreeably fragrant. They differ in no way structurally from those of Dioscorea except in the

seeds, which are winged at the top only. The most important distinction, however, lies in the rootstock, which is wholly developed above-ground. This remarkably woody-looking structure is protected with a dense mass of corky tissue, the successive accumulation of many years. It has the property of splitting very deeply into square pieces, presenting a singular appearance, and might be regarded as dead were it not for the slender, twining stems springing from the top.

—— RIPENING-OFF GLADIOLUS BULBS.—The summer just closed proved so favourable to the continuity of growth in many plants, and among them the Gladiolus, that they have ripened off very slowly indeed, and there did seem the probability that, if the bulbs were left in the ground, there would be no decay of foliage until a second growth had almost commenced. One grower hit upon the expedient of carefully lifting his Gladiolus, and as the nurserymen say "laying them in by the heels," treading the soil somewhat firmly about them. The result is, the corms are ripening off nicely, and they will soon be fit for storing away.

—— NATIONAL CHRYSANTHEMUM SOCIETY.—The annual dinner of this Society was held on Tuesday, Nov. 2, at the "Old Four Swans," Bishopsgate, E. SANDERSON, Esq., the President of the Society, in the chair, and about seventy members being present. Several very interesting facts were elicited in the course of the various speeches, amongst them the Secretary stated that no fewer than 3734 blooms were entered for competition at the late show at the Royal Aquarium, that the number of members during the past twelve months had increased from 143 to 257 at the present time, and that no less a sum than £199 1*s.* had been paid in prizes to the successful exhibitors on this evening. Special reference was also made to the important work of the Floral Committee during the late Chrysanthemum season, and it was also stated that the next and last meeting of this committee for this year would be held at the "Old Four Swans," 84, Bishopsgate Street, on Thursday evening, December 11, at 7 o'clock precisely.

—— BENNETT'S SAFETY LIGATURE.—This useful little contrivance for fastening fruit trees, standard Roses, and young trees generally to stakes of wood or iron consists of short lengths of indiarubber tubing as thick as an ordinary clay pipe stem, a small hole longitudinally placed enables a piece of copper wire to be drawn through it. When four or five of these are strung together on a piece of wire a soft yielding tie is formed that prevents abrasion of the bark, and permits the stem to grow in diameter without constricting the bark. It is simple in application, and will be useful for amateurs.

—— CONSERVATORY DECORATION.—This is one of many subjects that is a constant source of thought to gardeners, and is rendered more difficult from the unsuitability of certain conservatories to plants that do well in others, the different tastes of employers, and various other matters that all have to be surmounted. Then there are the various seasons of the year to be considered, as one may have to keep the conservatory gay at very difficult times; all these points have to receive much consideration to ensure success. Without doubt there are plenty of plants to choose from nowadays, the point at issue is which are the most suitable for the structure to be decorated, the easiest to manage, and lastly, but by no means the least, the most inexpensive. The period from now till the early spring is a time that is looked upon by many as one of the worst in which to keep up a supply of flowers, for after Chrysanthemums go off there are no very striking decorative plants till the Azaleas come on; of course A. amœna, the old semi-double white indica alba, and a few more varieties can be forced on till the bulk come in, and where one has a good selection of Chrysanthemums, and a nice batch of Azaleas, with a few large Palms, Tree Ferns, &c., the larger portions of the house can be easily managed; for to furnish these and decorate the side stages (if there are any) we know of no class of plants more suitable and showy than zonal Pelargoniums, which will succeed and give an abundance of bloom all through the winter months if properly managed. What they most require is protection from damp. Drip is very detrimental, and must be guarded against by a nice circulation of heat and plentiful ventilation at all suitable times, watering during the middle of the day, and carefully mopping up all water spilt on the floor. By attention to these points, and by having good plants to start with, they will flower profusely all through the winter months. To associate with these, the various decorative Begonias, double and single Primulas, Bouvardias, &c., small Ferns, Acacia lophantha, Cyperus alternifolius, Callas, and a host of other things that help to give a feathery look to the arrangement. Then forced Dutch bulbs will soon come in, and Spiræa japonica and palmata, Lily of the Valley, Deutzia gracilis, &c. A selection like this will keep up an abundance of bloom till spring things come in, when more variety can be easily had. Most of the class above mentioned will do very well for cut blooms for epergnes, table-glasses, &c., although, of course, more choice things can be had from the stoves and other houses for them.

—— CHRYSANTHEMUMS AT BEECHWOOD PARK, HERTS.—Through the kindness of W. B. GREENFIELD, Esq., the grounds here were thrown open to the public on the 17th, 19th, and 21st ult., where in the early vineries and Peach-houses, 300 feet in length, were to be seen a fine collection of this beautiful autumn flower. Several hundreds of people from the immediate neighbourhood and the surrounding towns of Luton, Dunstable, and Hemel Hempstead, availed themselves of the rare opportunity of viewing so fine a display, and were much gratified. The standard plants were highly approved of, and the arrangements generally very pretty; in fact, we have not seen anything of a like nature which could surpass it. Most of the plants carried a good average number of fair-sized flowers, the largest measuring 6 inches in diameter. The most conspicuous varieties were Soleil Levant, Triomphe de la Rue du Châtelet, Golden Queen, Flambeau, Comte de Germiny, Bouquet Fait, Thunberg, Mons. Lemoine, Mons. Clement Andiguier, the White and Golden Empress of India, &c. Another interesting feature to visitors was a miscellaneous collection of Orchids, stove plants, and Ferns. These were very bright and attractive. Residents in this locality have to thank Mr. GREENFIELD and his respected gardener, Mr. FREEMAN, for a great treat.

—— THE CATALOGUE OF THE NATIONAL CHRYSANTHEMUM SOCIETY.—A correspondent who is a grower of Chrysanthemums has drawn our attention to errors to be found in this list. With the exception of a little mis-spelling of names, chiefly French, which is pardonable, for they are extremely ill-suited for English readers, we find the sins are those of omission, the descriptive part of the text being excessively meagre, and in so far misleading, and not so full of "light" as those not well acquainted with the flower have perhaps the right to look for in a list issued by the above-named Society. Our correspondent also complains that subscribers of 5*s.* to the funds of the Society are obliged to pay for their catalogue.

—— STRAWBERRIES AND VINES IN THE SAME HOUSE.—The fourth edition of M. VAN HULLE'S useful treatise on this subject has been recently published in French (Ghent, HOSTE). It is an able and clearly-written treatise on Vine culture, and is partly devoted to a plan for forcing Strawberries in the same house as that in which the Vines are grown. For this purpose the Vines are planted in an outside border and the stems passed through long narrow apertures in the wall of sufficient size to allow of the stem being inserted and withdrawn at pleasure. The Strawberries are placed inside the house, and forcing begins in January, the Vines being at this time outside. After some six or seven weeks, when the Vines could no longer prove prejudicial to the Strawberries, the stems are pushed through the holes in the wall into the interior of the house. By the time the leaves are expanded the Strawberries are ripe, and on their removal the house is left free for the Vines, which ripen their bunches in due season, and remain in the house till it is time to begin forcing the Strawberries again.

—— AMERICAN APPLES.—The little province of Nova Scotia is, in a most unpretending manner, gaining a good name for itself in our English market as sending us some of the finest productions of the Canadian Dominion. Last season we noted the importation of the new Burbank Potato, and this year the importation of Apples from Nova Scotia is attracting some attention. We have received a sample of the Gravenstein Apple, which is just now being imported by Messrs. NORTHARD & LOWE, and of which over 2000 barrels have been sold this season. This is one of the finest Apples, either for dessert or cooking, that we have seen for some years, and the Nova Scotians are certainly to be congratulated on growing such an excellent variety for their earliest kind. The fruit is large, handsome, Peach-like in colour, mellow to the palate, and just sweet enough to bring out a rich flavour. Next to these Apples will come consignments of later varieties, these consisting of Ribston Pippins, Blenheim Pippins, King of Tompkins' County, and Baldwins. The fact is one that ought to set us thinking. While we are suffering from depression in our own agriculture, and while we hardly know where to turn for help, here is an island in British North America not only sending us the best Apples on the London market, but also beating the United States, with its great diversity of climate and with such States as the sunland Florida and the luscious California. The secret of the success is to grow none but the best kinds, and this we may take it will be in the near future the surest possible way to success in any department of the world's agriculture. But surely one would think that such varieties of Apples as the Gravenstein ought to be produced in sufficient quantity in our own country. It is true that the law which allows the tenant to lose his property in a fruit tree the moment that its roots are placed in another man's soil acts against the planting of orchards and fruit grounds, but still one would imagine that we ought to have been able to have produced such an Apple in quite sufficient quantities. But this year and last year the agricultural returns show a very good increase in orchards, but after all the fact remains, that during years of severe depression a small colony has established a very important little trade in agricultural produce.

—— FLORAL COLOURS.—We have much sympathy with "F." in the apparent perplexity in which he seems to be placed with respect to the nomenclature or identification of colours in flowers. Most original species have flowers so far of decided hues that there exists no great difficulty in defining them pretty fairly. With florists' flowers, however, the difficulty found in correctly defining what are the true colours of many of them is excessive, and, indeed, hardly two persons can be got to agree as to what those hues really are. That even experienced floral artists are often at fault is evident when we see the numerous failures to transfer to paper the exact hues of some brilliantly coloured flower, and as to which in selecting his paints the artist presently finds he has made a patent mistake. One of the great features of many new flowers is found in the tendency to embody in them some two or three hues, or what is called shaded colours. This mixing up by Nature in its production of flowers of the primary hues is very puzzling, and in a vast number of cases we have to describe some flower as crimson, shaded with rose, or maroon, shaded purple, or rosy-carmine, and many other combination phrases, that after all fail to convey what is meant. Why, we have even in yellows from sulphur or primrose to deep orange—an infinitude of shades, which baffle the most expert correctly to describe, and such indefinable terms as clear yellow, bright yellow, rich yellow, and so on, have to do duty, although even these, if satisfying the describer, yet leave the public little the wiser. As "F." has shown, even such common colours as lilac and purple are commonly misapplied. We have always thought that lilac expressed both the name of a flowering shrub and the hue of its flowers, for lilac as a colour usually means a very pale red, but which is yet too dark for pink. The Foxglove of the woods might well be described as a reddish-lilac, but it is a long way from being purple, and the term purpurea as applied to the colour of its flowers would indicate that either the earlier botanists were indifferently acquainted with colours, or else since that day development in the elements of colours has vastly progressed. The gradations of colour, from a pure white ground towards intensity are numerous, and very interesting. Thus we see a faint flush of scarlet or vermillion on a white ground is termed blush, a little more body makes it flesh, a little more pink, a little more still is carmine, and then carmine with a dash of violet in it gives us the lovely hue of rose; whilst scarlet seems the carmine brightening into vermilion, and scarlet becomes crimson when it is deepened with

maroon, whilst it seems to be purple when deeply flushed with blue. Single Dahlias very strongly illustrate the curious mixing found in floral colours, but perhaps these are even more strikingly found in zonal Pelargoniums, as any one may see, especially at this time of the year, by looking in at Swanley and inspecting Mr. CANNELL's rich and varied collection. A few primary hues flung together in various degrees and mixtures seem capable of giving us as much diversity as does the octave of musical tones, or the letters of the alphabet; indeed, colours are endless in variety, and capacity to correctly appreciate them seems almost as diverse also. We fear it is not of much use to attempt to set up any standard authority for the description of floral colours, for after all men will term them according to their own ideas and conceptions.

—— ONCIDIUM PHALÆNOPSIS.—This plant is now being offered in quantities by Orchid importers and others, and therefore may be obtained much cheaper than was possible hitherto. It is a very prettily marked variety of O. cucullatum, of which there are several well marked forms now in cultivation. Of these the varieties nubigenum, Chestertoni, and majus are, in addition to the above, distinct and pretty little Orchids. O. Phalænopsis has pseudobulbs as large as a Peach-stone, leaves about 5 inches long, and a 6-inch scape of flowers about an inch in diameter, and consisting very largely of labellum. This labellum is white, with purplish blotches scattered over it. A pretty little Oncidium for cultivation in the cool Orchid-house, liking plenty of water always.

—— WEATHER ASPECTS. — In spite of local showers the past month of November has been relatively so dry that now feelings almost of alarm are created lest the drought of the year should be continued through the winter and run on even into another summer. There can be no doubt whatever that the phases of the weather are of a kind that baffle the anticipations of the most weather-wise. That a thoroughly wet autumn was looked for generally after such a wondrously long spell of drought there could be no doubt; and specially was it anticipated that November, the customary month of storms and floods, would have brought to the droughty soil some equipoise. But matters get worse rather than better, for exhaustion of subterranean moisture still goes on, and it seems to be in no way recouped. Ditches are unusually dry —probably were never drier in November than now, and the water, so far from being within easy reach of the surface of the soil, as it most commonly is just at this time, is some 16 to 20 feet below it; indeed, only an enormous rainfall can make good what is lacking. How planting is hindered our nurserymen can tell too well, and how little labour there is to be found on the land our field and garden labourers can tell. Happily, hedging and ditching may be done where a love of tidiness—not too abundant a virtue —prevails, but all other kind of labour is very slack, so that with one of the finest and most open seasons on record we still see the unwonted spectacle of labour being unusually restricted. The continued general lack of rain may well cause anxiety, though, happily, so far, the want of it is not balanced by severe cold and frosts. The prognostics of a hard winter have not been so far borne out. A wet winter would of the two be the lesser evil.

—— NEW CHRYSANTHEMUM.—We have received from J. LAING & Co., Forest Hill, S.E., specimens of a new pompon Chrysanthemum, named Val d'Or, which we doubt not will prove an acquisition on account of its distinctness and vivid colour, which is very bright orange; the flowers, though not large, are symmetrically shaped, and produced in great abundance.

—— MASDEVALLIA VELIFERA.—If for no other reason this plant may be considered interesting because of its most repulsive odour, strong and repulsive as that of the Stapelias. It belongs to the large, rather coarse-flowered group of Masdevallias, of which M. coriacea, M. elephanticeps, and M. Peristeria are examples; in fact, it does not appear to differ at all from the second of these except in colour and in the odour it possesses. The sepals are united by their lower edges, so as to form a sort of hood, afterwards tapering off into longish tails. On first expanding they are almost green, but as they get older they grow yellowish, never, however, becoming clear or anything other than a muddy greenish yellow, the tails only being clear yellow. A blotch of brown marks the inside of the lower sepals where they are united. There is a plant of this remarkable Masdevallia now in flower at Kew.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are glad to see that a practice that we have often advocated, that of placing collecting boxes at Flower Shows, was adopted with such success at the Highgate Chrysanthemum Show that six guineas were collected, and an additional sum of one guinea was contributed by the *employés* at the Highgate Nurseries of Messrs. W. CUTBUSH & SON. The proceeds of a Chrysanthemum show at Cuckfield, held on the 20th ult., are to be devoted to the same object.

—— SENECIO PULCHER.—This striking species is now in fine form at the gardens of the Royal Horticultural Society at Chiswick. Some plants that were kept in pots in a cold frame during the summer having commenced to throw up their flowering stems, they were repotted and placed in the house where the Chrysanthemums are blooming. They have developed very stout flower-stalks surmounted with flowers of very large size and finely coloured. The peculiar hue of rich bright pale purple is extremely pleasing, and in marked contrast with the prevailing hues of the Chrysanthemums. This may supply a "wrinkle" as to how to treat this fine plant so as to have it in fine bloom at this season of the year.

—— THE WEATHER.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Dec. 1, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather was generally fine at the commencement of the period, but afterwards became very changeable, with showers of cold rain, sleet, or snow. The temperature has been subject to considerable oscillations, and at times has varied greatly in different parts of the kingdom. On the whole, however, it has been decidedly below the mean in all districts, the deficit varying from 1° or 2° over "Ireland," "England, S.W.," and the "Channel Islands," to 4° over central, southern, north-western England, and 5° in "England, E." and "Scotland, N." The maxima, which were recorded at most stations on Nov. 27, ranged from 55° in "Ireland, S." to 47° in "England, E." In several places during the latter part of the period the daily maxima were unusually low, thus during Sunday the highest reading at Aberdeen was only 22°. The minima, which were registered on different days in the various localities, were generally very low. In the north and east of Scotland the thermometer fell to 14° or 15° in "England, N.E.," to 19°, and in most other districts to between 21° and 24°. In the "Channel Islands," however, the lowest reading was 37°. The rainfall has been more than the mean in "Scotland, N.," "Scotland, E.," "England, N.W.," and "Ireland, N.," but about equal to, or a little less than its normal value elsewhere. Bright sunshine shows a decrease in duration in nearly all districts, the percentages of the possible number of hours varying from 25 in the "Channel Islands" to 7 in "Ireland, N." Depressions observed:—At the commencement of the week the eastern edge of an anti-cyclone lay over our western coasts, and the lowest pressures over Scandinavia, the winds consequently being moderate from the northward or north-westward. On the 27th, however, the high pressure area moved southwards, and depressions began to appear in our neighbourhood. The first of these, subsidiary to a larger cyclonic system over the north of Scandinavia, travelled south-eastwards over the north of Scotland and the North Sea on the 27th, and disappeared over North Germany on the 28th. By the following day a shallow disturbance had apparently been formed over the Netherlands, while during November 30 and December 1 an irregularly shaped depression moved south-south-eastwards over Ireland and England, finally dispersing over our south-eastern counties. Moderate to fresh north-westerly and northerly winds continued general till the 30th, when the wind in the east and north shifted to the southward or south-eastward. At the end of the period strong southerly breezes had set in on our western and north-western coasts, with a falling barometer.

—— GARDENING APPOINTMENTS.—Mr. D. J. SMITH, late Gardener at Stourton Castle, Stourbridge, as Gardener to NORRIS RUSSELL, Esq., Plassey, Limerick, Ireland.—Mr. T. GRASSING, late General Foreman at Rolleston Hall, has been appointed Head Gardener to T. PORTER, Esq., Erleigh, Whiteknights, Reading.

THE CULTIVATION OF THE POTATO.

THE subjoined correspondence respecting the interesting experiments carried out in the Reading nurseries of Messrs. Sutton & Sons on hybridising different species of Solanum with a view of rendering the edible Potato better adapted to our usually dripping English climate is taken from a recent issue of the *Times*. The first is a letter from Mr. A. Sutton to the Editor of that journal, and the latter a communication to Earl Cathcart:—

"Lord Cathcart has suggested to me that you would probably consider the facts mentioned in the enclosed letter of such general interest as to be worthy of notice in the *Times*.

"I will only trespass upon your space to explain that the experiments which have been carried on during the past summer at Lord Cathcart's request have had for their object the attempt (by cross-fertilisation with distinct and hitherto uncultivated species of Solanum) to infuse fresh blood into the Solanum tuberosum, the species to which all the varieties of Potatos at present in cultivation belong.

"The success which has thus far attended this operation in the case of Solanum Maglia encourages the hope that an entirely new race of Potatos may result which shall be free from the attacks of the Peronospora infestans, from which the Potato crops of the country have suffered so greatly during recent years.

"Solanum Maglia was discovered by Darwin in the Chonos Archipelago, 44° to 46° south latitude, and is remarkable as choosing for its habitat low-lying marshy places, near the coast; whereas S. tuberosum, from which the cultivated Potato springs, is a native of the higher Andes, where rain is almost unknown.

"In view of this fact, and that in a wet summer and autumn the Potato disease is invariably much more virulent, while in a dry season like the past its ravages are reduced to a minimum, it has been thought that the constitutional aversion of S. tuberosum to humidity has probably induced its susceptibility to disease. On the other hand, it is hoped that the preference shown by S. Maglia for a damp soil and moist climate, may lead to its being a parent of a new race of Potatos far more suitable for the climate of the British Isles.

"With this object Lord Cathcart forwarded me some tubers of S. Maglia and another species called S. Jamesii, in March, and the enclosed is a report to his lordship of the first season's work.

"Those who are interested in this question should read the two exhaustive papers which have recently appeared, one by Lord Cathcart, on 'The Cultivated Potato,' in the *Journal of the Royal Agricultural Society* (vol. xx., part i.), the other by Mr. J. G. Baker, F.R.S., Curator of Kew, read by him before the Linnean Society, and since published under the title 'A Review of the Tuber-bearing Species of Solanum.' *Arthur W. Sutton, Reading.*"

"My Lord,—It gives me much pleasure to report to your lordship the results obtained by the cultivating and fertilising the varieties of Solanum which your lordship forwarded to me in March.

"Of the two varieties—namely, S. Maglia and S. Jamesii—there were respectively sixty-one and eight tubers. The former, S. Maglia, were divided at the time of planting into two sections—viz., section (*a*), consisting of tubers having a pale coloured skin; and section (*b*), tubers distinctly red in colour. The S. Jamesii showed no variation whatever in colour.

"Knowing that Potato sets frequently fail to start if unfavourable weather follows immediately upon the planting, and being very anxious to obtain the most complete results possible, the tubers were planted in pots under glass as soon as received, and we were thus able to transfer to a carefully-selected plot in the open ground the first week in June three plants of S. Jamesii and forty plants of S. Maglia, sections (*a*) and (*b*).

"Notwithstanding the pains we took we found it impossible to induce more than three tubers of S. Jamesii to start, the remainder of the sets rotting in the soil, possibly owing to their having been lifted before quite ripe, or having been stored under unfavourable conditions during the winter, *i.e.*, before they came into our possession.

"I may here mention that in addition to the S. Maglia and S. Jamesii received from your lordship I obtained from M. Blanchard of Brest, a few tubers of S. Ohrondii (synonymous with S. Commersoni). These we treated in precisely the same manner as the others, and two plants were put out by the side of the S. Maglia and S. Jamesii on the same date.

"No difference could be seen in the two sections of S. Maglia, the foliage, flowers, and habit of growth being identical, and when a portion of the crop was lifted about September 5 the produce of section (*a*) was not in any way distinguishable from that of (*b*), the majority of

tubers in each case being of a deep red colour, but here and there a few pale and almost white, resembling those plants in section (*a*).

"All three species made rapid growth, but S. Jamesii and S. Commersoni showed signs of ripening off about the middle of August, although S. Maglia still continued growing.

"In its general character and habit of growth the S. Maglia might easily have been mistaken for an ordinary variety of S. tuberosum as commonly grown in this country, although there were points in which it differed from any one of the recognised varieties.

"S. Jamesii was totally different in every respect, and to an ordinary observer would not have been considered a Potato at all. The height was only about 8 inches to 10 inches, the leaves excessively small, and the habit of growth not altogether unlike the S. capsicastrum used for table decoration.

"The S. Commersoni somewhat resembled the S. Jamesii, although it was more robust, and in every way more nearly approaching the type of an ordinary Potato plant. This also ripened off about the middle of August. Both S. Jamesii and S. Commersoni we could easily recognise from the description and plates in Mr. Baker's paper read before the Linnean Society.

"Each of the three species produced an abundance of flowers, the corolla in each case being white. It is an exception in cultivated forms of the Potato for the corolla to be white, it being generally of a purplish-lilac tint, varying in depth according to the particular variety.

"As the flowers appeared every possible care was taken to fertilise them with pollen from some of our best disease-resisting Potatos, and it is gratifying to be able to report that in the case of S. Maglia we have obtained three fully developed berries well filled with seed. These I hope to sow next year, watching with great interest the development of the seedlings, and noting what practical result has been obtained by thus hybridising the two species. Both S. Jamesii and S. Commersoni resisted every effort at fertilisation, and this we were not surprised at, as there was so great a difference between these species and S. tuberosum, a difference more strongly marked, as before mentioned, in the S. Jamesii.

"On September 5 a portion of the crop was lifted, and it was found that the tubers of S. Jamesii and S. Commersonii had not been materially altered by cultivation either in form or size. S. Commersoni was the least productive, our crop consisting only of five tubers. S. Jamesii, on the other hand, produced in one case as many as forty tubers from a single set, but the tubers were in most cases a little smaller than those planted. In the S. Maglia, however, the effect of cultivation was most marked. The tubers as received from your lordship were about the size of a pigeon's egg, but the produce consisted of tubers quite as large as an ordinary Potato, and as many as eight to twelve tubers to each plant. A few specimens were cooked, and proved to be of fair quality for table.

"I recently called on Mr. Baker at Kew, and he was greatly pleased that our first year's work had been so far successful, as were also Professors Oliver and Mr. Dyer.

"The S. Maglia has not hitherto been known to bear a seed berry, and we may, therefore, attribute the present result entirely to the fact of its impregnation with pollen of the S. tuberosum.

"There is no doubt, after the exhaustive paper contributed by your lordship to the *Journal of the Royal Agricultural Society of England*, and the publicity given to Mr. Baker's lecture, that this is a subject that will command increasing attention, and, with your lordship's permission, I hope to forward to the horticultural Press some account of the progress made.

"Apologising for the length of this letter, I have the honour to be your lordship's most obedient servant,

"*Arthur W. Sutton.*

"The Right Hon. the Earl Cathcart,
Thornton-le-Street, Thirsk."

BOTTOM-HEAT FOR PINE-APPLES AND OTHER PLANTS.

NATURALLY grown in the open air, plants derive the warmth they need for their healthy development from above; for, however enormous the body of fire may be under our feet, it contributes but little that is appreciable in the growth of plants which grow in the surface soil heated by the sun. That being so, are we quite right in applying heat from below? If a Pine pot is turned out the roots are found at the bottom of the ball, attracted there by the warmth, but its best roots ought to be those that spring from the upper part of the collar, these being the younger, the more vigorous, and that consequently supply, or ought to supply, the most nutriment to the plant.

In plants growing in hotbeds of leaves, or of well-prepared tan, having no bottom-heat from pipes or tanks, the roots are not so commonly found near the crocks, but are better distributed through the ball, and consequently benefit by the greater quantity of nutriment that is available for them. The want of roots in the upper part of Pine and other plants leads to a rapid souring of the soil from excess of moisture, there being no roots to take it up, and that state of things leads to the soil eventually getting into a condition distasteful to the roots.

If it were possible, in artificially heated beds of shallow proportions, so to arrange the pipes, by having some rows of smaller diameter than those underneath running but just under the surface plunging material, a state of ground warmth would be attained resembling in a marked degree that which the plants get naturally by sun-heat, and which would, by reason of its more even distribution, lead to better results than our present somewhat unsatisfactory methods. The same would hold good of all large plants when forced for bloom, for if all the rootlets of such things as Lilacs, Azaleas, Rhododendrons, Prunus, &c., were excited equally and at the same time, the effects on the plants would be more rapid, and they would not be required to stay long enough in the forcing-pit to cause growth of shoot, which latter is better obtained, as a rule, at a later period of the year. *M.*

THE SANDRINGHAM APPLE.

THIS Apple (see fig. 128) was one of the very few deemed worthy of a Special Certificate at the Apple Congress of last year, as a very fine culinary variety. It was exhibited as a seedling by Mr. Penny, gr. to H.R.H. the Prince of Wales, at Sandringham, Norfolk. It is described in Mr. Barron's *British Apples*—the report of the Congress in question—as "large, conical, light green, flushed, tender, acid, mid-season, first quality; very handsome." The stock has passed into the hands of Messrs. Veitch, and to those gentlemen we are indebted for the opportunity of figuring a specimen. Those gentlemen speak well of its cropping properties. Mr. Penny would oblige by giving further information as to its cropping properties and other particulars at present unpublished.

ON THE CULTIVATION OF CHRYSANTHEMUMS.

THE present season has been exceptionally favourable to the growth of Chrysanthemums, we have consequently seen many excellent collections produced by both professional growers and amateurs; but there is one error in the cultivation of these beautiful plants into which the inexperienced gardener is apt to fall, and that is, neglecting, or paying but little attention to his plants after the flowering season is past. They are either allowed to remain in a warm greenhouse, and forced into premature growth, or they are thrown aside and neglected until late in the following summer, when he recollects that they are wanted for winter purposes.

Like the greater part of herbaceous plants of this class they are tenacious of life, and easily grown; but if they are to be cultivated well, a regular system of management is necessary. After the flowering season is past, and the old stems cut down, the plants should be removed from the greenhouse or conservatory and placed in a cold frame, when they are merely protected from severe frost. Here they should have plenty of air, and on fine days the lights should be drawn quite off and the plants fully exposed. When the winter is mild they will stand very well unprotected, but owing to their having been grown and excited in the greenhouse they are more apt to suffer from severe weather afterwards than if they had been planted out in the open air; for this reason it is always better to have the means of giving them some slight protection.

We saw some magnificent plants in the present season which had produced flowers last year; the stems had been cut down and the old plants treated as described above. They were taken into the greenhouse this autumn, just as they had been left at the end of the previous season, without any repotting, and then manured once a week with manure-water, made by dissolving a teaspoonful of sulphate ammonia in a gallon of rain-water. The plants were strong, produced beautiful bright green foliage and splendid blooms, equal to any that had been raised from newly planted cuttings taken in June this year. Chrysanthemums are very gross feeding plants, but they will not stand much surface-manuring until the pots are well filled with roots, when they may be watered with liquid manure twice or thrice a week according to circumstances.

Where exposed fully to the sun's rays they require a very abundant supply of water, which ought never to be neglected, otherwise the under-leaves fall off, and the plants become unsightly. Liquid drainings from cattle sheds (diluted with water), sheep droppings dissolved in rain-water, a tea-spoonful of guano, sulphate ammonia, or nitrate of soda dissolved in a gallon of rain-water, or a handful of soot to a gallon of water—any of these will be found of great service for surface watering of Chrysanthemums. The soil employed for the growth of these plants can scarcely be too rich; about equal parts of loam, stable-dung, leaf-mould, and sand, make an excellent material for their culture. *J. J. W.*

HOME CORRESPONDENCE.

The Royal Horticultural Society's Committees.—Briefly put, the following are points worthy of consideration in reference to the future construction and labours of these bodies. In the first place, the whole may exist as one body, with one head and secretary, but with vice-presidents and assistant-secretaries for each division of the committee, but the divisions should not be arbitrary, so that members may choose to sit sometimes in one section, and sometimes in another, just as matters of interest or otherwise came before them; thus we should not see the Floral Committee overdone with work, and the Fruit Committee wasting its valuable time and experience over nothing at all. Occasionally the positions may be reversed. Members could easily arrange on the morning of the meeting which section for that day they would prefer, and the fact that every member was eligible to sit on either section would always enable the secretary to provide an efficient representative when subjects of more than average importance had to be considered. The office of committee-man should be the reward of long and useful service in horticultural work, and in no case whatever should it be bestowed upon personal friends or favourites simply because they were such. A man may be a successful raiser of Roses, or a clever novelist, a learned botanist, or a respectable gardener, but in neither instance does it follow that he is a representative or honoured horticulturist. Were it not for friends at Court he would never have gained a position from which his elevation excludes other and more fitting workers. If the purest motives in selecting the members of the committees do not actuate those with whom the selection rests, then the awards of the committees can never hope to secure complete confidence or respect. It is, perhaps, not sufficiently realised by the Council of the Royal Horticultural Society that its most important work is discharged through the instrumentality of its committees—that, in fact, to the horticultural public the Council is nothing, whilst the committees are everything. Further, the awards of these committees carry with them certain valuable accompaniments, sometimes only of an honorary kind, 'tis true, but as a rule they are of considerable monetary or business value; therefore it is of the first importance that these awards should be made by a body that is not only above suspicion, but which also possesses entire confidence as to its professional capacity. No doubt the selection of new members from year to year must rest with the Council, but there is some reason to fear that private friendships and prejudices to some extent govern these nominations, and that the Council usually accepts them without question. There ought to be on that body enough of high-souled and earnest horticulturists to be able to make their own selection and who would be animated only with the one aim and desire—that is, to place on these committees the very best and most deserving men the profession can furnish. Finally, one-third of the members should retire every year, and thus enable other good members to enjoy the privileges of a position, which should be held as eminently honourable. *A. B. C.* [Why should not the committees themselves, or the horticultural Fellows generally, nominate a certain proportion of the members of committees? ED.]

Potato Scab.—In writing of this (p. 662) my friend Mr. Plowright says the "cause appears to be unknown," but he is "inclined to think it is an effort to form cork to prevent the entrance of fungi." The present year has been one of the most copious for scab that has ever been known. It has been equally notable for an almost total absence of Potato fungi, especially of Peronospora. Whilst, therefore, this year's misguided Potatos have been making as Mr. Turnerelli wrote, "never-to-be-equalled efforts," "to form cork," and so keep out the vile fungi, there have really been no fungi about for them to "cork" out. It

is a remarkable fact that in other years when Potato fungi are very abundant, the Potatos always appear to forget to "form cork," and so get destroyed; they really must have their "eyes" opened a little by some one. Mr. Plowright may possibly be able to refer me to a little picture in some German book of a Potato illustrated positively in the very act of "forming cork" and a fungus detected in the very act of trying to "get in," but pictures cannot be accepted any more than words when they are contrary to every-day observation. The long-continued drought and heat have perhaps had a trifle to do with scab this year, and foreign substances in the soil are thought sometimes to cause it. *W. G. Smith.*

Grape Shanking.—I am glad this subject is being ventilated in your columns. That the cause is not known or understood by many growers is obvious from the fact that shanking is so prevalent in so many vineries throughout the country. To say that it is caused by atmospheric influence, ventilation, or over-cropping, is absurd. All practical gardeners know, or ought to know, that Grapes for their nourishment and full maturity are dependent on the fibrous roots of the canes; the point, therefore, is never to allow these to get either too damp or too dry even when ripening the bunches; also to have borders well drained is most important. Another pernicious practice often followed is to place on borders where Vines are planted outside 3 or 4 feet of dry leaves. The fermentation and heat of these will destroy a considerable lot of the fibrous roots near the surface, and will subsequently prove disastrous to the Grapes. Borders, of course, will require protection, but not heating with leaves as above. *A. Macdonald, The Gardens, Royal Asylum, Cheadle, Manchester.*

Tubular Boilers.—After reading "Thrumpton's" remarks, I really must ask him and your readers to pardon my error in omitting to write, on p. 628, after per day "per house," or in plain figures six houses at 4*d.* per day, per week 14*s.* Now this sum is all I pay to work my houses. Secondly, "Thrumpton" remarks that putting up and pulling down boilers is not experience. I know I have had to buy my experience; being a poor man I could not afford to pay the second time for resetting my boiler, so I set to work to see if I could reduce my expenditure in fuel, and owing to my perseverance I now enjoy the fruit of it in the greater economy and efficiency of my boilers. He says I possess little knowledge of circulation. I made no mention of hot-water pipes. I can only say I never had any trouble with them, after twenty-five years' experience. And lastly "Thrumpton" says that my letter is in no way connected with "Yorkshireman's" question and is irrelevant: yet on p. 598 "Thrumpton" admits "Yorkshireman" asks for information respecting horizontal tubular boilers. And now "Yorkshireman" has heard only two persons, and those two don't agree, and that was my contention in my first letter, that "Yorkshireman" should use his own judgment. I may add that I find my boilers are heating about the same quantity of piping as "Thrumptons," viz., 2300 feet 4 inches. *Amos Groombridge, Plymouth.*

Acorns and Cattle.—The extraordinary abundance of Acorns, to which I recently alluded, has led to a sad and singular fatality amongst cattle in this and adjoining counties. At Savernake Forest, Wilts, a large number have been killed, and at Hursley Park, near Winchester, twenty-four fine cows succumbed to the immoderate eating of the fallen Acorns—the astonishing quantity of 1½ bushel being found in the stomach of one of them. No doubt the abnormal produce of Acorns, to which the cattle are unaccustomed, has led to such fatal results. Another singular circumstance has also occurred in the unprecedented appearance of vast flocks of pigeons, which quite darkened the air as they passed over before settling on the surrounding woods and forests, which they soon cleared of the Acorns. It is wonderful the instinct that directed these birds from afar to such a large and unusual supply of food. *W. H. Rogers, Southampton.*

Hot-water Pipes and Tar.—If the hot-water pipes to which Mr. Bishop refers at p. 692 have been painted with genuine Brunswick black mixed only with oil and turpentine, he need fear no evil, nor would it be possible to remove the same after the pipes had been painted two or three hours, as by that time the paint becomes so thoroughly dry and hard, as to make scraping it off an utter impossibility. I have painted hot-water pipes with it in every kind of fruit and plant house, including Orchid houses and Ferneries, at every season of the year for twenty years, and never had a plant, frond, or flower injured by so doing. There is a slight scent for a day or two after painting, but this scent is very different to that arising from paint containing any portion of coal-tar, a small quantity of which I fear from Mr. Bishop's remarks, must have been introduced into the paint to which he refers. Brunswick black is no doubt prepared to some extent from wood-tar, but it is perfectly safe if used as I have stated. If the paint to which he refers still continues soft he may feel perfectly assured that it contains something more than Brunswick black. Should it be coal-tar it can easily be detected by its peculiar scent, and will become comparatively hard when cold and soften again when heated. To remove coal-tar from hot-water pipes there is no means so safe as burning it off with charcoal in a small brasier—a very slow but, I think, the only certain method without removing the pipes from the houses. I once, through the mistake of a painter, effectually removed paint containing coal-tar from hot-water pipes by the method I have stated, and shall not soon forget the lesson it taught me. *T. S. C.*

Apple Court Pendu Plat at the Southampton Show.—A correspondent in your last issue, p. 693, adverts to the fact that Court Pendu Plat Apple took first honours at the Southampton show on the 6th of last month. Allow me to say, as one of the judges, that Court Pendu Plat, although fairly good specimens, had very little, if anything, to do in assisting in getting first honours beyond making one of three dishes; the superiority of the two dishes shown with it, namely, Cox's Orange and Ribston Pippin, being excellent examples, made up the deficiency, in our opinion, in quality of the former. Court Pendu Plat, although not a telling variety, in a small collections compared with many others, in my opinion does not altogether justify a disqualification. *F. Rutland.*

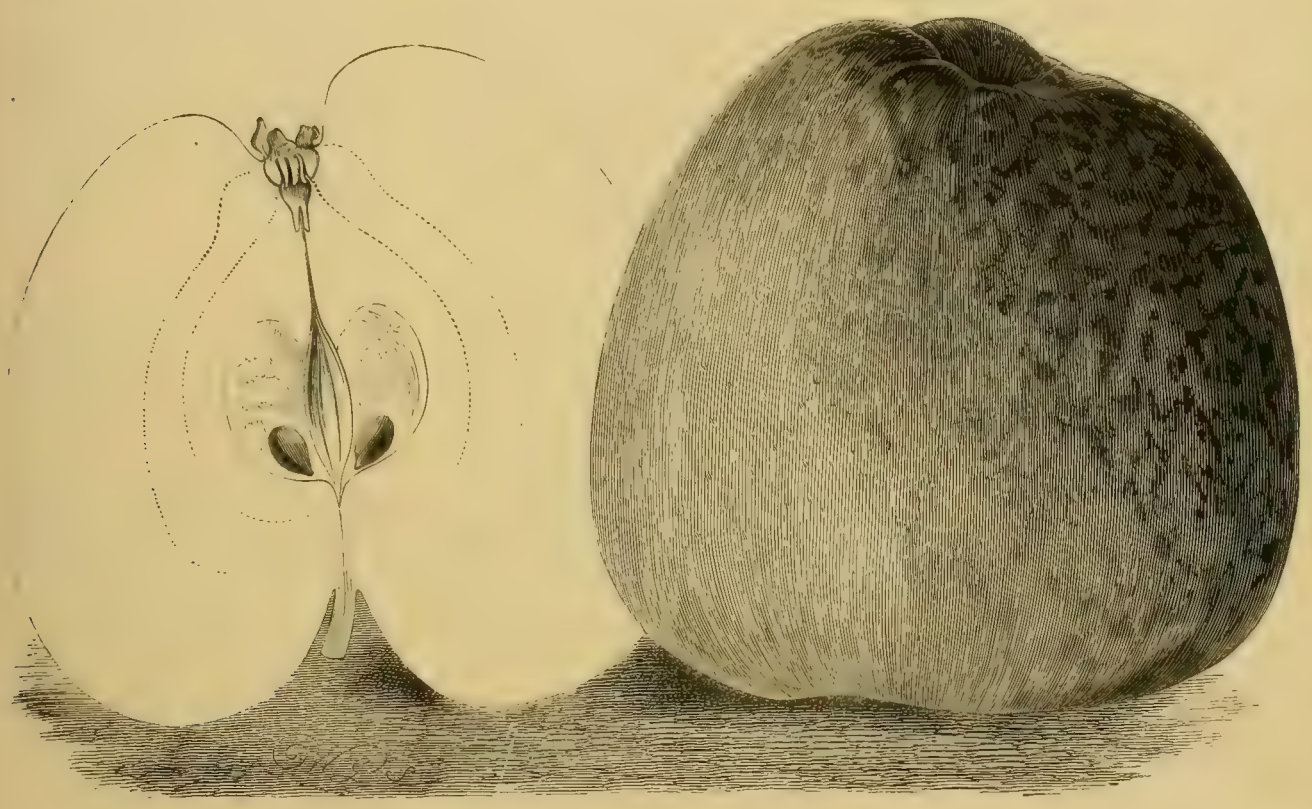


Fig. 128.—The Sandringham Apple. (see p. 724.)

Fumigating Frames.—One of the finest lot, of herbaceous Calceolarias I have ever seen at this season of the year are in a frame at Messrs. Sutton & Sons' nursery, the London Road, Reading. It has been a "rushing season" for these, as for many other things, meaning thereby that the warm dry character of the season operated to bring on plants of this character with unusual swiftness; and so extra care had to be exercised to keep them slowly developing, and at the same time not to give them a check, or affect in any way their hardy, sturdy development. The plants are numerous, of large size, in the very pink of health, and absolutely clean. They are well looked after in the matter of fumigation. At Reading a fumigator is used after the style of Elcome's: it is made of iron, oblong in shape, with a top formed of concave bars, which can be removed at will. It is of local design, and answers admirably. The Calceolarias are in a line of pits, low, and with a span-roof. At each end is a trap-

door; this door is pulled back at both ends, the fumigator is put in at that end where the wind is, and the smoke is carried along to the other end. Then the trap door at the end on the side of the wind is closed; the result is that a current of air passes along in an opposite direction, and so the plants are thoroughly enveloped in smoke. As a matter of course care has to be exercised that the smoke be not allowed to escape by means of the open trap-doors. It used to be thought that a somewhat delicate habit of growth was inevitably associated with high-class quality in Calceolaria flowers. Probably at one time there did appear some valid reason for this statement, but of late years a desirable habit of growth has been developed concurrently with superb blossoms. The plants at Reading are remarkable for their sturdy habit. *R. D.*

A Hint to Young Gardeners.—Now that the long winter nights have fairly set in, young gardeners in remote districts are frequently at a loss as to how to pass their leisure time, many ways are open to make the long nights slip away not only pleasantly but usefully; but we are sorry to think that in the majority of instances, bothies, where mutual or self-improvement is carried on, are the exception not the rule. There are many things that young gardeners should learn, that they may never think of till the time comes when the knowledge is required, and then they are "found wanting." Out of the many subjects that should be worked up, we know of none that is so systematically ignored as the practice of plan drawing. It is astonishing that out of the many well informed young men to be found in bothies, how few there are who can draw a plan, or lay one out. We would urge the practice of this subject during this dull season of the year, and feel confident that all who attempt it will be surprised to find what a vast amount of pleasure and valuable knowledge they will derive from it. *J.*

Cucumber Growing.—Being a grower of these for market, I purpose giving your readers an account of my method. I commenced to cut for market on March 21, and have continued to do so from the same plants to November 12, during which time there have been cut over 11,744 dozen, not counting small ones, which are sold by the peck. To produce this quantity there are nine houses each 85 yards long, and 13 feet span, with no ventilation except the doors at each end, and no shading whatever. We use 2000 plants, which have to be brought on through the winter and when planted out stand at 2½ feet apart in beds 4 feet wide. You will see that the above figures give an average of nearly six dozen to every plant, the weight of the above quantity amounting to 50 tons. There are 150 tons of manure put in the beds of 300 tons of soil, and we commence to cut on March 21 and continue until November, when the pits are all emptied, cleaned, and prepared for another season. I should like to know if any of your numerous readers have cut a greater quantity, as a whole, or the same from individual plants. *W. Longthaw, Pinketh Gardens, Warrington.* [The figures given are astonishing, but we are assured they are correct. ED.]

Winter Protection for Dahlia Roots Outside.—Your correspondent, "R. D.," p. 662, does not seem to think Dahlia roots can be protected in the ground against almost the severest frosts, and so counsels lifting and storing in a dry, cool loft or cellar. This is probably the orthodox system, but is there any occasion to do so? I do not doubt that, including singles, I have 500—others have ten times as many. Lifting, storing, and carefully watching that number during the winter is an important consideration, that most people would forego if there were no risk. I took up the best of the show, fancy, single, and Cactus varieties last year, but left many in the ground protected with coal-ash, tan, and short stable manure. These did much the best, so I am leaving nearly all out this winter so protected. We had several degrees of frost yesterday here; so any who would do likewise must protect in some similar manner at once. *W. J. Murphy, Clonmel.*

Cauliflowers, Autumn Planted.—I see our gardeners always plant these on warm sunny borders, which seems to be quite right; but it cannot be equally so to elevate them on a little plateau some 4 or 6 inches above the alleys, and so permit frost to penetrate more easily to their roots. I shall be told it is done to keep their roots from damage by water lodging about them. How can water lodge in injurious quantities on a sloping border? It would seem that a shallow broad trench of 6 inches or more deep, just wide enough to allow of the handlights standing in it, would better effect the purpose of keeping frost from the plants both at top and root than the raised bed, and it would certainly allow of moulding up and feeding with a top-dressing of dung given in the spring. And in case of frost of unusual severity the handlights could be made more secure with litter, and the wind would have less effect on these sheltered plants than on others not so situated. Raised beds and banks are good in summer time to forward crops of Tomatos, Radishes, saladings, Potatos, Violets, Strawberries, Capsicums by reason of the ease with which the sun's warmth penetrates them, but in winter we have to prevent the ingress of an enemy, and therefore the practice should be different in kind. *Stump.*

Potato Raising at Messrs. Sutton & Sons', Reading.—In your issue of the 15th ult. your correspondent, "A. D.," asks "whether S. Maglia has of its own unaided effort produced seed-apples in this country previously? and also whether it has, or, as a rules, does produce seed in its native habitat? In reply we would mention that we can find no record of S. Maglia having produced seed either in this country or in its native habitat. We may add, moreover, that although the plants we have had under cultivation during the past season were covered with flowers, yet in no case was a seed-apple produced except where the flowers had been impregnated with pollen from S. tuberosum. As your correspondent points out, this fact adds to the interest which attaches to the hybridisation of these two species. *Sutton & Sons.*

The Pruning of Fruit Trees.—The timely and judicious pruning of fruit trees is the most important part of their cultivation, yet it is that part which receives but little attention. When fruit trees have been neglected for some years it takes some time and labour to get them into form again, but when trees have been looked over carefully every season from the time of their being planted they will not require much annual labour to keep them in shape. The principles on which pruning is founded and its general effects are pretty well understood. If the stem and branches of a plant contain a hundred buds, by removing half of these the shoots or fruits produced by the remainder will be supplied with a greater amount of nutriment than if all had remained. On the other hand, when the whole of the buds of a tree are so abundantly supplied as to produce chiefly leaves or shoots without blossoms, then by cutting off a portion of the roots the supply of water is lessened, a moderate degree of vigour is produced, and instead of barren shoots blossom-buds appear. By these methods of pruning—now the roots and then the branches—the growth is controlled and fertility induced. If a fruit tree were not deprived either annually or biennially of a part of the wood or buds which it produces its fruits would gradually diminish in size, and though the fruit might be more plentiful it would lack juiciness and flavour. All fruit trees grown in orchards should be mostly grown in the standard form, this being the natural form they assume, and in which they attain the largest size and produce the greatest quantity of fruit with the minimum of labour. Standard trees require only to be pruned to keep them in shape and to prevent overcrowding of the branches. Pruning is also resorted to for the purpose of adding vigour to feeble trees. Unfortunately, orchard trees receive, as a rule, very little attention in pruning. All cutting away of large branches in healthy trees should be avoided, and this can be done by making it the practice to examine them every season, when the superfluous shoots can be cut out. In orchards where pruning has not been regularly attended to, large limbs will sometimes have to be removed. Where this is necessary, the cut should be slanting, and the wound should be smeared with tar or some composition, or be covered with a cap of lead or zinc, to prevent the entrance of moisture. Tar-covered wounds, if surrounded by healthy bark, rapidly callus over, and are to be preferred to any other, unless the surface is very large. Trees with luxuriant growths, if yielding only worthless sorts, should be headed back and grafted with superior kinds; if too old, remove the trees, and plant better sorts. The autumn is considered to be the best season for pruning, but it may be done at any time during mild weather in winter. *M. Saul, York.*

The Potato Sclerotia, or Plasmodia.—The *Gardeners' Chronicle* of the 22d ult. contains a report of observations made on these bodies by Mr. W. G. Smith and myself at the Scientific Committee of the Royal Horticultural Society. In the discussion Mr. Murray said "he had found similar bodies in perfectly healthy plants." That is exactly what he should have found. All the plants in which they occur are "perfectly healthy" till the parasite begins to germinate. It is then only that the poison is carried out into the tissues by the lines of mycelium, and that disease ensues. The bodies incubate in the healthy tissue, and if circumstances of the season and conditions of the host are favourable to germination they germinate. An egg will lie till it rot if conditions are not favourable to the germination of the chick. The recent season was unfavourable to these parasitic plasmodia, and only some of them germinated here and there. But there were many of them in the leaves last season, though, I think, they were of smaller size than in 1881. *A. Stephen Wilson.*

Clean Leaves in Winter.—When looking through the greenhouse of an enthusiastic amateur gardener a few days ago the freshness and healthy appearance of all the large-leaved plants attracted attention. It was explained on the ground that the leaves of all those plants that are broad enough to admit of its being done are carefully sponged at intervals. Some years ago the hint was borrowed from a successful plant cultivator, and it has been acted upon since with the best results. The water used is slightly tepid, and the work is done on any bright morning when the sun is likely to shine out a little—at least at mid-day, or when the weather is mild. This is a hint that not a few amateurs would do well to act upon. It is not at all unusual to see plants during the winter whose leaves are covered with dust and dirt deposits, and it is observed they will be all the better for a little cleansing. *R. D.*

The Christmas Rose (Helleborus niger).—The Christmas Rose is grown largely and well in the neighbourhood of Bath for church decoration during Christmastide. A few days since we noticed the plant blooming well at Messrs. George Cooling & Son's nursery at Bath. The forcing-house in which it was growing is a very low one, with a bed filled with cocoa-nut fibre along the centre, and in this the clumps are packed closely together. The house being heated, the flowers can be forwarded as required for use. The flowers of the Bath variety, as it is called in Somersetshire, are larger than are usually met with, but whether it is a distinct variety, or that cultivation has anything to do with the size of the bloom, or to the soil and situation, or both, I cannot say, but I am inclined to attribute it to the result of soil and good cultivation combined. *H. W. W.*

Reports of Societies.

The International Forestry Exhibition.—ESSAY AND REPORT AWARDS.—The Executive Committee have now issued their list of awards for the best essays and reports on forestry subjects. It is as follows:—

1. On the Formation and Management of Forest Nurseries.—E. P. C. Brace, Les Vaux-Salbris (Loire et Cher), Gold Medal; Thos. Berwick, 56, North Street, St. Andrews, Silver Medal.

2. On the Formation and Management of Plantations in various Sites, Altitudes, and Exposures.—David Cannon, Les Vaux-Salbris (Loire et Cher), France, Gold Medal; R. E. Hodson, Hollybrooke, Bray, Silver Medal; Donald Stalker, forester, Kilmun, Bronze Medal; D. Tait, Owston Park, Doncaster, Diploma; J. W. Inglis, Myrtle Bank, Trinity, ditto.

3. On the Present and Prospective Sources of the Timber Supplies of Great Britain, with Statistics of the various descriptions of Timber Imported during the past twenty-five years.—Robert Carrick, Gefle, Sweden, Silver Medal; P. L. Simmonds, 35, Queen Victoria Street, London, Bronze Medal.

4. Report, with Specimens, of any Hard Wood likely to supply the place of Box-wood for Wood Engraving.—John R. Jackson, Curator, Museum, Kew, Silver Medal.

5. On the Afforesting of Mountains and other Waste Lands, with details of the method adopted and the results obtained. To be accompanied with Drawings, Photographs, or Models.—Thomas Milne, Glenburnie, Aberdeen, Diploma.

6. On the Effects of Forests on Humidity of Soil and Climate, from personal observations made by the Author in any Country or Locality.—None received.

7. On the Treatment of Coppice and the Utilisation of Branches and Fragments of Forest Produce, with the view of diminishing waste.—G. S. Boulger, 9, Norfolk Terrace, London, Gold Medal; John Fairley, 20, Ward Street, St. Rollox, Glasgow, Bronze Medal.

8. On the Growth and Management of Eucalyptus Plantations, and their Economic Uses.—E. P. C. Brace, Les Vaux-Salbris (Loire et Cher), France, Silver Medal; P. L. Simmonds, 35, Queen Victoria Street, London, Bronze Medal.

9. On the Best Method of Preventing Erosion of River Banks, with Illustrations.—J. W. Inglis, Myrtle Bank, Trinity, Diploma.

10. On the Comparative Advantages of the various Methods of Producing and Harvesting Cinchona Bark, with Specimens.—J. Alexander, Udapussellawa, Ceylon, Bronze Medal.

11. On the Ravages of Tree and Timber-destroying Insects, with Specimens and Illustrations.—J. Alexander, Udapussellawa, Ceylon, Bronze Medal.

12. On the Ravages of Molluscs and other Marine Timber-destroying Animals (excluding Insects).—None received.

12. On the Destructive Influence on Wood of Fungi and other Plants.—None received.

13. On the best Method of Maintaining the Supply of Teak, as regards Price, Size, and Quality, together with the best Substitute for Shipbuilding purposes. Special prize of £50 offered by the Shipbuilders of Glasgow.—W. T. Oldrieve, 1, Stanhope Place, Edinburgh, special prize; J. Nisbet, Deputy Conservator of Forests, British Burmah, Silver Medal; J. C. Kemp, 86, Hill Street, Garnet Hill, Glasgow, Silver Medal.

15. On the Utilisation of Forest Produce in the Manufacture of Paper.—G. F. Green, 3, George Yard, Lombard Street, London, E.C., Silver Medal; P. L. Simmonds, 35, Queen Victoria Street, London, Bronze Medal.

16. On the Culture of Trees on the Margin of Streams and Lochs in Scotland, with a view to the Preservation of the Banks and the Conservation of Fish. Special prize of £10 10s., offered by J. B. Duncan, Esq., W. S.—Rev. E. Maclean, Glen Urquhart, Inverness, half of special prize, £5 5s.

17. On the Preparation and Use of Wood Pulp. Special prize of £20 offered by the Scottish Paper Makers' Association.—E. F. Cross, and E. J. Beavan, Laboratory, 249½, High Holborn, London, special prize of £20; W. J. Stonhill, Ludgate Circus,

London, E.C., Bronze Medal; J. Anderson Reid, Fordband Cottage, Weston, Runcorn, Cheshire, Bronze Medal.

18. The Manufacture and Use of Charcoal.—A. D. Webster, Llandegai, Bangor, N W., Diploma.

19 and 20. Fuel Plantations (two papers). Management of Coffee Soils (one paper)—No award.

21. Forest Products of Malabar.—Rhodes Morgan, Conservator of Forests, Malabar, India, Bronze Medal.

22 Humus and the Defertilisation of Forest Soils in India.—No award.

23. On the Vegetation of Western Australia.—A. Milne Robertson, 1, Alloa Road, Roehampton, London, Diploma.

24. Witnesses of Primæval Times.—Rev. E. Maclean, Glenurquhart, Diploma.

25. Reports on the Forest Productions of our own Crown Colonies or Foreign Countries, accompanied by Specimens.—On the Timber Trade of Kumrup, Assam, by A. J. Mein, Deputy-Conservator of Forests, Assam, Diploma.

26. Lacquer.—By Hikorokuro Yoshida, Japan, Silver Medal.

What is to be done with these essays and reports has not yet been decided. Most of the competitors have, it is understood, agreed to leave them in the hands of the Executive Committee until it is seen it there will be funds to print and publish them. Their publication is desirdesirable in the interests of science and forestry, and surely the Executive will manage to find the needful funds for this important purpose; although we are told that, so far as present appearances go, there is little prospect that there will be any funds available for such a purpose.

Loughborough Chrysanthemum and Fruit Show: *November* 22.—The tenth annual exhibition of the Loughborough Chrysanthemum and Fruit Society, held at the Town Hall on Saturday, was pronounced by all who witnessed it to be an excellent one, and, indeed, competent judges did not hesitate to characterise it as the best the Society has yet promoted. As an exhibition of Chrysanthemums alone the show was deserving of a visit, for the display of these beautiful winter blooms was probably as extensive and as choice as could well be desired by the most exacting of critics. Besides an increase in the number of exhibitors, there was a decided improvement upon former exhibitions both in plants and bloom. The trained plants made a most effective display, and the specimens shown by the Rev. J. Bird (President of the Society) again asserted their superiority, and secured from the judges no fewer than three first awards. In each case second honours went to Mr. F. J. Rowbotham (the Secretary of the Society), who competed for the first time on this occasion, and is to be congratulated upon the marked success he achieved. The premier award for the six untrained specimens went to Mr. J. Spiby, gr. to Mr. G. E. Paget, Sutton Bonnington, who also competed for the first time, and enhanced the beauty of the exhibition by his choice plants. Pompons were perhaps the least satisfactory department of the show, though some of the specimens were heavily laden with flowers, and presented a pretty appearance. It is to beregretted that there was not more competition for the prizes offered for the best group of flowering and foliage plants, which again on this occasion only secured a single entry. The judges, however, had no hesitation in awarding the 1st prize to the group staged by Mr. Ritchings (gr. to W. B. Paget, Esq.), which consisted of some handsome exotic and other plants, including a number of fine Chrysanthemums, the whole being arranged with judicious skill and good taste. In addition to the prize group another well-arranged and attractive collection of plants was staged as a non-competitive exhibit by Mr. D. Roberts (gr. to Hussey Packe, Esq.), and was highly commended by the judges. These two, added to a group of Chrysanthemums and pompons, made a suitable decoration for the centre of the large hall. The Primulas shown on this occasion were more numerous than usual, and were of fairty good quality. Both 1st prizes went to Mr. J. Smith, nurseryman, Loughborough. It was in the department for cut flowers, however, that the chief attraction seemed to be contained, and the magnificent specimens of the Chrysanthemum in its numerous varieties well deserved the attention and the encomiums bestowed upon them during the day. Foremost amongst the exhibitors was Mr. J. Landsell, who gained four of the five 1st awards with blooms which were throughout of the choicest description, and aptly illustrative of the results which can be attained by the careful development of these popular flowers. That the competition was very keen is clear by the fact that in making their awards the judges were compelled to divide two of the prizes. One of these divisions was in the class for the eighteen blooms, the first of which was by common consent rightly awarded to Mr. Landsell. For the 2d award the judges were obliged, after carefully weighing the merits of the exhibits, to bracket the Rev. J. Bird and Mr. Ritchings as equal. Both lots were remarkably good, and only in a slight degree inferior to the 1st prize specimens. The Rev. J. Bird gained four other 2d prizes, while two other awards went to Mr. Ritchings, who, we believe, entered the lists for the first time this year, and is to be congratulated upon the bold bid which he made for the premier honours. Mr. George Perkins, as an amateur, deserves special mention for his success in securing a 1st award in such company. The Japanese specimens made a good show, and their varied hues and quaint forms were much admired.

Fruit.—The display of fruit, too, was quite in keeping with the general excellence of the show. The various classes produced ample competition, while the quality of the fruit was above the average. The black Grapes shown by Mr. Squires and Dr. Palmer were indeed handsome specimens. The judges awarded the 1st prize to Mr. Squires, who also obtained similar honours for his highly meritorious white Grapes. Apples were without doubt a fine class, and a conspicuous feature was provided in the enormous cooking Apples shown by the Rev. J. Bird. Pears were also a good class, but altogether inferior to the Apples. Several honorary exhibits served to enhance the attractions of the exhibition, amongst them being the following:—White Grapes, by Mr. R. Shaw; Chrysanthemums, by Mr. Spilby; Pears, by Mr. F. Haynes; Gloxinias (highly commended), by Mr. Ritchings; Apples and Pears, by Mr. Wesley.

York Ancient Florists' Chrysanthemum Show: *November* 26, 27, *and* 28.—The above well known Society of Northern florists held their fourth annual Chrysanthemum show on the above-named dates, and taking all points into consideration it was a decided advance on previous exhibitions. The classes for specimens in pots were particularly good in comparison with other shows. The flowers and the foliage were better, and the training arrangements less conspicuous. Prizes are offered for fruit in connection with the Chrysanthemum, and amongst them this year were special prizes for a collection of Apples of home growth, which brought out a splendid lot of fruit, fully 700 dishes being staged. As usual, the show was held in the exhibition building belonging to the York Fine Art Institute, which is specially adapted to the purpose—perhaps as much, or more so than any other available building in the North of England.

Taking the classes as arranged in the schedule we first come to prizes for groups of miscellaneous plants arranged for effect. There was good competition. Messrs. Simpson & Sons, florists, Heworth, were 1st, with a nice group; J. T. Hingston, Esq., Clifton (gr., Mr. McIntosh), 2d; Dr. Baker, The Retreat, York (gr., Mr. Dawe), 3d. For a group of Chrysanthemums 9 feet in diameter, there was a capital competition. The 1st prize, a Silver Cup given by the ex-Lord Mayor, was won well by his late lordship's gardener, Mr. Falcard; his plants were well grown, and the individual blooms of good size and substance. Mrs. Gutch, York (gr., Mr. Everard), 2d; J. T. Hingston, Esq., 3d. In the class for twelve Chrysanthemums, large-flowered, the plants to be on single stems, there were some very good plants shown. Dr. Baker was 1st, his best plants being John Salter and Guernsey Nugget; J. T. Hingston was 2d, with much dwarfer plants with more flowers on, but the individual flowers not so fine as the 1st prize lot; Mrs. Gutch 3d. For twelve distinct Chrysanthemums, excluding pompons, Mr. T. Smith, Murton, York, a working mechanic, was 1st, winning the Silver Cup given by the City Sheriff. His plants were well grown specimens of mostly free-flowering well-known varieties, and did the exhibitor much credit. Miss Steward, Bishopthorpe (gr., Mr. Vere), was 2d; and J. T. Hingston, Esq., 3d, in a capital class. For six large-flowered varieties there were some good plants shown. Miss Stewart was 1st. For six Japanese varieties, Mr. T. Smith was 1st. Prizes were offered for three Japanese and single specimen varieties, also three large-flowered varieties, the same exhibitors winning the prizes in these classes as in those mentioned, though not quite in the order named above. Pompons were very good as a whole. Pink and white Cedo Nulli appear to hold their own more than some of the older varieties in the large-flowering classes do. For six pompons, Mr. T. Smith was 1st, and Miss Stewart 2d, both exhibiting fresh healthy plants with an abundance of bloom on them.

Prizes were, as usual, offered for six pots of Roman Hyacinths, six Primulas, six Cyclamens, six table plants, in all of which classes there was good competition and well grown plants, with the exception of Cyclamens, and these were very moderate. J. Buckle, Esq., York (gr., Mr. Russel), exhibited some excellent plants in the class for six exotic Ferns; especially noticeable were fine specimens of Goniophlebium subauriculatum and Microlepia hirta cristata. The Rev. G. E. Gardener, Heworth (gr., Mr. Lazenby), was 2d in this class, with well grown but smaller plants. In the class for twenty-four cut blooms, twelve incurved and reflexed and twelve Japanese, there were some fine blooms exhibited. The 1st prize, a Silver Cup, given by the ex-City Sheriff, H. Rymer, Esq., was well won by Mrs. Hague Cook, Mirfield (gr., Mr. Daniels); the varieties were composed of those kinds usually met with at good shows. D. Wilson, Esq., Cottingham, Hull, was 2d, with a good lot, especially the Japanese varieties; W. B. Richardson, Esq., Elm Bank, York, was 3d; R. H. Jamieson, Esq., Hull, 4th. Mrs. Hague Cook was again 1st in the stand for twelve large-flowered varieties, with similar varieties to the ones in the stand for twenty-four. In the stand for twelve Japanese varieties the same lady was equal 1st with D. Wilson, Esq., both stands containing fine blooms of mostly well known varieties. In the pompon class of cut blooms there were some good stands exhibited, but nothing calling for special remark. Mrs. Hague Cook 1st; A. F. Cholmley, Esq., Malton (gr., Mr. Hemmings), 2d; Miss Wharton, Burton Grange, 3d. For a stand of cut blooms of stove and greenhouse plants, in twelve varieties, there were nine competitors. A. Pease, Esq., M.P., Darlington (gr., Mr. Shortt), was 1st; Mr. S. Thomas, Bradford, 2d.

In the non-competing class, Mr. T. B. Morton, Mowden Bridge Nurseries, near Darlington, staged some fine stands of cut blooms of Chrysanthemums, both incurved and reflexed, and Japanese varieties. Also two stands of pompons put up as bunches, three stems of one variety in a bunch—to my mind the only way thatpompons should be exhibited aslo cut blooms. Mr. Morton had also some very nice plants in 4-inch pots, each being from 8 to 10 inches in height, carrying a fine bloom on the top; these had been struck quite tall, and were certainly a novelty at York.

Mr. H. Cannell, of Swanley, also exhibited a capital stand of various plants, not for competition. His bunches of cut blooms of zonal Pelargoniums were especially fine. In a stand of single Chrysanthemums, America and Peter Henderson were very distinct; they may be classed as single Japanese varieties. The same nurseryman had a very good batch of Primulas, amongst which Swanley Giants—Red, White, and Blue—and Queen of the Whites were tbe most distinct.

Fruit and Vegetables.—For two bunches of black Grapes, G. H. Shaw, Esq., Howden (gr., Mr. Bearpart), was 1st with two fine bunches of Alicante; F. B. Franks, Esq., Campend Hall, Doncaster (gr., Mr. Bonsall), 2d, with the same variety, in good order; the same gentlemen winning the same prizes in the class for two white bunches, both exhibiting very good Muscats. Mr. J. Watkins, Pomona Farm, Hereford, was 1st for Messrs. Backhouse's prize for an assortment of home-grown Apples, his collection containing about 100 sorts, which for size and colour outdistanced Yorkshire-grown fruit very much. J. T. Hingston, Esq., Clifton (gr., Mr. McIntosh), was 2d, with an equal number of varieties to the 1st prize lot. Altogether, nine different collections were exhibited in this class, thus giving pomologically-disposed persons such an opportunity of comparing notes as has not previously happened in York. It has been suggested that prizes should be offered for Pears another year, limiting the competition to counties north of the Trent, and requesting exhibitors to kindly note with their exhibits under what circumstances they were grown, viz., as to soil, shelter, &c. There was a fine lot of Apples shown for the prizes offered for collections of six dishes, both dessert and kitchen varieties, also in the single dish classes. Pears were not so extensively shown as in some previous years. Some very fine vegetables were put up both in the collections and single dishes; a dish of Rousham Park Onions, exhibited by Mr. Mitchell, gr. to Lord Wenlock, of Escrick Park, being very noteworthy. *H. J. C.*

Scottish Horticultural Association.—A meeting of this Association was held on the 2d inst. at 5, St. Andrew Square, Edinburgh—Mr. John Methven, President, in the chair. Two communications were submitted—the one on "The Gardenia," by Mr. J. Browning, Dupplin Castle, and the other on "The Croton," by Mr. James Mitchell, The Gardens, Newmains. Both were read by the Chairman. In the first, the writer referred to the fragrance and beauty of the Gardenia, and its suitability for bouquets, and also gave some hints as to its propagation; while in the second paper Mr. Mitchell called attention to the medicinal properties of the Croton, and also to its suitability for table decoration, adding a description of the method in which it could most advantageously be cultivated. The following were the exhibits:—Messrs. R. B. Laird & Son, nurserymen, Edinburgh, showed a very fine collection of new Chrysanthemums for 1884, single and double. Messrs. T. Methven & Son, nurserymen, Edinburgh, showed a fine collection of cut Chrysanthemums, also Dahlia imperialis (blooms), and Tussilago grandis in flower. Mr. McLure, Trinity Grove, Edinburgh, showed some very large Chrysanthemum blooms sent from Liverpool. The exhibitors received a vote of thanks from the meeting.

Hull and East Riding Chrysanthemum.—This Society held its first exhibition in the Public Rooms, Hull, on November 20 and 21, and when we learn that till last September no steps were taken to hold a show, we can only wonder at the result, and compliment the managers on their well earned success. The show presented a very attractive appearance, and was rendered more so by a large collection of miscellaneous plants arranged by Mr. McMahon, Curator of the Hull Botanic Gardens. As large numbers of visitors were admitted (about 4000), and all appeared highly gratified, we doubt not that in future this Society will have as good a show as there is in the North. All the classes were well contributed to, and taken as a whole the exhibits would compare with any show that has been held in the North this year. The chief prize in the cut bloom section, viz., for forty-eight equal of incurved and Japanese, was carried off by Mr. E. Green, gr. to J. Woolright, Esq., Mossley Hall, Liverpool, with fine fresh blooms of good size and finish of the following varieties:—Incurved: Alfred Salter, John Salter, Empress of India, Prince Alfred, Queen of England, Princess of Wales, Golden Empress of India, Lady Slade, Lord Wolseley, Hero of Stoke Newington, Sir Stafford Carey, Princess of Teck, Venus, Jardin des Plantes, Lady Hardinge, Mrs. W. Shipman, Blonde Beauty, Barbara, Mrs. Heales, Beauty, Cherub, Princess Beatrice, Mrs. Halliburton, and Eve. Japanese: M. C. Andiguier, Golden Dragon, Triomphe de la Rue du Châtelet, Soleil Levant, Baronne de Prailly, Criterion, Peter the Great, Red Gauntlet, Apollo, Mons. Ardenne, Japonaise, Meg Merrilees, J. Delaux, Comte de Germiny, La Nymphe, Père Delaux, Sarnia Striatum, Hiver Fleuri, Oracle, Thunberg, Magnum Bonum, and The Sultan; Mr. F. Coulling, gr. to J. Barton, Esq., M.P., Monk's Manor, Lincoln, coming next, with small but nicely finished blooms. The next most important class, that for twenty-four blooms, twelve incurved and twelve Japanese, was most spiritedly contested. Mr. Green was again 1st with exhibits similar to his premier collection; Mr. Mitchell, gr. to J. Warrener, Esq., Bracebridge, Lincoln, coming 2d; Mr. Bulmer, gr. to D. Wilson, Esq., Park House, Cottingham, 3d; and R. Falconer Jameson, Esq., Hessle, 4th. The class for twelve incurved blooms brought forth thirteen exhibitors. Mr. Green was again 1st, Mr. Bulmer 2d, and Mr. J. Browshow, Toll Gavel, Beverley, 3d. For twelve

Japanese, Mr. Green again defeated his opponents, being closely followed by Mr. Bulmer and Mr. Mitchell respectively. For six Anemone-flowered varieties, Mr. Morton, Darlington, was 1st; Mr. R. Falconer Jameson 2d, and Mr. F. W. Jameson 3d. For the best six reflexed blooms, Messrs. Mitchell, R. F. Jameson, and F. W. Jameson, were respectively 1st, 2d, and 3d. For six blooms, any variety, distinct.—Mr. Mitchell 1st, Mr. R. F. Jameson 2d, and Mr. F. W. Jameson 3d. Messrs. Bulmer, F. W. and R. F. Jameson, respectively, were successful for the prizes given by Mr. E. P. Dixon, Seedsman, Florist, &c., Queen Street, Hull. The amateurs' classes were well contested, but space will not permit a detailed account. For the best group of Chrysanthemums interspersed with foliaged plants Mr. Bulmer was 1st; Mr. Cottam, Hall Gate, Cottingham, 2d; and Mr. Strickland, gr. to Lieut.-Colonel Sauer, Elgin Villa, Hull, 3d; Mr. Harland and Mr. Read extra. Mr. T. Smith, Murton, near York, won the premier prize, given by Messrs. Laverock & Goddard, Union Street, Hull, with twelve well grown specimen plants; and this gentleman and Messrs. Bulmer and Wilkinson, gr. to Mrs. Ross, Elloughton Lodge, Brough, carried off the rest of the prizes in this section. The classes for bouquets and dinner-table decorations were fully well contributed, and were of the usual interesting character.

Yeovil Chrysanthemum.—One of the latest additions to the rapidly-increasing list of autumn shows is that at Yeovil, Somerset, and November 11 last was the day of its inauguration. Although the schedule was of very modest dimensions, the entries of Chysanthemums numbered 165. Many of the exhibitors were evidently novices at competition, as the blooms were far below the present average of exhibition quality. This, however, was made up for by the excellence of several of the trays, which included splendid contributions from Mr. Thomas, gr. to Mr. Wilfrid Marshall, of The Elms, Staplegrove, Taunton, who took 1st honours for incurved varieties, Japanese, and any variety, with grand specimens of the leading sorts. Mr. Iggulden, gr. to the Earl of Cork, took the lead with a tray of six incurved and six reflexed, several of the blooms being of fine size, colour, form, and finish. The bouquets and vases displayed considerable taste, and attracted much attention. The Chrysanthemum plants were not very good specimens of modern culture. Those to which the 1st prize was awarded had evidently been potted at a very late period; they were fine plants and well flowered, but leggy and short of lower foliage. The collection of fruit was large and varied. Messrs. J. Scott & Co., of Merriott, contributed about 200 varieties of Apples; and Mr. W. C. Pragnell, of Sherborne Castle, sent an excellent assortment of table fruit. The local exhibits in this class were unusually good. Grapes, Pears and salad brought many entries.

Devon and Exeter Horticultural Society: *Nov.* 21.—A very successful exhibition was held in the Victoria Hall, Exeter, in aid of the funds of the Society. No prizes were offered on this occasion, but the responses from exhibitors to the proposals of the promoters were unanimous. The hall was completely filled with exhibits of superior merit. Never was seen in the "Ever Faithful City" at this period of the year such a grand display of fruit and flowers as on this occasion. Groups of plants were arranged round the hall, with five large tables occupying the centre the length of the room filled with Apples, Pears, Grapes, Pines, &c., and cut blooms of Chrysanthemums, &c. The two principal local nurserymen—Messrs. Veitch and Lucombe, Pince & Co.—added very materially to the exhibition with large collections of plants, fruits, and cut flowers. The successful result has induced the committee to recommend to their subscribers the advisability of holding an annual Chrysanthemum and fruit exhibition, which, judging from the recent patronage, no doubt will obtain good support.

Massachusetts Horticultural. — The annual Chrysanthemum show was held on November 13 and 14, and was certainly the best exhibition ever made by the Society. The Society's large hall was filled with fine specimen plants and cut flowers of Chrysanthemums. The largest exhibitor was Dr. H. P. Walcot, one of the best amateur growers of Chrysanthemums in this country. Among the seedlings shown by him President Parkman is the most noticeable. Dr. Walcot says "he has no trouble in raising seed if the house is given up to the plants. The formation of seed commences in every house, but it is only perfected in a dry atmosphere. The house must be aired thoroughly, and the plants never syringed but kept dry; still more to prevent the collection of moisture at the base of the flowers he cuts off the petals." Among the many varieties shown by him we noticed the following, viz., Belle Poule, Freycinet, M. Bayer, Princess Meletia, La Vogue, Lord Wolseley. Mr. J. L. Gardener showed La Charmeuse, which is the finest plant shown in the whole collection, and took the 1st prize for a single specimen of the Japanese class. Ex-President Marshall P. Wilder made a large display of named plants in pots, which were remarkably well grown. Mr. E. W. Wood showed a large collection and was awarded 3d prize for specimen plant John Salter, and 2d prize for specimen plant pompon Golden Emile. Mr. J. O. Bruce, of Jamain Plain, exhibited a large collection of named varieties in pots. Mr. Edwin Rewkes, of Newton Highlands, took the 1st prize in the class of twenty-four sprays of Japanese varieties. He also took the 1st prize in the class of twenty-four sprays pompon. Mr. Fewkes also exhibited some seedlings of great merit. Messrs. Hallock & Thorpe, of Queen's County, New Jersey, showed a large and fine collection, of seedlings and other flowers. Mr. Edwin Sheppard exhibited a collection of new Pelargoniums of a large size and most brilliant in colours. Many other fine collections were shown by various contributors. Of Orchids shown we noticed Dendrobium formosum, D. giganteum, Saccolabium Blumei majus (two plants of different varieties), Odontoglossum grande, Oncidium Papilio, a yellow variety, the most singular one shown, indeed it has never been shown here before. Mr. H. Hunnewell exhibited a splendid plant of Cattleya exoniensis, and Mr. David Allan, Cypripedium Fairrianum (first time on exhibition). Mrs. P. D. Richards, West Medford, Massachusetts, contributed a large collection of wild plants, all carefully named. We noticed plants in bloom which are quite rare for this time of the year (Nov. 13). Large displays of cut flowers were made by many contributors.

Notices of Books.

The Australian in America. By J. L. Dow, M.P. Melbourne: *Leader* Office.

Mr. Dow, who is a member of the Victorian Legislature, visited America at the special instance of the *Leader*, a Melbourne newspaper. He traversed the continent from the Pacific to the Atlantic side, from the Canadian frontier to Cincinnati, New Mexico, Arizona, and back to California, a distance of some 10,000 miles, in less than three months. "After seeing America, an Australian's opinion of his own country is greatly enhanced. The Australian continent is just about equal in area to the United States, but in Australia the soil is richer, and there is more of it rich, while the only part of America that can equal the Australian climate is California. The grandest thing about America is its people. Their enterprise is extraordinary, and even a transient visitor becomes infected by it." After a just tribute to their other virtues, especially to their hospitality, Mr. Dow goes on to describe in epistolary form the general characters of the country traversed, the system of local government, the agricultural features of the several States, and other matters of interest to the farmer and cultivator. These letters are capitally written, and convey the impressions of a careful and accurate observer in a very pleasant unaffected manner. We do not, in fact, know of any book in which the general reader can gain in such small compass and with so little trouble such an excellent idea of the vastness of the resources of America, and the zeal of her people. It is as refreshing as it is astonishing to read of the "go-ahead" tendencies of our cousins across the Atlantic. Fruit growers more especially would do well to read Mr. Dow's account, and cultivators of all kinds would be interested in seeing what the Government Department of Agriculture does in the way of collecting and diffusing information. The opinions of a cultivated Australian are specially worthy of attention, for he, too, is a citizen of a new country and less prejudiced naturally in favour of the old-time methods which obtain in the mother country.

—— *A Book about Roses.*—Messrs. Blackwood & Sons send us a copy of the eighth edition of Canon Hole's popular and pleasant Rose book. With a view to yet greater success the work is issued in a cheaper form. *Floreat!*

—— *British Fresh-water Algæ.*—Dr. M. C. Cooke's work on this subject is now completed. The tenth number contains a list of authorities consulted, a glossary and index, and fourteen coloured plates. Messrs. Williams & Norgate are the publishers.

—— *Book Lore.*—Mr. Elliot Stock has issued the first number of a new periodical monthly under this title. It is devoted to books, especially old books. Though professedly addressed to a class of book-lovers to whom the contents of a book are often of mere secondary importance, the magazine is full of matter that is of interest to the general reader. It is noted, for instance, that Hood's "Song of the Shirt," which appeared in *Punch* in 1843, was omitted in the index to the volume, and thus the curious seeker may be foiled in his search for the origin of this famous poem. Paper and type of this new magazine are excellent.

—— *Catalogue of Lilies.*—An alphabetical list of the species and varieties of Lilies, with reference to Mr. Baker's synopsis, published in our columns in 1875, and to other works, with synonyms and a few short notes, has lately been published in Ghent by M. Annoot-Braeckman. The compiler's name is withheld. Unfortunately, it appears that he did not see Mr. Elwes' splendid monograph till after the compilation of his list.

—— *Bramble Cloisters.*—Under this title, and in affected guise of thick sugar-paper, with rough edges, Mr. John Watkins Pitchford has published (Elliot Stock) a small volume of verse of rather Tupperian quality, but which manifests love of Nature and considerable powers of observation, degenerating sometime into something like twaddle, of which the following extract may serve as an illustration :—

> . . . . . "The donkeys browse,
> Kicking, or switching ever-restless tails,
> While cattle cropping near with snuffling breath
> Lick up the grass, twitching their ears."

—— *The Origin of Cultivated Plants.*—We are glad to see that an English edition of this useful book of M. de Candolle's has been published by Messrs. Kegan Paul, Trench & Co. The book was fully noticed by us on its first appearance, so that all we need do is to remind the reader that the work in question is devoted to an investigation of the original source and native country of the principal plants cultivated on a large scale for food or for other purposes The evidence upon which the conclusions are based is drawn from the study of the botanical characteristics of the plant, from the known facts of geographical distribution, from archæological and historical investigations, and from philological enquiry. The translation is well done, and some few additional notes have been added by the author.

—— *The Gartenflora.*—It is stated in the *Garten Zeitung* that this publication, conducted so long by Dr. von Regel, will in future be edited by Professor Engler and Inspector Stein, of the Breslau Botanic Garden.

GARDEN PALMS.

(*Continued from p.* 596.)

Brahea, Mart.—Only four species are included in this genus according to the *Genera Plantarum*, and of these two, possibly three, are cultivated at Kew. They are near allies of the Thrinaxes, to which genus the young plants have a striking resemblance. When fully developed the Braheas reach a height of 30 feet, the trunk being rather thick, smooth, annulated, and is surmounted by a head of fan-shaped leaves, of about 7 feet in diameter. The blade is divided about halfway down into numerous segments, which are again split at the top; the rachis is rather short and stout, with a few short spines along the margins. Fruit, a succulent drupe, about as large as a cherry. the pericarp yellow, wrinkled when ripe and sweet to the taste; seeds round, smooth, pale brown. Cotyledon simple. Being natives of the mountains of Mexico these plants will thrive in a greenhouse.

B. dulcis, Mart., "Palma dulce" (Thrinax tunicata, Hort.; Livistona occidentalis, Hort.; Corypha dulcis, H. B. K.).—Mexico.

B. lucida, Hort.—Hab.?

B. nobilis, Hort. Rollis.—Hab.?

B. glauca, Hort., is Erythea armata, S. Wats.—Other garden Braheas are included under Washingtonia.

Calamus, Linn. (including Dæmonorops, Blume), "Rattan canes."—A very extensive genus, which is confined chiefly to Tropical Asia, a few being found in the tropics of Australia and Africa. With only a very few exceptions the whole of the species, numbering about 200, are climbing in habit, some of them growing to a length of several hundred feet. The graceful character of all the species when young has led to many of them becoming popular for garden purposes, thirty-seven species being represented at Kew. Unfortunately, there is a very close similarity in the leaf characters of many of the species, which renders it often extremely difficult to distinguish them from each other. Such at least is the case at Kew. It is possible that errors in nomenclature in regard to this genus originated when the young plants or seeds were first introduced. At present it seems impossible to identify some of the young Calamuses at Kew with mature characters of the species they are supposed to represent, though it would be difficult to prove what they really are in their present juvenile state; as, for instance, we may take the plants known at Kew and

elsewhere as C. fissus, C. palembanicus, C. Jenkensianus, C. Lewisianus, C. melanochætes, C. Oxbyanus, C. periacanthus, and several others. These are hardly distinguishable from each other, so far at least as the young plants here go, and any of the names might do for any or all of them. Some of the species, such as C. ciliaris, the small hairy foliage and graceful habit of which are so striking and attractive; C. schizospathus, which has a stout stem and large leaves, and apparently is not a climbing species; C. Manni, in the Glasnevin collection; C. australis, C. asperrimus, and Mr. Bull's recent introduction; C. trinervis; all have good characters, by which they are easily identified. Where every one of the 200 species is, so far as is known, graceful enough and beautiful enough to deserve cultivation as ornamental foliage plants, it is unnecessary to make selections. They are all distinctly tropical, and prefer a shaded position in a moist atmosphere. Both overhead and at the root we find abundance of water good for all the Calamuses. Many of the species produce their stems in tufts, which may be divided into as many separate plants as there are stems; C. ciliaris shows this character soon after its first stem has reached a height of 2 feet—a circumstance which renders the propagation of this species much quicker than is usual with the majority of Palms. The stems of Calamuses are slender, and are clothed with the persistent bases of the leaves. The leaves are pinnate, graceful in form, segments generally narrow, acuminate; on old plants the rachis is prolonged into a long whip-like cord, furnished with recurved hooks by means of which the stems are supported and enabled to climb. Every part of the plant is covered with spines or spiny hairs, the former being often strong and flattened like knife-blades. The fruits of Calamuses are globose or ovate in shape, and are characterised by a pericarp formed of numerous overlapping scales, which are hard, smooth and shinning and generally dark brown or yellowish. These scales give the fruits an appearance not unlike the cones of Pines. The seeds are enclosed one in each fruit (rarely two or more), and are hard and rugose; they vary in size from that of a marble to a pigeon's egg, and in form there is about the same amount of variation. Young plants assume a graceful character soon after germination, the first leaf being pinnate.

C. adspersus, Blume.—Java.

C. andamanicus, Kurz.—Andaman Islands.

C. asperrimus, Blume.—Java, Assam, and Chittagong?

C. australis, Martius (C. obstruens, F. Mueller).—Tropical Australia.

C. calicarpus, Griffith.—Malacca.

C. calolepis, Miquel.—Java.

C. ciliaris, Blume.—Sumatra, Java, Borneo.

C. cochin-chinensis, Hort. Linden.—Cochin-China.

C. delicatulus, Thwaites.—Ceylon.

C. erectus, Roxburgh.—Silhet, &c.

C. farinosus, Hort. Linden.—Hab.?

C. fissus, Blume.—Sumatra, Java, Borneo.

C. flagellum, Griffith.—Sikkim Himalaya and Assam.

C. floribundus, Griffith.—Upper Assam.

C. heteroideus, Blume.—Java.

C. hystrix, Martius.—Malacca and Java.

C. Jenkensianus, Griffith.—Assam, Sikkim Himalaya.

C. latifolius, Roxburgh.—Chittagong, Burma, &c.

C. leptospadix, Griffith.—Khasia Mountains, Sikkim, Assam.

C. Lewisianus, Griffith.—Penang.

C. marginatus, Blume.—Borneo.

C. melanochætes, Wendland.—Java.

C. montanus, Anderson.—Sikkim Himalaya.

C. Muelleri, Wendland.—Tropical Australia.

C. Nicolai, Hort. Rollisson.—Hab.?

C. Oxbyanus, Teysmann and Binnendyk.—Hab.?

C. pachystemonus, Thwaites.—Ceylon.

C. palembanicus, Blume.—Sumatra.

C. periacanthus, Miquel.—Sumatra.

C. Rotang, Linn. (C. Roxburghii, Griffith.).—Bengal, Assam, Coromandel.

C. Royleanus, Griffith.—Tropical Himalaya.

C. rudentum, Loureiro.—Java.

C. schizospathus, Griffith.—Sikkim and Khasia Mountains.

C. tenuis, Roxburgh.—Silhet, Assam, &c.

C. trichrous, Miquel.—Sumatra.

C. trinervis, Hort. Bull.

C. viminalis, Willdenow.—Celebes.

C. Wightii, Griffith.—Deccan.

(To be continued.

Law Notes.

SHREWSBURY ASSIZES. — *Special Jury*—CALVER AND ANOTHER *v.* EYTON AND ANOTHER. — Mr. Francis Calver, nurseryman and seedsman, of Ludlow, sued Messrs. T. Slaney, Eyton, and another, bankers and brickmakers, of Shrewsbury and Ludlow, for damages caused by the defendants permitting certain noxious vapours to pass over his nursery, and for an injunction.

Mr. Jelf, Q.C., and Mr. H. D. Grune, were counsel for the plaintiff; and Mr. Matthews, Q.C., and Mr. A. T. Lawrence, represented the defendants.

Mr. Jelf, in opening the case, explained that in 1872 his client took over the business of a Mr. Cox in Ludlow; in 1878, wishing to extend his business he rented a piece of land near to the brick-kilns. The defendants had not got the necessary appliances for disposing of the smoke arising from their machinery, but it went straight over his client's ground, and was doing, and had done, irreparable damage to the young trees.

At this stage his Lordship suggested that the counsel engaged should try and settle the matter in dispute.

After a long consultation with their respective clients, Mr. Jelf announced that they had arrived at a settlement. The had agreed to withdraw the case and to refer it.

The hearing of the reference took place on October 3 and 4 and 20 and 21 in the Council Chamber, Ludlow, before Mr. B. Wooldridge, of Stourbridge, as arbitrator, and Mr. N. C. Neville, of Birmingham, barrister, as legal assessor. Mr. H. D. Greene appeared for the plaintiffs, and Mr. A. T. Lawrence for the defendants. A great many witnesses, practical and others, were examined on both sides.

The arbitrator has now made his award. The defendants are to pay the sum of £31 13*s.* 4*d.* as damages, to erect a tall chimney before May 1 next, and to conduct the burning of bricks, &c., hereafter in such a manner as to give off the least possible smoke or fume; the defendants to pay the plaintiffs their costs of, and incidental to, the action, reference, and award, and also to bear their own costs.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, DECEMBER 3, 1884.

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 30 years.	Dew Point.	Degree of Humidity, Sat. = 1000.	Average Direction.		
Nov	In.	In.	°	°	°	°	°	°				In.
27	29 85	+0 1	46	36.5	10.0	42.9	+ 1.3	38.7	85	N.W.; W.N.W.		0 00
28	29 57	—0 13	47	34.0	13	40.2	— 1 4	34 7	81	W.; W.N.W.		0.02
29	29 66	—0.06	38	31.0	7	35	— 6.7	29 6	80	W.N.W.		0.00
30	29.80	+0.08	37.0	29	8	32 5	— 9.2	31.0	96	W.S.W.		0.40
Dec.												
1	29 72	—0 02	37	32.0	5	34 8	— 6 9	33 0	93	E.		0.02
2	29 53	—0 21	48	31	16	41	0 —	0 8	38.7	92	S.; E.S.E.	0.09
3	29.26	—0 48	51	43	11	49.5	+ 7.7	44.3	85	W.S.W.		0.10
Mean	29.63	—0.10	44	33.9	10.1	39 4	— 2 3	35 7	88	W.N.W		0 63

Nov. 27.—Fine; dull day and night.
— 28.—Dull day. Fine clear night.
— 29.—Fog in early morning. Fine day and night.
— 30.—Fog in early morning. Few snowflakes in afternoon. Rain from 3 P.M. till 10 P.M.
Dec. 1.—Snow fell in early morning. Rain in afternoon. Dull and overcast at night.
— 2.—Drizzling rain nearly all day. Dull cloudy night.
— 3.—Drizzling rain in morning. Dull day and night. Slight rain in evening.

LONDON: *Atmospheric Pressure.*—During the week ending November 29, the reading of the barometer at the level of the sea increased from 30.11 inches at the beginning of the week to 30.17 inches by midnight on the 23d, decreased to 30.12 inches by 9 A.M. on the 24th, increased to 30.27 inches by 9 A.M. on the 25th, decreased to 30.25th inches by 3 P.M. on the 25th, increased to 30.28 inches by 9 A.M. on the 26th, decreased to 30.26 inches by 3 P.M. and increased to 30.27 inches by midnight on the same day, decreased to 29 71 inches by 3 P.M. on the 28th, and was 29.97 inches by the end of the week.

The mean reading of the barometer for the week was 30.06 inches, being 0.14 inch lower than last week, and 0.19 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 47°.5, on the 28th; the highest on the 25th was 37°.5. The mean of the seven high day temperatures was 41°.6.

The lowest temperature was 25°.2, on the 25th; on the 27th the lowest temperature was 36°.5. The mean of the seven low night temperatures was 31°.3.

The greatest range of temperature in one day was 13°.5, on the 28th; the smallest was 7°, on the 29th. The mean of the seven daily ranges was 10°.3.

The mean temperatures were—on the 23d, 36°; on the 24th, 33°.3; on the 25th, 31°.3; on the 26th, 37°.7; on the 27th, 42°.9; on the 28th, 40°.2; and on the 29th, 35°; and these were all below their averages (excepting the 27th, which was 1°.3 above) by 5°.7, 8°.3, 10°.3, 3°.9, 1°.4, and 6°.7 respectively.

The mean temperature for the week was 36°.6, being 2°.1 lower than last week, and 5° below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo was 65°, on the 27th. The mean of the seven readings was 58°.1.

The lowest reading of a minimum thermometer with its bulb placed on grass was 20°.5, on the 24th. The mean of the seven readings was 23°.1.

Rain.—0.02 inch fell on the 26th.

ENGLAND: *Temperature.*—During the week ending November 29, the highest temperatures were 52° at Truro, 50° at Plymouth and Leeds; the highest at Sheffield, Hull and Bradford was 47°. The general mean was 48°.2.

The lowest temperatures were 22°.4 at Cambridge, 24°.5 at Wolverhampton, 25°.1 at Bolton; the lowest at Plymouth was 32°, at Leeds and Sunderland 30°. The general mean was 27°.5.

The greatest ranges were 25°.4 at Cambridge, 24° at Truro, 22°.9 at Wolverhampton; the smallest ranges were 18° at Plymouth, 18°.2 at Bradford, and 18°.5 at Liverpool and Preston. The general mean was 20°.7.

The mean of the seven high day temperatures was highest at Truro, 49°, at Plymouth 46°.7, at Leeds 44°.7; and was lowest at Sunderland, 40°.5, at Cambridge 40°.9, at Bolton 41°. The general mean was 43°.1.

The mean of the seven low night temperature was highest at Liverpool, 36°.7, at Plymouth 36°.1, at Truro 35°.6; and was lowest at Hull, 29°.8, at Wolverhampton, 30°.3, at Bolton 30°.4. The general mean was 33°.

The mean daily range was greatest at Truro, 13°.4, at Hull 12°.6, at Nottingham 12°; and was least at Sunderland, 5°.4, at Liverpool 6°.3, at Preston 8°.5. The general mean was 10°.1.

The mean temperature was highest at Truro, 42°.1, at Plymouth 41°.2, at Liverpool 39°.7; and was lowest at Bolton, 35°.5, at Cambridge 35°.7, at Wolverhampton, 35°.8 The general mean was 37°.8.

Rain.—The largest falls were 1 inch at Bolton, 0.66 inch at Truro, 0.53 inch at Liverpool; the smallest falls were 0.02 inch at Blackheath and Cambridge, and 0.08 inch at Leeds. The general mean fall was 0.28 inch.

SCOTLAND: *Temperature.*—During the week ending November 29, the highest temperature was 51°.1, at Dundee and Perth the highest was 49°. The general mean was 49°.9.

The lowest temperature in the week was 23°.5, at Glasgow; at Leith the lowest temperature was 31°. The general mean was 27°.3.

The mean temperature was highest at Paisley, 40°; and lowest at Perth, 36°.2. The general mean was 38°.1.

Rain.—The largest fall was 1.20 inch, at Aberdeen, and the smallest fall was 0.04 inch, at Edinburgh. No rain fell at Dundee or Perth. The general mean was 0.24 inch.

JAMES GLAISHER, F.R.S.

Obituary.

GEORGE MATTHEWS.—The subject of this notice we are informed by Mr. McIndoe, Otago, Dunedin, was one of the old links of gardening celebrity, and although away from the British Isles, his name has not been without repute in the columns of the *Gardeners' Chronicle*. "Particularly I refer to the issue for June 10, 1876, where special mention is made of him in connection with Mr. D. Pressly; otherwise in your columns his name will be found in connection with new and rare Ferns and plants grown here. The name and character of the man are well worthy of record." The following slight memoir is taken from a colonial paper:—

Mr. Matthews was born in the year 1812, at Turfhill, Old Deer, Aberdeenshire. He was the son of a

farmer, and after leaving school was engaged in farm work until about eighteen years old, when the natural bent of his mind toward horticultural pursuits strongly asserted itself, and he was apprenticed as a gardener to the laird of the estate of Nethermuir. Having worked several years as foreman and head gardener in Scotland and Ireland, he left the latter country for New Zealand.

He arrived in Otago by the ship *Lady Nugent* in March, 1850, and was for some years gardener to James MacAndrew, Esq. In 1856 he acquired the property now known as Hawthorn Hill, Mornington, where he carried on the nursery business upon a more extensive scale than was possible in the city, and where he resided for about sixteen years prior to his decease. Like most of the early settlers, he was ready to grant assistance and advice to new arrivals, and not a few owe their first knowledge of colonial life to Mr. Matthews' instruction. Throughout his career he was distinguished for industry, ceaseless energy, and enthusiastic devotion to the higher branches of horticulture. His love for rare and fine plants was an absorbing passion, and in order to gratify his *penchant* in this direction he visited most of the great public gardens, as well as many famous nurseries and gentlemen's seats throughout the United Kingdom.

Mr. Matthews was indeed one of the worthies of the old settlement ot Otago, whose number is rapidly becoming very small. He passed peacefully away on September 25, beloved and respected by a very numerous circle of friends scattered throughout Otago and Southland. *Otago Daily Times, Oct.* 9.

—— We regret to record the death of Mr. STEPHEN BROWN, of the Whitecross Nurseries, who had been a resident of Weston for the past sixteen years. It appears that on Saturday morning Mr. Brown was coming downstairs carrying his business books in his arms, when, it is surmised, his foot slipped and he fell heavily against the wall, the fall completely stunning him. After regaining consciousness for a short time he relapsed into a state of coma and died on Tuesday evening.

Enquiries.

"He that questioneth much shall learn much."—BACON.

BOUVARDIAS.—*A Young Foreman* inquires the reason why Bouvardia Humboldti is losing its leaves, whilst B. elegans, B. Alfred Neuner, and B. candidissima retain theirs? They were all grown in a cool frame in September, when they were removed to a Pelargonium-house, and a month ago into an intermediate-house. The leaves began to drop whilst in the Pelargonium-house, and have gone from bad to worse.

LOBELIA OUT OF CULTIVATION.—Can any of your readers help me to obtain a plant of Erinus Lychnidea, introduced, I believe, about a hundred years ago from the Cape, by Kennedy & Lee, and far too charming to be lost sight of? *B. H. Brockbank.*

Answers to Correspondents.

BLACK ALICANTE AND LADY DOWNE'S GRAPES: *T. T.* As the one bears fruit and the other does not, and you give not an iota of other information, how can we tell the reason?

BOOKS: *R. P.* Read *Plant Life*, by Dr. Masters, and the *Chemistry of the Farm*, by Warrington, both published by Bradbury, Agnew & Co., at a few shillings. They will give you the information you want. Hogg's *Fruit Manual* is published at 171, Fleet Street, price 16*s.*

ERRATUM.—In our report of the Birmingham show (p. 696) it is stated that Pines and Grapes were excluded from the collections of fruit, whereas they were the leading feature in all of them. The 1st prize collection consisted of one Pine, black and white Grapes (a dish of each), Pears, Apples, and Raspberries. The other collections were similar to it.

FLOWER-POT, &C.: *John Knight.* We have received no such articles as you mention. It is never our practice to allow people to pay for the woodcuts we insert in the editorial columns. In the advertising columns you can do as you like.

IMPORTATION OF PLANTS INTO GERMANY: *W. Green.* The regulations sanctioned by the Imperial Government of Germany are now well known. They were instituted to prevent the introduction of Phylloxera into the country, and being vexatious, as well as being practically useless for the purpose, are justly regarded by our traders as hindrances to commerce. You can only comply with every regulation or find customers in other lands. There is no redress.

MUSCAT AND GROS COLMAR GRAPES: *T. T.* The sample of Muscats were as badly shanked as any we ever saw; and the other kind was as strong an evidence of bad cultivation as has come under our notice. The foliage, and even the shoots, were greatly devoured by thrips, which swarmed on them.

MUSHROOMS: *An Amateur.* The best of spawn will require from six to eight weeks before Mushrooms push through, and if, as you tell us, the spawn was twelve months old, you are likely to have to wait in vain. It is waste of materials and labour to make use of such old spawn. Get quite fresh spawn. Buy Wright's *Mushrooms for the Million*, at the office of the *Journal of Horticulture*, Fleet Street—the price is 6*d.*—and make a fresh start, and you must succeed.

NAMES OF FRUIT: *W. Rolles Fryer.* 1, Dumelow's Seedling; 3, Cox's Orange Pippin; 4, small King of the Pippins.—*G. A. A. P.* 1, Duchesse d'Angoulême; 4, Cox's Orange Pippin; 5, Scarlet Nonpareil.—*C. B.* 1, Brownlee's Russet; 3, Scorpion, probably; 4, Dutch Mignonne.—*H. H. H.* Not recognised—some local seedling of no value.—*F. B. S.* 1, Tower of Glamis, fine specimen; 2, Waltham Abbey Seedling, more coloured than usual; 3, Bess Pool, probably; 4, Striped Beefing; 5, Fearn's Pippin; 6, Golden Pearmain.

NAMES OF PLANTS: *Beddome.* Plant from Andes of South America, Dolichos Lablab.—*D.* Hakea laurina.—*R. Gray.* The plant is Crinum giganteum, and described in our columns in 1881, vol. xvi., p. 760.—*H. W. W.* Chrysanthemum segetum.—*Joseph Murdoch.* Sericographis Ghiesbreghtii.

PAMPAS PLUMES. Mr. Slaymaker, Covent Garden, sends for our inspection some of the finest plumes of Pampas grass that we have seen. The panicles are 3 feet in length, densely furnished and perfectly bleached.

PRIMULA BLOOMS: *Primula.* The flowers were pretty, but very similar to other older kinds—neither better nor worse. It would be better if you showed them at the Royal Horticultural Society's shows, and obtained, if you could, a Certificate of Merit.

SYNOPTICAL FLORA OF EUROPE: *C. W. D.* There is no book giving descriptions. Nyman's *Conspectus Floræ Europææ*, with the suppliment, is excellent, but it is only a list of names, synonyms, and localities.

WORMS IN A RHODODENDRON BED: *A Young Foreman.* Watering with clear lime-water would bring them to the surface, and should not injure the plants.

CATALOGUES RECEIVED.

HAAGE & SCHMIDT, Erfurt—Novelties of Seeds for 1885.

PUTZ & ROES, Erfurt, Prussia—Choice Flower Seeds and Trade Seed Lists.

HOWDEN & CO., Inverness—General Autumn List of Plants, &c.

HOGG & WOOD, Coldstream and Dunse—Forest Trees, Conifers, Shrubs, and Fruit Trees.

W. FELL & CO., Hexham—Forest Trees and Shrubs, Conifers, Fruit Trees, &c.

BOTANIC GARDENS, Cape Town—Bulbous Roots, and other Plants for Export.

CLARKE BROTHERS & CO., Carlisle—Forest and Ornamental Trees.

COMMUNICATIONS RECEIVED.—A. S. W. (a cut is in preparation, and will be published when ready).—A. W.—J. S.—J. W. P.—A. F. B.—J. Edwards.—P. L. S.—Cestrian.—J. G. B.—W. Swan.—J. D.—W. W.—J. S.—John Jackson.—Price's Patent Candle Co.—S. W.—C. A. M. C.—I. R.—C. L.—R. D.—H. W. W.—C. W. S.—W. E. G. (many thanks; not distinguishable from I. latifolia).—W. F.—M. D.—E. B., Paris (no room).—P. J.—P. McO., Cape Town.—L. R., Munich.—Max Hobein, Schwerin.

DIED, on November 30, at his residence, The Rose Nurseries, Beeston, Notts, Mr. HENRY FRETTINGHAM, in his sixty-sixth year.

Markets.

COVENT GARDEN, December 4.

HEAVY consignments of St. Michael Pines arriving, and prices will be lower. Grapes firmer, with an upward tendency. Kent Cobs better. Business very quiet. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Lemons, per case	12 0-	18 0
— Nova Scotia and Canadian, barrel	10 0-	24 0	Pine-apples, Eng., lb.	2 0-	..
Cobs, per 100 lb.	60 0-	62 6	— St. Michael, each	4 0-	10 0
Grapes, per lb.	1 0-	3 0	Pears, French, doz.	1 6-	3 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	4 0-	6 0	Lettuces, Cabbage, per dozen	1 6-	..
Beans, French, lb.	0 6-	..	— Cos, each	0 2-	..
Beet, per doz.	1 0-	..	Mint, green, bunch	0 9-	..
Cabbages, per doz.	1 6-	2 0	Mushrooms, p. baskt.	1 0-	2 0
Carrots, per bun.	0 6-	..	Onions, per bushel	4 0-	..
Cauliflowers, English, dozen	1 0-	2 6	— Spring, per bun.	0 6-	..
Celeriac, per root	0 4-	..	Parsley, per bunch	0 4-	..
Celery, per bundle	1 6-	2 6	Radishes, per doz.	1 6-	..
Cucumbers, each	0 6-	1 0	Salsify, per bund.	1 0-	..
Endive, English, per dozen	1 0-	..	Seakale, per punnet	1 6-	2 0
Garlic, per lb.	0 6-	..	Small salading, per punnet	0 4-	..
Herbs, per bunch	0 2-	0 4	Spinach, per bushel	2 0-	..
Horse Radish, bun.	3 0-	4 0	Tomatos, per lb.	0 6-	1 0
			Turnips, bun.	0 5-	..

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.* Champions, 45*s.* to 60*s.* per ton. Trade very quiet.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0	Lily-of-Valley, spray	0 6-	1 0
Arum Lilies, 12 blms.	4 0-	6 0	Marguerites, 12 bun.	3 0-	6 0
Azalea, 12 sprays	1 0-	1 6	Mignonette, 12 bun.	1 0-	4 0
Bouvardias, per bun.	0 9-	1 0	Pelargoniums, per 12 sprays	1 0-	2 0
Camellias, per doz.	2 0-	6 0	— scarlet, 12 sprays	0 6-	0 9
Carnations, 12 blms.	1 0-	2 0	Primula, double, bun.	1 0-	1 6
Chrysanth., 12 bun.	2 0-	6 0	Roses (indoor), doz.	2 0-	6 0
— large, 12 blooms	0 6-	2 0	— French, per doz.	0 9-	1 6
Cyclamen, 12 blooms	0 3-	0 6	Tropæolum, 12 bun.	1 0-	2 0
Eucharis, per doz.	4 0-	6 0	Tuberoses, per doz.	1 0-	1 6
Euphorbia jacquiniflora, 12 sprays	1 0-	2 0	Violets, 12 bun.	1 0-	1 6
Gardenias, 12 blms.	9 0-	18 0	— French, bunch	1 6-	2 0
Heliotropes, 12 sp.	0 6-	1 0	— Parme, French, per bunch	5 0-	7 0
Lapageria, white, 12 blooms	2 0-	3 0	Wallflower, 12 bun.	4 0-	6 0
— red, 12 blooms	1 0-	2 0	White Jasmine, per bunch	0 6-	1 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0	Ficus elastica, each	1 6-	7 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Foliage Plants, various, each	2 0-	10 0
— (common), dozen	6 0-	12 0	Hyacinths, Roman, 12 sprays	1 0-	2 0
Begonias, per doz.	4 0-	12 0	Marguerite Daisy, per dozen	8 0-	15 0
Bouvardia, dozen	9 0-	18 0	Myrtles, per doz.	6 0-	12 0
Chrysanth., dozen	4 0-	9 0	Narcissus, paper white, 12 sprays	2 6-	3 0
Cyperus, per dozen	4 0-	12 0	Palms in variety, each	2 6-	21 0
Dracæna terminalis, per dozen	30 0-	60 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
— viridis, per doz.	12 0-	24 0	Primula sinensis, per dozen	4 0-	6 0
Erica, various, doz.	9 0-	18 0	Solanums, dozen	9 0-	12 0
Euonymus, various, per dozen	6 0-	18 0	Tulips, per dozen	2 0-	..
Evergreens, in var., per dozen	6 0-	24 0			
Ferns, in variety, per dozen	4 0-	18 0			

SEEDS.

LONDON: *December* 3.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that the seed market to-day was thinly attended, and no novel feature, either of interest or importance, showed itself. The cable quotations received to-day exhibit a further drop in the value of American red Clover seed; for English samples the tendency is also downwards. There is nothing doing just now in either Alsike, white Clover, or Trefoil. Blue Peas and Haricot Beans are held on former terms; of Hemp seed the arrivals are large, and prices are consequently easier. Canary seed meets a slow sale.

CORN.

At Mark Lane on Monday the continued light imports into London assisted prices, and at the close Wheat was quoted 1*s.* higher on the week. A similar advance was noted on low-priced New Zealand Wheats, and a partial rise of 6*d.* on other foreign white descriptions. Flour was steadier, but not dearer. Barley ruled firm, and grinding descriptions were 3*d.* dearer. Oats were 3*d.* to 6*d.* higher than on the previous Monday, with a steady demand. Maize was scarce, and showed a rise of 6*d.* for the week.—On Wednesday the mild weather caused a little loss of tone, but values of Wheat were in all cases upheld. Flour was slow; Barley was quiet. No change occurred in the value of Beans or Peas, which met a moderate enquiry. Oats maintained late value, but buyers acted with rather more reserve. Maize, from scarcity, was firm.—Average prices of corn for the week ending Nov. 29:—Wheat, 30*s.* 5*d.*; Barley, 31*s.* 3*d.*; Oats, 19*s.* 4*d.* For the corresponding period last year:—Wheat, 40*s.* 2*d.*; Barley, 32*s.* 6*d.*; Oats, 19*s.* 5*d.*

HAY.

Tuesday's Whitechapel Market report states that supplies were very small in consequence of the rough weather. Quotations:—Clover, prime, 95*s.* to 108*s.*; inferior, 46*s.* to 75*s.*; prime second cut, 90*s.* to 108*s.*; hay, prime, 80*s.* to 90*s.*; inferior, 30*s.* to 65*s.*; and straw, 28*s.* to 34*s.* per load.—On Thursday there was a short supply. The trade was dull, and prices were unaltered.—The Cumberland Market report states that there was rather a short supply on offer, but trade was very dull owing to the weather. Quotations:—Clover, best, 95*s.* to 105*s.*; inferior, 50*s.* to 70*s.*; meadow hay, best, 76*s.* to 84*s.*; inferior, 50*s.* to 70*s.*; and straw, 24*s.* to 32*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are more than adequate to demand, and rates are in some cases easier except for best samples. Quotations:—Kent Regents, 76*s.* to 80*s.*; Scotch ditto, 85*s.* to 100*s.*; Essex Shaws, 45*s.* to 60*s.*; Victorias, 70*s.* to 80*s.*; Magnum Bonums, 50*s.* to 70*s.*; Champions, 50*s.* to 60*s.*; and French, 40*s.* to 50*s.* per ton.—The imports into London last week consisted of 400 bags from Bremen, 55 from Hamburg, 400 from Antwerp, 14 from Boulogne, and 10 from Holland.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Bebside West Hartley, 14*s.* 9*d.*; Walls End—Harton, 16*s.*; Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.*; Hetton Lyons, 16*s.*; Lambton, 17*s.* 6*d.*; Wear, 16*s.*; Hulam, 16*s.* 3*d.*; East Hartlepool, 17*s.* 3*d.*; South Hartlepool, 16*s.* 3*d.*; Tees, 18*s.* 3*d.*; Binchester, 16*s.*; Hartlepool, 17*s.*

Government Stock.—Consols closed on Monday and Tuesday at 99 to 99⅛ for delivery, and 99⅛ to 99⅜ for the account. Wednesday's closing prices were 99⅛ to 99⅜ for both delivery and the account. The final quotations of Thursday were 99⅛ to 99⅜ for deliaery, and 99⅜ to 99⅝ for the account. These quotations are ex div.

SPECIAL NOTICE.

THE

GARDENERS' CHRONICLE

FOR

SATURDAY, JANUARY 3, 1885,

WILL CONTAIN A BEAUTIFULLY

COLOURED ALMANAC

(18 inches by 13 inches),

FROM AN ORIGINAL DESIGN.

PRICE FIVEPENCE; POST-FREE, FIVEPENCE-HALFPENNY;

OR WITH

ALMANAC MOUNTED ON OAK ROLLERS,

READY TO BE HUNG UP, AND ENCLOSED IN CASE,

SEVENPENCE; POST-FREE, EIGHTPENCE-HALFPENNY.

Purchasers are specially recommended to order the Almanac in a Case,

TO PREVENT INJURY FROM FOLDING.

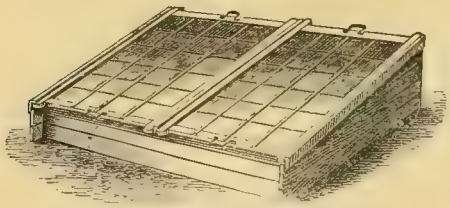
The Publisher cannot be responsible for injury to the Almanac unless it is so protected.

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As a large Extra Sale of this Number is guaranteed, it will be a very valuable medium for Advertisements.

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Cucumber Frames.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices, delivered to any station in England:—

		£ s. d.
2-light frame, 8 feet by 6 feet	Packing	3 10 0
3-light frame, 12 feet by 6 feet	Cases free	5 5 0
6-light frame, 24 feet by 6 feet		10 0 0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

R. HALLIDAY AND CO., Hothouse Builders and Engineers, Royal Horticultural Works, Middleton, Manchester.

DEANE & CO.'S CONSERVATORIES & GREENHOUSES.



The prices given include ERECTING COMPLETE, with all necessary brickwork, &c., within 15 miles of London.

SPAN-ROOF CONSERVATORY.

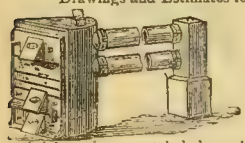
Size....	15 ft. by 9 ft.	..	20 ft. by 12 ft.	..	25 ft. by 15 ft.
Price ..	£30.	..	£42 10s.	..	£58.

LEAN-TO GREENHOUSE.

Size,	10 ft. by 6 ft.,	12 ft. by 8 ft.,	15 ft. by 10 ft.,	20 ft. by 12 ft.
Price,	£19 10s.	£23 10s.	£29 10s.	£40.

Proportionate prices for other sizes and at any distance.

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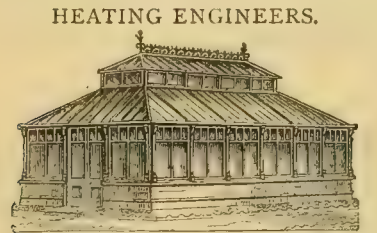
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Price of Apparatus for houses of any size on application.

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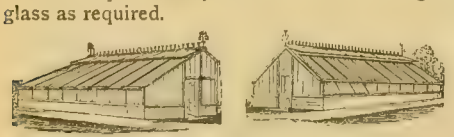
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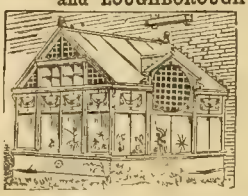
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Heating Apparatus.

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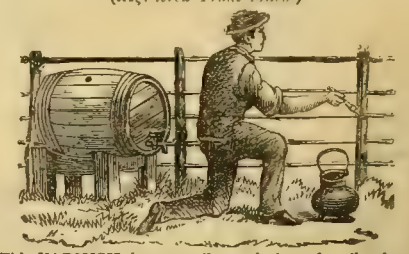
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Sold in Casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon carriage paid to any Station in the Kingdom.

UNSOLICITED TESTIMONIAL.

"*Piercefield Park, June 21*, 1876.—Sirs,—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we every had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX.

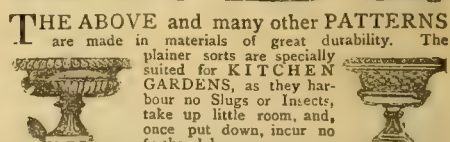
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H. & S.'s Varnish has been an article of common use on most of the large estates in the kingdom for upwards of thirty years; and their constantly increasing trade in it, and the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Registered Trade Mark as above, without which none is genuine.

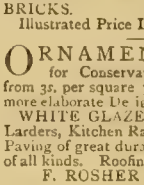
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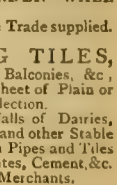
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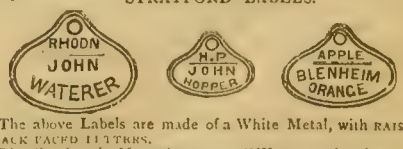
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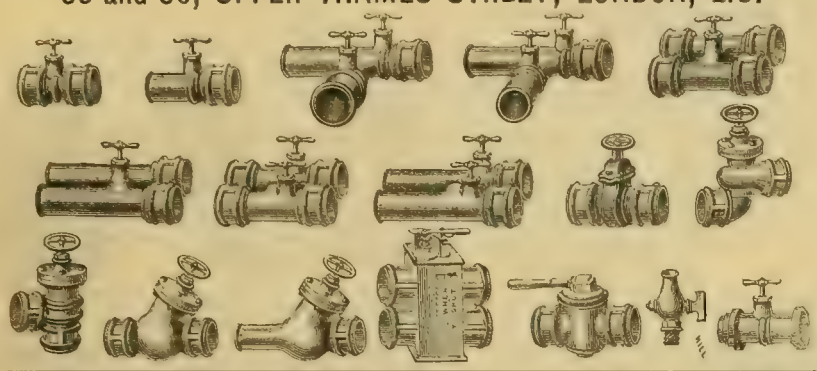
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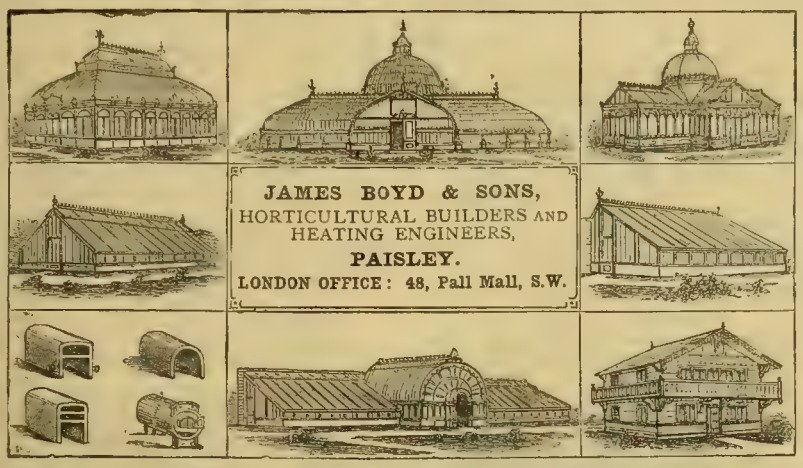
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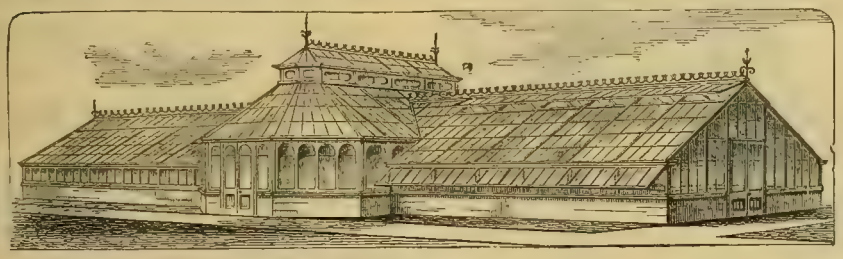


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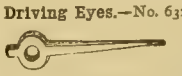


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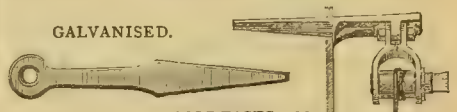
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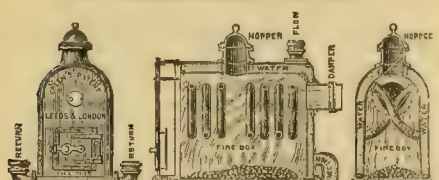
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The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c., were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

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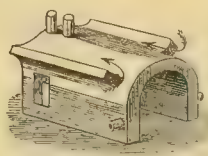


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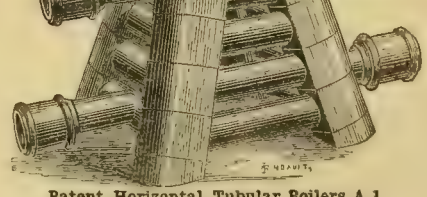
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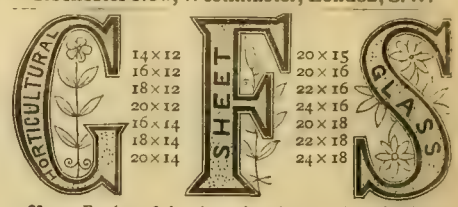
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THE GARDEN ANNUAL for 1885.
Contains a Complete List of over 7250 Country Seats, Occupiers, and Gardeners in the United Kingdom ; over 800 New Names have been added to the Gardeners' List during the past season. There is also the best Trade List published, corrected to date. Price 1s., by post 1s. 3d.
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H. CANNELL AND SONS wish to meet with an intelligent and experienced young man as GENERAL PROPAGATOR.—None need apply but those who wish to settle down and can show that they are of good character.—Swanley, Kent.

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JOURNEYMAN ; age 20.—EDMUND WILLIAMS, The Gardens, Peasmarsh Place, Sussex, will be glad to recommend a steady, energetic young man, who has served three years as an apprentice here. Bothy preferred.—Address as above.

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The haulm is of a peculiar light colour, only 2 feet in height, the pods of a lively green and well filled, and is the heaviest cropper for an early variety we have ever seen. The seed is blue, and similar in appearance to the "Kentish Invicta," but it is hardier and even earlier than that excellent variety.

It was selected by us with great pains about eight years ago from a new kind raised by Mr. Laxton, and sent out under the name of **Harbinger**, but after growing the latter we found it lacked that quality which is most essential to all early Peas, viz., a sound constitution, and therefore went quickly out of cultivation. From close observation we found that there were some among it which might be improved by careful selection and good cultivation; and, having set to work, can say, without hesitation, we have succeeded in producing the hardiest, most prolific, and best early Pea that has ever been sent out, and which we have thought well to name "**Harrisons' Early Eclipse.**" **Harbinger** is described by the Royal Horticultural Society as being the earliest of all Peas, and was raised by a cross between Dillestone's Early and Alpha, the height of the haulm 2 to 2½ feet, producing seven to eight pods tightly filled with six Peas, which are of an excellent flavour. In the experiment of the year it was sown on February 23, the first flower opened on May 9, the plants were in full bloom May 15, slats appeared May 21, and the crop was fit for use on June 6. In that year it received a First-class Certificate from the Society. The same Society reports also that though Kentish Invicta resembles Harbinger, it is *seven days later*. Since then Mr. Laxton has sent out another new Pea, named Laxton's Earliest of All, but on growing this and Kentish Invicta side by side with **Early Eclipse** for the last two years, we find that Early Eclipse possesses a much better constitution, consequently is hardier. This is also the opinion of Mr. Laxton, who is the raiser of both varieties. From the above facts, and the numerous testimonials received, we say that **Early Eclipse Pea** is quite a distinct variety, and has no origin with either Kentish Invicta or Earliest of All, as some people seem to presume it has.

Price, per Bushel, 26s.; per Quart, 1s. 6d.; free by post for 2s.

The following are extracts from Letters received respecting Harrisons' New Early Eclipse Pea, showing its success and superiority over all other early kinds in nearly every county in England. We shall be pleased to give the name and address of any of the undermentioned to Customers requiring the same for reference:—

BEDFORDSHIRE.—"Your new Early Eclipse Pea has given the greatest satisfaction to my customers who tried them last season; they proved to be exceedingly early, very prolific, of excellent quality, and quite distinct. Shall require a larger quantity for the coming season, but will let you know early."

BERKSHIRE.—"The Early Eclipse Peas I had from you last yea were the earliest I have ever grown, quite ten days earlier than Kentish Invicta. They were very productive, the pods well filled, and good flavoured."

DERBYSHIRE.—"Your new Early Eclipse Pea is a very fine one, worthy to be grown by all Market Gardeners."

DEVONSHIRE.—"I liked your Eclipse Pea very much. With me they were the earliest of all, bearing a large quantity of pods which were tightly filled with Peas of fine quality."

ESSEX.—"The Early Eclipse Pea with me was very good indeed, being a good cropper and very early; shall require more when ready."

ESSEX.—"I find your new Early Eclipse Pea an early and good cropping variety. When you are quoting the price per bushel for the coming year, I should like two quarters of the same stock."

GLOUCESTERSHIRE.—"I am pleased to speak of your new Early Eclipse Pea in the highest terms, and I consider that it should rank A 1 as a quick grower, continual bearer, combined with excellent quality."

GLOUCESTERSHIRE.—"I like your Early Eclipse Pea very much; they suit this soil well. They are a remarkably heavy cropper, and a week or nine days earlier than Improved Sangster's No. 1."

GLOUCESTERSHIRE.—"I find your new Early Pea Eclipse to be very early and a good cropper; shall require more for next season."

GLOUCESTERSHIRE.—"I could not wish for anything better than your Early Eclipse Pea, as they fill quickly, are very true, and I think the best early Pea yet introduced."

GLOUCESTERSHIRE.—"I can speak very highly of your Early Eclipse Pea. What I had from you last year did exceedingly well in every respect, and shall be glad to have more of them at an early date."

GLOUCESTERSHIRE.—"I consider your Early Eclipse Pea an excellent one, and a good cropper."

KENT.—"The Early Eclipse you sent me I found to be quite distinct from any other variety, being much earlier and a heavier cropper. I shall not be without it in the future. My salesman in Covent Garden market wished me not to send him any other variety till it was finished, as he could make a much higher price of them than the Kentish Invicta."

LANCASHIRE.—"I consider your new Early Eclipse to be the best early Pea I have ever grown, both for earliness, size of pods, and appearance."

LEICESTERSHIRE.—"The new Early Eclipse Pea I had from you last year were the earliest and best I have ever grown, and were very true. I shall sow the same sort again this coming year."

LEICESTERSHIRE.—"Harrison's Early Eclipse Pea turned out very satisfactory, in fact it proved to be the earliest variety I have ever seen, also very prolific and of first-class flavour."

LINCOLNSHIRE.—"I was well pleased with your Early Eclipse Pea last year. I found it very early, prolific, and of splendid flavour. I sowed it on the same date as Day's Sunrise; they grew side by side, but Early Eclipse was ready to pull more than a fortnight before Sunrise. I then decided to grow nothing else for an early Pea."

LINCOLNSHIRE.—"Respecting your Early Eclipse Pea, it has a true name. In my opinion it has eclipsed all other early Peas; it is the earliest and most productive, and stands the winter better than any early Pea I know of."

MIDDLESEX.—"Your Early Eclipse is all that can be desired for an early Pea."

NOTTINGHAMSHIRE.—"We are glad to inform you that the new Early Eclipse Pea you sent us last season gave every satisfaction."

NOTTINGHAMSHIRE.—"I liked the new Early Eclipse Peas I had from you last year very much. I sowed them side by side with Sangster's Improved No. 1 on the same day, but the Eclipse was ready for pulling just a week before, and a bushel of them made me double the money as a bushel of Sangster's."

NOTTINGHAMSHIRE.—"Your Early Eclipse Peas were about ten days earlier than Dickson's First and Best, and they suited me better than any early Peas I have ever had. Will send you an order in the spring."

NOTTINGHAMSHIRE.—"I grew some of your new Early Eclipse Peas, which I liked very much indeed. They are very forward. I grew them side by side with Kentish Invicta, and they were eight or ten days earlier, which is a deal for an early market."

SOMERSETSHIRE.—"Your Early Eclipse Peas I can fully recommend, as they have proved to turn out well for me."

STAFFORDSHIRE.—"I was well pleased with the Early Eclipse Peas I had from you last year. It is very early, and one of the very best early market Peas I have seen. What is your price per bushel for next season?"

SURREY.—"I have great pleasure in testifying to the excellence of the new Early Eclipse Pea, it having turned out to be the finest early Pea I have ever grown. The whole of the crop from the seed you sent I must say turned out well, and gave every satisfaction."

WARWICKSHIRE.—"I had some of your Early Eclipse Peas sown last autumn, and gathered some of them on May 23, cut in the open field. They were the first picked in the county of Warwick, and I have been gathering them up to now (June 14). I consider them the finest and best early Pea grown. My customer would not believe they were English, but I showed him them growing in the field. I hope to plant an acre next autum."

WILTSHIRE.—"My customers have no doubt of your new Early Eclipse Pea being a good thing and superior to Kentish Invicta. We lay high here and the cold is severe, but in sheltered situations it has done splendidly and given great satisfaction."

WORCESTERSHIRE.—"I was very pleased with your new Early Eclipse Peas. I planted the bushel you sent me on about half an acre of very nice land. I commenced picking ten days before any other kind, and the first lot I sent away realized 12s. per pot of 40 lb. I picked altogether off the half acre over 80 pots."

WORCESTERSHIRE.—"I have from long experience a dread of novelties, but on a recommendation had one peck of your new Early Eclipse Pea as a trial. They were planted late on land without manure; they were very regular, I did not see a sport in them; I picked 20 pots of 40 lb. each and they were the earliest Peas I picked. I can venture to say it is the best early Pea of its class. You may send me two bushels for next season."

WORCESTERSHIRE.—"Your Early Eclipse Pea which you sent me last year gave every satisfaction. I planted various sorts but none equal to the Eclipse, both for podding and quickness. I can highly recommend them to anyone."

WORCESTERSHIRE.—"The Early Eclipse Pea I found to be very good and excellent croppers."

WORCESTERSHIRE.—"I like your Early Eclipse Pea very much. Please send me another bushel."

WORCESTERSHIRE.—"Your Early Eclipse Pea did well with me last season, better than anything else I planted."

YORKSHIRE.—"I like your new Early Eclipse Pea very much, and think they are a very good Pea for market gardening purposes."

YORKSHIRE.—"Your new Early Eclipse Peas gave me every satisfaction; I had a splendid crop."

YORKSHIRE.—"The new Early Eclipse Pea is an excellent one. I consider them the best early variety. Those I got from you did remarkably well, the haulm being covered from the top to the bottom."

YORKSHIRE.—"I think it my duty to inform you that your Early Eclipse Peas were the best, earliest, and most prolific Pea I have had for the last twenty years. I have never had or seen any to equal them for size and quality. I shall require four bushels for the next season."

YORKSHIRE.—"I tried your new Early Eclipse Pea alongside five of the best sorts, and it was ready nearly fourteen days before the others. I am very well pleased with it, and shall recommend it all I can."

SCOTLAND.—"One of our customers informs us that your Early Eclipse Pea was the best early Pea he had ever seen."

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HARRISON & SONS, SEED GROWERS, LEICESTER.

Editorial Communications should be addressed to "The Editor:" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 6, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 572.—Vol. XXII. {New Series.} SATURDAY, DECEMBER 13, 1884. {Registered at the General Post-office as a Newspaper. WITH SUPPLEMENT.} Price 5d. POST-FREE, 5½d.

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THE GARDENERS' CHRONICLE,
Volume XXI., JANUARY to JUNE, 1884.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

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SHEPPERTON and DISTRICT FLOWER SHOW, including all places within a radius of 6 miles from Shepperton Church.
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WISE AND RIDES, Covent Garden, W.C., have now a demand for Tuberoses, Arum Lilies, White Bouvardias, good Roses, Chrysanthemums, &c.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Tomatos, Cucumbers, Gros Colmar, Alicante, and Muscat Grapes.

WANTED, ARUM LILIES, EUCHARIS, CAMELLIAS, GARDENIAS, TUBEROSES, CHRISTMAS ROSES, CHRYSANTHEMUM, and other CHOICE CUT FLOWERS. Large Consignments specially Wanted for December 22.
WILLIAM DENMAN, Salesman and Horticultural Agent, Covent Garden Market, London, W.C.

WANTED, TREE BOX, 1½ to 2 feet ; must be healthy and well rooted. State price per 100 or 1000 to
GEORGE STANTON, Park Place, Henley-on-Thames.

WANTED, CUT EVERGREENS, for Christmas, consisting of Laurel, Box, Variegated and Green Holly, berried, &c. Send price per cwt. or ton to WM. CUTLER, Seedsman, Covered Market, Leeds, Yorks.

WANTED, Three EVERGREEN OAKS, transplanted trees, from 10 to 14 feet high and 4 to 5 feet through. One must be at least 13 feet.
R. W., 47, Gutter Lane, E.C.

WANTED, three large, trained, Pine-apple NECTARINES. State size and price to THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard, Garston, Liverpool.

English Oak, Spanish Chestnut.
H. LANE AND SON have a large quantity of the above to offer, fine clean grown stuff, 2 to 3 feet, 3 to 4 feet, and 4 to 5 feet, and other FOREST TREES.
The Nurseries, Berkhamstead, Herts.

SPECIMEN RHODODENDRONS, 8 to 10 feet, and as much through, the property of a gentleman. Will be sold cheap. Apply to
JOHN LAING AND CO., Forest Hill, London, S.E.

NEW CHRYSANTHEMUMS.—Orders are now being booked for the New Varieties of 1884 at 10s. per doz. ; Cuttings, 1883 varieties, 5s. per doz. ; best Old Varieties, 1s. 6d. per doz. Post-free for P.O.O.
R. OWEN, Floral Nurseries, Maidenhead.

Roses.
H. LANE AND SON have a fine stock of extra strong Standards to offer, at 15s. per dozen, or purchaser's selection at 18s. per dozen ; Half-Standards at 12s. per dozen ; Dwarfs, 9s. and 10s. per dozen. Descriptive CATALOGUE free.
The Nurseries, Berkhamstead, Herts.

ORNAMENTAL TREES and SHRUBS, —Conifers, Clematis, and other Climbing Plants. Our new CATALOGUE of the above is now ready, and will be sent free on Application.
IRELAND AND THOMSON, Edinburgh.

STRONG MANETTI STOCKS, fit for immediate working, 25s. per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Dedemsvaart, by Zwolle, Holland.

Cut Flowers.
ROSES, CARNATIONS, and other Flowers. Prices and conditions to be had on application to C. KELLER AND CO., Florists, Beaulieu, near Nice, France.

LARCH.—1,000,000 to offer, Cheap, lifted last Spring. All strong, with good roots : 3 to 4 feet, 16s. ; 4 to 5 feet, 18s. ; 5 feet, 20s. per 1000. Apply
FRANCIS BELL, Nurseries, Easingwold.—Nov. 8, 1884.

"GLOIRE DE NANCY" CARNATION, the best white Clove in cultivation, 60s. per 100, 8s. per dozen. MRS. SINKINS, the best white Clove Pink, 30s. per 100, 4s. per dozen. OLD CRIMSON CLOVE, 30s. per 100, 4s. per dozen. All strong plants, established in pots.
POUNCE'S Nursery, Hendon, near London, N.W.

BARR'S DAFFODILS. Now is the time to plant these.
Illustrated DAFFODIL LIST free on application.
BARR AND SON, 12, King Street, Covent Garden, W.C.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

Tea Roses.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

To Osier Growers, Basket Makers, and Nurserymen.
BRADFORD AND SONS, Yeovil, Somerset, now Grow and Cut yearly 100 acres and upwards of OSIER BEDS, and will quote prices to the Trade, according to quantity required.
Samples and prices of Osier "Sets" on application.

DAHLIA TUBERS.—All the best varieties of the following sections :—Show, Fancy, and Pompons, Singles ; also Cactus and Semi-Cactus varieties. Special offer may be had upon application to
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

Autumn Planting.
THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, have, as usual, an extensive Stock of healthy, well grown seedling and transplanted FOREST and ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., special offers of which will be made on apolication.

FRUIT TREES for SALE.—Favourite Cluster DAMSON, Victoria Bush and New Orleans PLUMS, 10,000 Lad and Bob GOOSEBERRIES, Black and Red CURRANTS, COB TREES, 20,000 true DAMSON SPAWN, 3 to 4 feet.
A. SEAR, Mr. Skinner, East Farleigh, Kent.

Grape Vines and Pansies.
JOHN DOWNIE begs to intimate that he has now for Sale very strong Planting and Fruiting Canes, at from 5s. to 15s. each ; also Show and Fancy Pansies, from one of the finest collections in cultivation, at 4s., 6s., 9s., and 12s. per dozen.
144, Princes Street, Edinburgh.

WELL RIPENED GRAPE VINES.—A few hundred grand Canes for Fruiting and Planting, in nine leading kinds, are offered at very low prices. SEAKALE, selected for Forcing. FRUIT TREES and ROSES. LIST on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

SALES BY AUCTION.

Monday Next—(Sale No. 6796)
BULBS from HOLLAND, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 15, at half-past 12 o'Clock precisely, an importation of first class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, GLADIOLI, LILIES, and other DUTCH BULBS in variety, also LILY of the VALLEY in crowns and clumps, SPIRÆA JAPONICA and PALMATA, DIELYTRA SPECTABILIS, &c.
On view morning of Sale, and Catalogues had

Wednesday Next—(Sale No 6798).
HARDY PLANTS and BULBS in variety.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 17, at half-past 12 o'Clock precisely, first-class Standard and Dwarf ROSES to name from well known French and English growers, Pyramid and Dwarf-trained FRUIT TREES of sorts, several thousand BEGONIAS, GLOXINIAS, and CALADIUMS, CARNATIONS, PICOTEES, DAISIES, and other BORDER PLANTS. Also several hundred lots of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, GLADIOLI, LILIUMS, and other DUTCH BULBS, &c.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6799)
3000 LILIUM AURATUM, from Japan, in fine condition.
200 TODEAS, TREE FERNS, &c., from New Zealand.
2000 TIGRIDIA GRANDIFLORA, fine roots.
100 LATANIAS, SEAFORTHIAS, and other Palms, &c.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 18.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6799.)
ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 18, a variety of good ESTABLISHED ORCHIDS, many of which are in flower, comprising a fine variety of Lælia purpurata, a grand exhibition plant of Cypripedium Maulei (true) with twenty-one spikes, Dendrobes and Saccolabiums of sorts, Odontoglossum pulchellum majus, Aërides purpurascens, and Masdevallias, Oncidiums, &c.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6799.)
FLOWERING ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 18, at half-past 12 o'Clock precisely, a choice COLLECTION of ORCHIDS in flower, comprising, amongst other fine things, a grand plant of Cattleya dolosa, with over thirty bulbs; Houllettia Brocklehurstiana, a grand specimen of Cypripedium Haynaldianum, &c.
On view morning of Sale, and Catalogues had.

Immense Importations from Japan.
15,000 LILIUM AURATUM.
2,500 LILIUM KRAMERI.
2,500 LILIUM LONGIFLORUM.
1,500 LILIUM THUNBERGIANUM.
1,000 LILIUM SPECIOSUM ROSEUM.
1,000 LILIUM SPECIOSUM ALBUM.
Also Fifty Cases, each containing a COLLECTION of LILIES, as follows:—Six Lilium speciosum roseum, six ditto album, twelve L. auratum, six L. species, six L. tigrinum, twelve ditto (double); twenty-four L. Thunbergianum, twelve L. longiflorum, and four L. Leichtlini.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, December 23, at half-past 12 o'Clock precisely.
On view morning of Sale, and Catalogues had.

Dutch Bulbs.—Monday Next.—Final Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, December 15, at half-past 11 o'Clock precisely, their last consignment of DUTCH BULBS for this season, comprising thousands of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other roots from Holland, lotted to suit large and small buyers. About 700 lots.
On view morning of Sale, and Catalogues had.

Tuesday and Wednesday Next.
IMPORTANT SALE of the entire COLLECTION of COOL ESTABLISHED ORCHIDS formed by the late J. S. Bockett, Esq., of The Hall, Stamford Hill, N.; Without Reserve.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from the Administratrix to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY and WEDNESDAY NEXT, December 16 and 17, at half-past 12 o'Clock precisely each day, the entire COLLECTION of COOL ESTABLISHED ORCHIDS, probably the grandest lot, both in regard to varieties and to superior cultivation, that have been submitted to the hammer for some few years past. The collection comprises:—

2500 ODONTOGLOSSUM ALEXANDRÆ,

in fine condition, and containing many superb varieties. Also may be mentioned, among other fine things:—

Trichopilia suavis alba	Odontoglossum blandum
Lælia anceps Dawsoni	,, Alexandræ fastuosum
Masdevallia Harryana, Bull's blood variety	,, ,, guttatum
,, Chelsoni	,, ,, excellens
Cypripedium vexillarium	,, mulus, Bockett's variety, part of original plant
,, albo purpureum	,, fine hybrid
Dendrobium Falconeri majus	,, Chestertoni (giant
Cœlogyne Lemoineana, Large plant	,, Andersonianum, fine
Epidendrum Imperator	,, polyxanthum, fine plants
	,, hebraicum, &c.

Also the Erections of Two GREENHOUSES, HOT-WATER PIPING, and capital BOILER.
The whole of the plants will be Sold Without Reserve, and none will be disposed of previously.
On view morning of Sale. Catalogues may be had of Mr. EBBAGE, the Head Gardener, or of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Important Sale of about 300 Choice Double Camellias and AZALEA INDICA, compact plants, 1 to 2 feet, thickly set with bloom-buds; 400 handsome Standard and other ROSES, selected FRUIT TREES, Hardy CONIFERÆ, EVERGREEN and DECIDUOUS SHRUBS, AMERICAN PLANTS, with ERICAS, DOUBLE PRIMULAS, DUTCH BULBS, LILIUM AURATUM, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION the above at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, December 16, at 12 o'Clock precisely.
On view the morning of Sale, Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Thursday Next.
15,000 LILIUM AURATUM, ROSES, and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, December 18, at half-past 12 o'clock precisely, 15,000 unusually fine and fresh Bulbs of LILIUM AURATUM, and Two Cases of special LILIES, just received from Japan; 600 Standard and other ROSES of the best sorts from an English nursery, PLANTS in variety from Belgium, 2000 Double African TUBEROSES, received direct; 1000 fine Berlin Crowns LILY of the VALLEY, MILLA BIFLORA, and extra fine imported Bulbs of LILIUM HUMBOLDTII, hardy English-grown LILIES, very large roots, and a variety of BULBS and PLANTS for the Garden and Greenhouse.
On view morning of Sale, and Catalogues had.

Thursday Next.—15,000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, December 18, at half-past 12 o'Clock precisely, 15,000 unusually fine and sound bulbs of LILIUM AURATUM, and Two Cases of special LILIES, just received from Japan. Several of the cases of auratum have been opened and not a single rotten bulb was found amongst them, the whole being particularly fresh.
On view morning of Sale, and Catalogues had.

Friday Next.—Very Valuable Importation.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, on FRIDAY NEXT, December 19, at half-past 12 o'Clock precisely, grand importations of ORCHIDS in specially selected specimens.
On view morning of Sale, and Catalogues had.

Friday Next.—Orchids from Rio.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT a very fine lot of Imported ORCHIDS in splendid condition, brought home by a gentleman from Rio, comprising Oncidium sarcodes, O. concolor, Lælia pumila, Burlingtonia venusta, Oncidium Marshallianum, and Sophronites grandiflora.
On view morning of Sale, and Catalogues had.

Orchids in Flower.—Special Sale.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have fixed their next Special Sale of Orchids in flower for TUESDAY, December 23. It is believed there will be a good demand for them for Christmas, and Messrs. P. & M. will be glad to receive notice of entries as soon as possible.

WANTED TO LEASE, about Five Acres of good GROUND for Nursery Work, near a Town. South Coast preferred. Full particulars to
J. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W. C.

WANTED TO RENT, a SMALL NURSERY, about seven or eight miles from Covent Garden, to consist of three or four Greenhouses, with Ground attached. Residence connected preferred, or must be obtainable near.
H. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a good GARDEN, with Glass-houses, Cottage, &c., on Lease.
H., The Vineries, Nightingale Road, Wood Green, N.

WANTED, a good NEST of SEED DRAWERS. State where to be seen, number, and price to
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

FOR SALE, a small FREEHOLD FARM, 17 Acres, situate in parishes of Mordeford and Woolhope. Immediate possession, if desired, or present tenant will remain if desired.
GEO. H. BARLOW, Auctioneer and Property Agent, Hereford.

TO BE DISPOSED OF, the Lease, Fixtures, Goodwill, &c., of an Old-established AGRICULTURAL SEED BUSINESS in the South Midlands. To a good business man, with a capital of about £1500, the above offers exceptional advantages.
For particulars apply to L. H. D., Messrs. Waite, Nash, Huggins & Co., 79, Southwark Street, London, S.E.

To Business Men with Capital.

TO BE LET, on LEASE, a small FARM, comprising good House and Buildings, Greenhouse, Hop-Kilns and Fowl-houses, with extensive Business in Bottled and Cask Cider, together with 44 Acres of most productive Orcharding and Hop Land; a few Acres of Tillage and Meadow Land. The Orcharding is the most noted for making prime and bottled Cider of any in Herefordshire. More land if required.
GEO. H. BARLOW, Auctioneer and Property Agent, Hereford.

To Cut Flower and Fruit Growers, and Florists.
Surrey, 37 miles from London, and within easy distance of Two Important Towns.

TO BE LET on LEASE, a compact and well-established NURSERY, comprising 5 Acres of Land, seven well built Greenhouses, detached Cottage and Sheds. Lease 19½ years, rent only £50. The houses are fully stocked with good saleable plants, and to effect a speedy sale the low price of £200 will be accepted for the Stock and Lease.
Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

PALMS.—Strong splendidly foliaged Latania borbonica and Seaforthia elegans, 12 inches high, 4s. per dozen; same kinds, 20 inches high, 20 for 20s. Sample plant, 1s. 3d., carriage paid.
COOMBS, 98, Stamford Hill, N.

TO BE SOLD, ASH, HAZEL, QUICKS, and Black CURRANT TREES (black Naples). All transplanted and good. Only wholesale customers need apply.
B. SLOCOCK, Upton Court Farm, Slough, Bucks.

COMTE DE BRAZZA, new Double White VIOLET. 500 nice stocky plants to dispose of, 30s. per 100, for Cash.
A. D. HEALEY, North Walsham, Norfolk.

For Sale.

SANGSTER'S No. 1 PEAS, all hand-picked.
For Sample and Price apply to
JOS. TOWERS, Sedgebrook, Grantham.

APPLE TREES.—About 200 Maiden Apple trees, containing seventeen new and good sorts; amongst them are Queen, Mr. Gladstone, Duchess of Oldenburg, and Domino, &c. Will take 15s. per dozen, or will sell bd. Apply to
J. TAYLOR, Post-office, Fordham, near Soham.

VIOLETS.—SWANLEY WHITE (syn. Count Brazza) and MARIE LOUISE. Plants in 5-inch pots, full of buds, 9s. per dozen; smaller, 7s. per dozen; from ground, 6s. per dozen. Rooted plants, by post, 2s. 6d. per dozen; cuttings, 9d. per dozen, the last two post free.
H. CANNELL AND SONS, The Home of Flowers, Swanley, Kent.

SEAKALE for Forcing—Superior selected large roots, 90s. per 1000. A remittance to accompany all orders.
ALFRED ATWOOD, Market Gardener, 50, Shillington Street, Battersea, S.W.

Lilies of the Valley.

T. JANNOCH has on hand, for immediate delivery, about 160,000 strong Berlin Crowns for Forcing. Sample and price on application for six stamps.
The Lily Nursery, Dersingham, Norfolk.

CUT FLOWERS.—Buy of the Growers. The Advertisers are now offering Roman HYACINTHS, EUPHORBIAS, POINSETTIAS, for Christmas; LILY of the VALLEY and TULIPS in sorts. Write for price to
TURNER BROS., Nurserymen and Florists, Green Hill Nursery, Allerton, Liverpool.

Rhododendrons.

IRELAND AND THOMSON have a magnificent collection of all the finest named varieties covered with flower-buds, also many thousands of Seedlings Hybrids and Ponticums. Samples and Prices on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

Forcing Asparagus.

R. AND G. NEAL beg to offer the above by the hundred or thousand (own growth, and transplanted last spring). Samples with Price on application. Also beg to call the attention of Nurserymen, Builders, and others to their exceptionally fine stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS.
The Nurseries, Wandsworth Common, S.W.

RARE AND BEAUTIFUL LILIES
AT LOW PRICES.

L. DALMATICUM the black Martagon, one of the most striking and at the same time free growing; two sizes, 1s. 6d. and 2s. 6d. each.
L. CARNIOLICUM, the orange-scarlet Martagon, a rare beauty; two sizes, 1s. and 1s. 6d. each.
L CANADENSE RUBRUM, an "aristocratic" beauty, 1s. and 1s. 6d. each.
L. HARRISII, the finest white Trumpet flower, for pots, in existence; three sizes, 1s., 1s. 6d. and 2s. 6d. each.
L. LONGIFLORUM, splendid white Trumpet, fragrant, and very hardy, 6d. each.
L. AURATUM, golden rayed Lily of Japan; three sizes, 9d., 1s. and 1s. 6d. each.
All common varieties in stock. See CATALOGUE.
25 per cent. discount when at least six of one kind are taken.
All carriage free. Now is the best time to plant.
HOOPER & CO., COVENT GARDEN, LONDON, W.C.

COLCHESTER ROSES

Have been made famous all over the World by

BENJAMIN R. CANT,

THE OLD ESTABLISHED AND CELEBRATED

ROSE GROWER,

COLCHESTER.

WINNER of the CHAMPION CUP of the NATIONAL ROSE SOCIETY THREE YEARS in SUCCESSION.

Every description of plants are the finest possible that can be grown, and the Tea-Scented Roses especially are the most splendid plants ever seen.

CATALOGUES, post-free, on application.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Grape Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

Notice of Removal.

NUTTING AND SONS beg to give notice that owing to the expiration of the lease of 60, Barbican, they have removed to more extensive premises,
106, SOUTHWARK STREET, S.E.,
where all communications should be addressed.
NUTTING AND SONS, Wholesale Seed Merchants, London, S.E.

CHRYSANTHEMUMS. — Speciality.— 420 varieties, guaranteed true to name. One of the largest and cheapest Collections in the Trade. Plants, purchaser's selection, 2s. 6d. per dozen, 16s. per 100; cuttings, 1s. 6d. per dozen, 10s. per 100; W. E.'s selection, cheaper. For the new English and Continental varieties see CATALOGUE, with Essay on Cultivation, one stamp. Inspection invited.
W. ETHERINGTON, The Manor House, Swanscombe, Kent.

To the Trade
SEED POTATOS.

H. AND F. SHARPE'S Wholesale Priced LIST of SEED POTATOS is now ready, and can be had on application. It comprises the best kinds in cultivation, and the prices are very reasonable.
Seed Growing Establishment, Wisbech.

Aquatics.

J. V. REES (late Robert Parker) has the finest Collection of above in the country, and can supply Hardy Herbaceous and Alpine Plants, in 100 showy varieties, from 50s.
New CATALOGUE now ready.
Exotic Nursery, Tooting, Surrey, S.W.

SPECIAL OFFER.
ROSES, Standard, Half-Standard, Gloire de Dijon (dwarfs), Général Jacqueminot (dwarfs).
LARCH, 1 to 5 feet.
SPANISH, 2 to 6 feet.
ALDER, 2 to 4 feet.
HAZEL, 2 to 4 feet.
FIR, Scotch, 1 foot.
MANETTI STOCKS.
WOOD'S GARLAND STOCKS.
Prices on application.
WILLIAM FLETCHER, Mersham Nurseries, Chertsey.

ANDRÉ LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS. STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London, *viâ* Honfleur, about 2s. 6d. per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1878.
Orders must be addressed to Messrs. WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

To the Trade.

EAST LOTHIAN STOCK.—Purple, White, Scarlet, New Crimson, and White Wallflower Leaved. All saved from the purest strains. Prices on application.
IRELAND AND THOMSON, Seed Warehouse, 20, Waterloo Place, Edinburgh.

LILIUM AURATUM.—Our first importation has arrived in Bulbs of magnificent size and quality, superior even to most home-grown bulbs. For prices see our LIST, No. 71, p. 1. Also from Japan, in extraordinary size and splendid condition, LILIUM HANSONI, CONCOLOR, CORDION, EXIMIUM, BATEMANNIA, KRAMERI, CORDIFOLIUM, LONGIFLORUM, fol. alb. marg. Send also for our Special Offers of GLADIOLI, IRIS, and NARCISSI. A consignment of New Zealand FILMY FERNS just arrived.
NEW PLANT AND BULB COMPANY, Colchester.

To the Trade.
HOME-GROWN VEGETABLE and FIELD SEEDS.

H. AND F. SHARPE will be pleased to give special quotations of all the principal varieties of VEGETABLE and FIELD SEEDS they have grown and are offering this season. Their stocks are very pure, quality excellent, and prices very low.
Seed Growing Establishment, Wisbech.

Orchids.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have at present a grand stock of DENDROBIUMS, in variety, and other East Indian ORCHIDS, also CATTLEYAS and other valuable ORCHIDS from South America, and they are constantly receiving fresh importations. Price LISTS and full particulars on application.
The MANAGER, The Vineyard and Nurseries, Garston, Liverpool.

SPECIAL CHEAP OFFER.—ALDER, ASH, BIRCH, ELM, Austrian PINE, MAPLE, OAK (English), PRIVET ovalifolia, PRIVET Evergreen. All the above good stout stuff, from 2 to 4 feet. POPLAR in variety, from 4 to 10 feet; THORN QUICK, 3, 4, and 5 feet; YEWS, extra strong; SYCAMORES, 3 to 6 feet; BERBERIS AQUIFOLIA, 1½ to 2 feet; CUPRESSUS, various, 2 to 10 feet; Golden ELDER, Ribes CURRANTS, Sweet BRIERS, HOLLIES in variety, from 1 to 9 feet: splendid stuff, all recently transplanted. IVIES in variety. LAURELS in sorts, 2 to 4 feet; LILACS, 3 to 5 feet; RETINOSPORAS, in sorts, 1 to 6 feet; English YEWS, 2 to 4 feet, fine stuff; AZALEA PONTICA, 1 to 3 feet; RHODODENDRONS, for covert and other planting, from 1 inch to 3 feet: several hundred thousand choice named RHODODENDRONS, in good sized plants; Cunningham's White CAUCASICUM PICTUM JACKSONIANA, &c. Double Yellow and White PRIMROSES.
For price and particulars apply to
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent.

SPECIAL OFFER
OF
ORNAMENTAL TREES and SHRUBS,
ROSES and FRUIT TREES of all kinds,
FOREST TREES, &c.,
All well transplanted and strong, at reduced prices (free on application).

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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 13, 1884.

EATON HALL.

A MAGNIFICENT mansion, known appropriately as Eaton Palace, has now been replaced by a still grander building, which all the world has seen or may see—for the Duke of Westminster admits all comers from whencesoever they may hail, and sent to the Chester Infirmary lately £500, the amount of a year's receipts of money taken at the door. Each person claiming the privilege and boon of admission to the house and grounds is charged 1s., so that 10,000 visitors from all parts of the world must have seen this old park and seat and this newly built house during the past twelve months.

On beholding the stupendous pile one thinks first of Aladdin and his lamp, and then of the ground rents of Belgravia, created, as they were, not by magic, but by energy, commerce, and the wealth which enterprise has accumulated. The genii employed by the Duke in the creation of one of the most costly establishments in the country may be shortly named in three letters—£ *s.* and *d.* There costly and extensive work was obviously designed, not entirely for their master but for others to enjoy, and to show the world an appropriate homestead for an English nobleman. They have succeeded perfectly, for Eaton, as a private residence, is one of the wonders of the world.

Four hundred and fifty years ago Ralph Grosvenor, heir of Sir Robert Grosvenor of Holme, married Joan, heiress to the last male of the ancient family of Eton, otherwise spelt Eaton. The ownership of Eaton fell to the present family by this auspicious union. Belgravia, which gave its name to the well known West-end square, is a modest and a model little hamlet just outside the park here. A hall, built by Vanbrugh, stood close to the site of the existing pile till the year 1800, when it was replaced by a noble Gothic house with a terrace 350 feet in length, and grand apartments, as we read in the county history, splendidly furnished, with offices, stables, and gardens, all of an appropriate kind. The Duke's genii have swept them away, and if we pass the decorated and costly gates which they have placed at the enclosure before the chief entrance, or Watts' equestrian statue of Hugh Lupus, the first palatine Earl, in the court outside another entrance, we may present ourselves to the attendant guide at the door. I can only say of the interior, that the costly decorations are not of the impossible-to-be-endured kind.

The library is 90 feet long by 30 feet wide, and the walls are panelled with walnut, and hung with five historical pictures by West. The clock tower is 200 feet high, and there are twenty-eight bells played upon by machinery, and a striking "Big Ben." The chapel at the north-west end of the house was built for the family and for 200 servants, and would not accommodate the whole if they all attended at the same time. A beautiful statue of a beautiful woman—Constance, the late Duchess—mournfully reminds the visitor of the lot of humanity, and of those

sad partings which the rich as well as the poor are called on to endure.

Who shall describe the gardens? Mr. Sellwood has fifty-six gardeners under him. Two foremen were employed at the time of my call, showing parties round. The conservatories are heated by six miles of hot-water pipes; and when I asked the young fellow who had charge of myself and friends the number of the glasshouses, he endeavoured in vain to reckon them on his fingers. Even the leading firms in the various branches of horticulture cannot always show as many acres of glass as the munificent owner of Eaton. Each house, moreover, is built substantially, and the fittings and workmanship are all of the best kind. The largest conservatory consists of eight divisions or branch houses, each opening at its end into a corridor 125 yards in length. The house is worthily planted and managed. Allamandas, Passiflora racemosa, and Bougainvillea glabra are prominent among the creepers of the roof, and form a gorgeous awning to Palms and Ferns and other beautiful plants below. One of the divisions is named the Nymphæa-house, and contains the Sacred Bean of Egypt, Nelumbium speciosum, and pink, white, and blue Water-Lilies. These houses are in the full pride of their beauty in May and November.

The Eucharis-house only exhibited a few flowers at the time of my visit, but they were of the purest white, and the large dark and healthy leaves of the numerous plants betokened the approach of a superb display in the season. The Azaleas and Roses were at rest of course, but that other division called the Stephanotis-house displayed the well known flowers and foliage of the plant from which it is named, in full bloom overhead, the pot plants below being Gardenias chiefly. This noble conservatory was described in detail in these columns several years ago.

In passing through the kitchen gardens we looked into some of the twelve Grape-houses, and took the rest as seen. The Black Alicante and Madresfield Court Grapes in a house by themselves were perfect in crop and colour, and the same may be said of Lady Downe's, which fills a house. Mr. Sellwood is noted for Melons, and in passing on quickly to look at the Hall and the pleasure grounds around it, I heard incidentally, observing some well grown Strawberries in pots, that 6000 plants of this fruit are forced yearly. In the pleasure grounds we were attracted by two buildings of exquisite proportions and great beauty within and without: one is a garden temple of terra cotta with a marble vase on the floor beneath the dome and an echo which seems to be in the wall, since the usual invitation brings it out very distinctly. The other erection is a tea-house, a building more attractive and appropriate perhaps in an English shrubbery than the other. It is a cottage of great cost, gabled and rustic in its plan, with all appliances for sumptuous hot-water boiling and tea-making, and a charming room for partaking of the harmless and delicious beverage. The walls of the tea-room are panelled and appropriately painted, each panel being in fact the "canvas" of a work of art.

Let us pause and admire the view from the top of the flight of steps leading from the saloon of the Hall to the terrace. Only the pen of a Disraeli could describe these marble halls and pillars of porphyry. The River Dee is hidden from view, but it steals through the meadow half a mile beyond the shrubberies, and there is water enough in the "Serpentine" and other fish-ponds, which lie on the right. From these same marble steps, looking due south, some neighbouring houses are seen at the sufficient and respectful distance of about a dozen miles. Beeston Castle, a ruin belonging to Lord Tollemache, is perched on its precipice, as you may see it at Beeston Castle Station, between Crewe and Chester. It is an ornament worth having in this rich but rather level landscape. Close by it are the Peckforton Hills, and among the woods of Oak and Holly, on a conspicuous crown of the ridge, rises Lord Tollemache's residence, Peckforton Castle, built by himself thirty years ago, of the grey stone of his own hill, and wearing a face as fresh as when it was new. It would seem that the common sense of the noble lord was worth more to himself than the "science" of so-called experts when they selected the stone for the Houses of Parliament, which are now crumbling in decay. On the right, looking across the ornamental water and its reeds and Bulrushes, are the hills of Denbigh.

We drove to Eaton Hall through the adjoining and palatial village of Ecclestone and the church, to whose consecrated ground the Duke's family have been borne, sometimes prematurely, as all must remember, with as little pomp as the humblest villager. Nearer the Hall are the stables of the race-horses, where three winners of the Derby—Doncaster, Bend Or, and Shotover—have been housed in most luxurious quarters, costing tens of thousands of pounds, with boxes and an enclosed paddock for each horse. I believe there is no other example of three winners of the Derby having been owned at the same time by one individual, and as the Derby is the "blue ribbon of the turf," the Duke of Westminster has held three blue ribbons at once. The breeding stud is here, the training stud at Kingsclere. We returned to Chester by the park and broad-belted carriage drive, which reaches almost to the town. Pheasants were feeding by hundreds by the roadside as we passed. *H. E.*

NOTES ON THE CULTIVATED ASTERS.—V.

(*Continued from p.* 681.)

SUBGENUS I. EUASTER.—Bracts of the involucre dry at the base, furnished with spreading green leafy tips. Heads copiously panicled, and stems abundantly leafy. The largest subgenus, confined to America.

Group III. VULGARES.—Pubescence of the stem and leaves neither tomentose nor viscid. Lower leaves tapering gradually into their petiole.

This week I have to deal with the small-headed species of this largest central group in the genus, which are eight in number.

18. *A. polyphyllus*, Willd. A. tenuifolius, Nees and Gray, in part.—Stems tall, glabrous, erect, reaching a length of 4—5 feet. Leaves linear, sessile, entire, the lower 3—4 inches long, not clasping at the base. Heads ½—⅝ inch diameter, arranged in an ample deltoid panicle, with rather thyrsoid branches. Involucre campanulate, ⅛ inch long, well imbricated, the bracts with small adpressed leafy lanceolate tips. Disc-flowers yellow. Ligules about thirty, white, ¼ inch long. Achene rather silky; pappus white, ⅛ inch long.

Vermont to Wisconsin, Pennsylvania, and Carolina. A rare species, allied to Tradescanti and salicifolius. Flowers with us early in October.

19. *A. Tradescanti*, Linn. (in part), Gray. A. parviflorus, Nees. A leucanthemus, Desf.—Stem slender, erect, 3—5 feet long, nearly glabrous to the top. Leaves lanceolate, sessile, entire, acute, tapering to the base, not clasping, the lower 3—4 inches long, ⅜—½ inch broad at the middle. Heads ½—⅝ inch in diameter, arranged in an ample panicle with corymbose branches. Involucre campanulate, ⅛ inch long, well imbricated, the bracts with small adpressed lanceolate leafy tips. Ligules about thirty, white, linear, under ¼ inch long. Disc-flowers yellow. Achene slightly pubescent; pappus white, flexuose, ⅛ inch long.

Canada and Saskatchewan to Illinois and Virginia. Flowers with us till late in October. A common and variable type, separable from ericoides by its broader leaves, and larger laxer heads. It is naturalised in several districts in Europe, and is common in gardens.

20. *A. ericoides*, Linn. A. tenuifolius, Willd. A. pauciflorus, Martens. A. dumosus, Hoffm., non Linn.—Stems densely tufted, 3—4 feet long, stiffly erect, pubescent or glabrous upwards, with copious ascending branches. Leaves linear, entire, narrowed to the base, not clasping, the lower not more than 1—2 inches long, ¼—⅜ inch broad, those of the branches of the inflorescence small and rigid. Heads ⅜—½ inch in diameter, arranged in a broad ample panicle, with ascending corymbose branches. Involucre campanulate, well imbricated, ⅛—¼ inch long, the bracts, with small rigid lanceolate leafy tips. Disc flowers yellow. Ligules about thirty, white, ⅛ inch long. Achene finally glabrous; pappus whitish, flexuose, ⅛ inch long.

Canada to Florida and the Mississippi. In full flower with us up to late in October. Var. Reevesii is a dwarf variety common in gardens. A. villosus, Michx., is a form with hairy stems.

21. *A. dumosus*, Linn.—Stems slender, erect, 2—3 feet long, glabrous or finely pubescent. Leaves linear, entire, narrowed to the base, the lower 3—4 inches long, those of the panicle-branches minute, stiff, spreading or reflexed, rough at the edge. Heads ⅓ inch in diameter, arranged in an ample panicle with ascending branches. Involucre campanulate, ⅛ inch long, the bracts in many rows, with short obtuse adpressed leafy tips. Disc flowers in our plant purple. Ligules about twenty, lilac, ⅛ inch long. Achene finally glabrous; pappus dirty white, flexuose, ⅛ inch long.

New England and Canada to Florida and Texas. Flowers with us early in October.

22. *A. multiflorus*, Ait.—Stems stiffly erect, very copiously branched, pubescent. Leaves small, linear, entire, firm in texture, sub-obtuse, roughly hairy on the margins. Heads about ½ inch in diameter, densely arranged in a very compound panicle, with ascending thyrsoid branches; peduncles shorter than in any of its neighbours. Involucre campanulate, ⅛ inch long, very much imbricated, the leafy tips of the bracts squarrose. Disc-flowers yellow. Ligules about thirty, white, spreading, linear, ⅛ inch long. Achene finally glabrous; pappus whitish, flexuose, ⅛ inch long.

Canada, Saskatchewan, and British Columbia, to Georgia and Texas, the most widely-spread of all the United States species. Flowers with us early in October.

23. *A. amethystinus*, Nuttall. A. bostoniensis, Hort.—Stems stiffly erect, very pubescent, 3—4 feet long. Leaves lanceolate, entire, sessile, hairy, the lower 1—1½ inch long. Heads ⅝—¾ inch in diameter, arranged in an ample deltoid panicle with thyrsoid ascending branches. Involucre campanulate, ⅛ inch long, well imbricated, the bracts with large lanceolate spreading pubescent tips. Disc-flowers purple. Ligules about thirty, bright lilac, under ¼ inch long. Achene finally glabrous; pappus dirty white, moderately firm, ⅛ inch long.

Massachusetts to Iowa and Illinois. A very distinct but rare species, flowering with us early in October.

24. *A. vimineus*, Lam.—Stems slender, erect, arching over at top, the lower branches spreading horizontally. Leaves linear or lanceolate, not clasping at the base, the lower 2—3 inches long, ⅛—¼ inch broad. Heads about ¼ inch diameter, arranged on a very broad lax deltoid panicle with thyrsoid branches. Involucre campanulate, well imbricated, ⅛-inch long, the tips with short lanceolate green leafy points. Ligules about thirty, pale lilac, ⅛ inch long. Achene finally glabrous; pappus dirty white, flexuose, ⅛ inch long.

Canada to Florida and westward to Arkansas. Intermediate between diffusus and dumosus, connected with the latter by A. foliolosus, Aiton.

25. *A. diffusus*, Ait. A. pendulus and divergens, Ait. A. miser, Gray's *Synopsis*, in part. A. horizontalis, Desf. A. recurvatus, Willd.—Stems reaching a length of 4—5 feet, arching over at top, and the lower branches spreading. Leaves thin, those of the main stem lanceolate or oblong-lanceolate, the lower often serrated, ½—⅝-inch broad at the middle, the upper lanceolate and entire. Heads ½—⅝-inch diameter, arranged in an ample deltoid panicle with thyrsoid spreading branches. Involucre campanulate, well imbricated, ⅛ inch long, the green leafy tips of the bracts short and obtuse. Ligules white, patent, about thirty, ⅛-inch long. Achene finally glabrous; pappus dirty white, flexuose, ⅛ inch long.

Canada to Texas and Missouri. In full flower with us in the middle of October. Marked in the group by its weak divaricating branches and large thin leaves. *J. G. Baker.*

(*To be continued.*)

Orchid Notes and Gleanings.

ORCHIDS AT BIRCHFIELD, FALLOWFIELD.—The collection of Orchids now being collected at this place by A. Heine, Esq., bids fair in a short time to become one of the most extensive and important that has ever been formed in this district, already so famous for fine collections, some of which are unfortunately now things of the past. The late Mr. Gotteschalk had ever since 1868 a small collection, among which were the notable plants of Vanda suavis that even now are being sought after, small pieces fetching good prices; and well they may, since the flower-spike is stronger, and flowers more numerous and of stouter texture than the forms commonly met with. These plants passed into other hands soon after the death of Mr. Gotteschalk; and on Mr. Heine taking possession about three years ago there were no plants that could with truth be called the nucleus of a collection. This state, however, was soon changed, for a number of plants were soon purchased, and two houses put up for Odontoglossums, and one for Cattleyas, which did fairly well in them.

The additions were numerous until a twelvemonth ago, when a still more rapid advance took place with the advent of Mr. J. Craggs as gardener. At present there are ten houses set apart for these plants filled with a choice and varied collection, consisting of East India species, that are well represented, and Dendrobes, Cattleyas, and Odontoglossums. Calling a few days ago, I noticed some fine plants of D. formosum giganteum in flower on one plant with four new growths, having produced fourteen, eight, and five flowers respectively. Saccolabium giganteum was coming well away with five spikes of bloom. This species is a most useful and desirable form, the single blooms making capital coat flowers; the entire spike lasts quite fresh from eight to ten weeks. Aërides Lobbii, A. crassifolium, and A. maculosum, were in good condition; the same may be said also of some fine Vandas growing in a large house exactly similar in form to the vineries adjoining. Vanda bicolor insignis, 7 feet high, with three young breaks and perfect leaves down to the base; another nearly 5 feet high, with five breaks, and equally fine foliage; other V. suavis and V. tricolor, as well as the true V. insignis, were here in a healthy state, and of a capital colour; a large plant of Angræcum sesquipedale was also very noticeable. There were noticed some fine pots of Calanthe Veitchii, with numerous and strong spikes full of bloom. Some capital masses of Cypripedium Lawrencianum, C. Spicerianum, C. Lowi, C. caudatum, deserve mention. Dendrobiums were well done; fine plants of D. Wardianum, D. crassinode Findleyanum, were showing well for bloom; on some bulbs of the two former species there were from twelve to seventeen nodes of flower, showing the promise of a gorgeous display in early spring. As these showy species can now be bought at moderate prices, it is better to follow Mr. Heine's example—*i.e.*, secure a score or two of good pieces, there being the certainty of variety occurring amongst them, and, of course, a chance of superior forms appearing. Dendrobium devonianum, D. primulinum, D. cretaceum, on blocks or in baskets, with D. thyrsiflorum and D. nobile in pots have made fine stout bulbs. In the Cattleya-house some exceptional pieces may be seen of Lælia purpurata Russelliana, a plant with twenty-seven leads; L. p. alba, with twelve leading shoots; Cattleya Skinneri, a mass of 4 feet in diameter, having sixty-five leads; numerous plants of C. Mendelii, some with eighteen, fifteen, and eleven growths, and many with from four to eight leads. There are C. Trianæ, C. Mossiæ, by scores; C. gigas and C. Dowiana in pots suspended from the roof, thus obtaining more light and less moisture than the plants on the stage. Several true C. labiata in flower, besides C. exoniensis in bud, C. Wagneri, C. xanthina, and C. velutina were also doing well. A fine lot of Cœlogyne cristata promised well for bloom. Lælia albida and L. autumnalis were well advanced in the spike. Odontoglossum vexillarium was in good condition, one plant having fifteen leads, the young leaves being broad and of a deep green. O. citrosmum in baskets flowered well last spring, and formed fine bulbs. The O. Alexandræ, O. Pescatorei, O. Halli, O. cirrosum, in two houses, were in splendid condition, so that it would be difficult to surpass them. The stout spikes now pushing up give good promise of a grand display of these splendid forms. A fine bank of Masdevallias, including the most showy sorts is worthy of mention, many plants being in 8 and 10-inch pots. The beautiful M. Tovarensis was nicely in flower. A house has just been erected for Phalænopsis, and though it is too soon to see any great change, there is every reason to believe that the occupants will in the coming season make great headway. Though but few individual plants have been mentioned, there are a host deserving of special notice, evidencing great care and skill on the part of Mr. Craggs. *W. Swan, Fallowfield.*

SELBORNE, STREATHAM, SURREY.—The very choice collection of Orchids to be found here, illustrates forcibly what can be done under adverse circumstances and in peculiarly cramped surroundings. No one would think on viewing the glass from the outside that it contained such a large collection of these favourite plants growing in such luxuriant health. Mr. Salter has also to find room for plants for table decoration, making the conservatory gay, bedding plants, &c., and just now has a very fine lot of Chrysanthemums, conspicuous among the latter Lady Selborne; the white sport from James Salter, first produced here. There is always something interesting in a good collection of Orchids, and Mr. Salter just now has about twenty-five varieties in bloom, a large number when we consider the season of the year. They were as follows:—Brassia antherotes, Cattleya Dowiana, several good spikes; C. gigas, several—one very fine type with a good spike of four large blooms; Comparettia macroplectron, Cypripedium Schlimii, a rare distinct species from New Granada; C. Spicerianum, a grand plant of this noble Orchid, having thirteen splendid blooms; C. Harrisianum, Dendrochilum Cobbianum, Epidendrum Wallaceii, E. Huntleya, E. violacea; Lælia Dominiana, L. præstans—a fine type of this splendid dwarf species; L. Dayana; Masdevallia Reichenbachia, M. ignea, and M. radiosa; Odontoglossum crispum, O. maculatum (fine), O. Roezlii, splendid blooms, and O. Sedeni; Pilumna nobilis, fine blooms of this grand sweet-scented Orchid; Vanda cœrulea, several good spikes, and grand blooms of the somewhat rare Zygopetalum Gautieri.

CATTLEYA CROCATA ROSEA.—A flower of a lovely variety of this species, which was described in our columns (see *Gardeners' Chronicle*, Oct. 25, p. 520), comes from Holbrook Gaskell, Esq.; it is a perfect model of a symmetrically formed Cattleya, and is of fine substance, and delightful odour. The whole flower is white, suffused with rose, the midribs of the petals and the tube and edge of the labellum exhibiting the pure white of the type, and the inside of the tube of the labellum also having the dark orange colour of the plant originally described. The flower measures 6 inches across, and the lip 3½ inches in length. The plant, which is about 2 feet in height, is said to resemble a gigantic C. Eldorado, to which section it belongs.

ONCIDIUM BICOLOR.—I recently grew two plants of the above-named Oncid, one in the Cattleya-house, the other in the Mexican-house; both plants made bulbs larger than the native ones, rooted freely, and appeared in the best of health. I was every day expecting to see two fine spikes make their appearance, but, alas! both plants lost their last made bulbs. The enemy was rot, which first infected the tip of the leaf, and gradually ran down into the bulb. All efforts to arrest its progress were fruitless. Beyond destroying the leads, the plants remain intact, and will probably start into growth again. Perhaps some of your numerous readers can solve the mystery, for such I believe this kind of rot to be, and one peculiar to this Oncidium. *E. J. E., Liverpool, Dec.* 3.

DENDROBIUM LOWII.—Some well-flowered plants of this pretty yellow Dendrobe are now to be seen in the fine lot of it at Messrs. Hugh Low & Co.'s nursery at Clapton, where it seems to thrive well although most growers give it a bad name for being unmanagable. The treatment may have something to do with its good health at Clapton. Mr. Low says that it does best in pots in a warm airy house and unlike most of the other nigro-hirsute Dendrobes it will not grow on blocks. This being the case no doubt many have lost it by blocking. D. formosum giganteum, on the other hand, is proved at Clapton to be unmanageable in pots, but on blocks or in baskets the plants will almost take care of themselves. *J. O'B.*

ANGRÆCUM KOTSCHYI.—This species, described by Professor Reichenbach in your last issue, requires much the same treatment as A. sesquipedale or A. Ellisii. It comes, I believe, from the mainland of Eastern Tropical Africa, not very far from Zanzibar. It has been grown at Burford Lodge on a log or raft, and likes heat, moisture, and shade. It produces numerous thick, round, and fleshy roots, like those of A. caudatum. It is a slow grower, and as the inflorescence is large in proportion to the plant, it should be cut early. To my eye the most remarkable feature of the flowers are the long nectaries or spurs, each of which makes a complete horizontal turn or loop, about the size of a fourpenny-piece, towards its middle. *T. L.*

VANDA LOWII. — The magnificent plant of this purchased at M. Oscar Lamarche's sale at Protheroe & Morris' by Mr. Henry James is now in flower at the Castle Nurseries, Lower Norwood, and proves to be as fine a variety as it was represented to be. The plant is over 7 feet in height and in perfect health, having leaves down to the base and a most extraordinary root-growth; it is also particularly interesting on account of its having originally been in the noted Schiller collection. The flower-spike, which is still growing, has thirty-six very fine and distinctly marked flowers, the two nearest the plant being, as usual, quite unlike the others, and one of those further down the spike appears to be intermediate between the two kinds of flowers usually produced. There was a third odd yellow flower, but being deformed it was cut off. [It should have been sent for inspection to some discreet and learned person. ED.] The plant is certainly a most wonderful specimen, and well worth visiting, particularly as it will be found in company with a fine and well grown collection of Orchids, magnificent Heaths, and a general collection of good plants. In bloom, among others, are Angræcum Kotschyi, Cymbidium giganteum, many Sophronitis, Odontoglossums, Lælias, &c., and a very bright and pretty form of Arundina bambusæfolia. Mr. James certainly gets a most vigorous growth on his Orchids, especially the Cattleyas and Dendrobes. One of his plants of D. Jamesianum has a pseudobulb 3 feet in length. *J. O'B.*

THE ST. PETERSBURG BOTANIC GARDEN.

(*Concluded from p.* 714.)

THE propagating-house, to which we are next introduced, contains a large stock of various kinds, and we note generally that the stock of duplicate plants, in size and number, is larger here than in any other garden of the kind we know. Pandanus nitidus strikes our attention most particularly. It is similar in habit to P. humilis (properly, we believe, P. pygmæus), and branches as prettily, but it is larger in its growth, and the leaves are of a different colour, being bright green. This is another of those plants we have found quite distinct from anything we know, and bearing a name we have never noted in any other collection. It is not to be found in the books we possess, but we shall hope to know more of the plant. In this house we noticed a fine trunk of Encephalartos cycadæfolius pushing strongly, and Tradescantia fuscata, which, though pretty common, we were interested to see in good quantity.

HARDY PLANTS.—The outdoor departments are of great interest, notwithstanding the climate, which prevents the outdoor culture of so many fine trees, shrubs and other plants, which with us are quite hardy. Nothing more immediately strikes the attention than the almost complete absence of evergreens. Mahonia aquifolium was in fairly good foliage, but in the Alexander Gardens almost every leaf had been destroyed, though apparently protection had been afforded. The principal evergreens are those belonging to the Coniferæ, to which we shall presently refer. Lawns are nowhere good in the cold parts of Russia, but the best of the plants growing in the turf of this garden produce sometimes a very fine effect. The common Pilewort, Ranunculus Ficaria, with leaves not spotted, we never saw in such beauty. One of the prettiest of the turf plants, growing here in masses, like the last, is Anemone ranunculoides. A pretty Gagea, like G. lutea, but really G. minima, as Dr. Regel informed us, is charming to meet with, and we found it growing commonly about St. Petersburg. Anemone nemorosa is very attractive, and we noticed that in Russia it is always paler than in England, being nearly pure white. Ægopodium podagraria is, of course, an intrusion, but it is very common, and indeed is perhaps the commonest of British plants we saw in Russia. Corydalis bracteata crops up beautifully in places, and all the species grow much finer in this climate than they do generally in our own.

THE ROCKERY.—The rock garden is decidedly one of the chief, if not the chief, of the outdoor features, and it requires a few words of description, as the plants flourish upon it amazingly. In construction it is quite simple, and probably the welfare of the plants alone has been considered, but the effect is good, as too much has not been attempted in this direction. It is built of large stones, generally on edge, end to end, enclosing a space of level, or nearly level soil, devoted to one kind, so that there is a good mass of each, and it lies mostly on a slope facing south. The soil appears rich, light, and friable, and may be but the best of the natural soil improved. One of the reasons probably why the plants, especially the bulbous plants do so well, is that the drought does not commence until growth has been completed or at least is near completion, when it does only good, and in this a very successful bulb cultivator concurred. One of the finest plants in flower was an Erythronium said to be the Siberian form of E. Dens-canis, but it is very much finer than anything we know, and if only a variety of the above-mentioned it is a very valuable one. It has flowers twice or three times as large as those of the common E. Dens-canis, and the leaves have fewer

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spots. Colchicum luteum was flowering in good quantity in one of these stone beds, and had apparently grown there, so that it is much hardier than it is generally supposed to be in England. Chionodoxa nana (Puschkinia scilloides) was particularly fine, and against the stones appeared uncommonly tall. Corydalis Sewerzowi, with large rich orange blossoms, was finer considerably than we have seen it before, and very ornamental. Allium Alexieanum we noted in the Exhibition, and in one of the houses already spoken of, and here we found another splendid species quite new to us and bearing the name A. karataviense. It is from Turkestan and has very fine foliage. The leaves are broadly ovate, red-tinted and glaucous, with red edges. Caltha palustris var. orthorhyncha was in flower, of pale yellow colour, and it is a variety we had not before heard of, but it appears to be distinct. We were fortunate in finding several species of Tulip in bloom though for outdoor flowers generally we were too soon. One of them was T. dasystemon, which is dwarf in habit with starry pale yellow flowers. There were several varieties of T. Kaufmanniana named rubra, lutea, and luteo-bicolor, according to colour. Two other species in bloom were T. turkestanica and T. brachystemon, the latter of fine yellow colour. Among other names we noted were T. lævigata and T. Ostrowskyana. Mr. Baker considers that T. Hoeltzeri and T. Kesselringii are the same, but we found different clumps bearing those names, so that probably they are not considered here to be absolutely identical. Primula algida, though not new, we had not seen before, and another kind, P. auriculata var. luteola, of Dr. Regel, was fresh to our knowledge. Alfredia nivea, from Turkestan, is probably a pretty plant, and it makes an additional species to the two we cultivate.

CONIFERÆ in the open air are not numerous. Thuia occidentalis appears to stand, but not well; here was the finest we saw of it, but elsewhere it seemed merely to exist. Pinus sylvestris about St. Petersburg was not vigorous, and had a slightly yellow appearance, but not, of course, on account of the cold, as in the country near there were some good trees, and it extends wild to Siberia. Pinus pumilio was here tolerably good, but its leaves we saw browned in other gardens. P. Cembra was good, but not large. The finest coniferous trees we noticed were Larix dahurica, L. europæa, and its variety, pendula. Some others we may mention are Abies sibirica, Pinus Menziesii, and Picea Engelmanni.

HERBACEOUS PLANTS.—The herbaceous ground we only saw once, and our notes on that occasion were not numerous, but we saw one plant we should not like to have missed. This was Kaufmannia Sewerzowi, a new plant, upon which the genus has been founded by Dr. Regel, and we are not sure that it has yet been introduced to Britain. It is from Turkestan. Here it grew in the open bed with other Primulaceæ, to which order it belongs. It is placed next to Primula, but it is totally different in appearance, especially in the flowers, of which the corolla is cylindrical, yellow, and deeply cut into five segments. In its aspect it recalls Cortusa, and it may be more nearly allied to this, though further from it by the terms of classification, just as Xiphion is sometimes separated several genera from Iris, to which it is very closely related. Judging by the description of Cortusa it has the same short filaments united at the base by a membrane, the style is similarly filiform and protruded, but to a greater length, and it has a similar kind of inflorescence. It has leaves very like those of Cortusa, and the flowers would seem very similar, but that the calyx and corolla are yellow. The plant is altogether pretty, and worth cultivation. The collection of Umbelliferæ is here better than it is in most gardens, and of Heracleums there were several very distinct kinds, and we noted about half-a-dozen we thought the best. Growing in the ordinary soil, fully exposed, were Rubus Chamæmorus and R. arcticus, fine clumps such as we could not hope to have in the same position. Choice plants we met with were Hedysarum multijugum, Lycopodium alpinum sibiricum, Delphinium Pylzowi of Professor Maximowicz, and Dianthus superbus var. Hoeltzeri of Mr. Winkler, a very pretty variety deserving of culture as well as its type.

HARDY SHRUBS.—Outdoor shrubs are particularly interesting, and it was with great pleasure we saw some of those more particularly connected with this garden. Many of them are sheltered beneath those larger trees, principally Limes, Poplars, Elms, and Birch, which line the straight walks. These walks intersect and form squares of grass on which the shrubs are planted. The whole of the gardens, however, is not laid out in this style. A part of it is more like the pleasure-grounds of an English garden, and also about these winding paths we found many choice shrubs. Unfortunately the majority of them were only in the bud stage, showing here and there the promise of foliage. Among the finest specimens we noticed were Caragana jubata and Cratægus Schrœderi, the former being the largest we know. One of the most interesting was Pyrus ussuriensis, the fruits of which we saw exhibited at the Japanese stand in the International Exhibition. Rhododendron caucasicum and R. hirsutum were represented by good specimens, but R. ponticum we did not see out-of-doors, and probably it is not hardy. Eleutherococcus senticosus is a little known shrub, an ally of Acanthopanax from Mantschuria, which we believe represents one of the numerous discoveries of Professor Maximowicz in this region. Many of the kinds whose names we noted must be passed over in these notes, as from the earliness of the season there are no characteristics we can give by observation on the spot. The common Ash is unable apparently to flourish in the cold of this climate, and a specimen of it had sustained much injury. Cratægus Crus-galli and Aristolochia Sipho also appeared to suffer. One of the finest trees was a Populus nigra, said to have been planted by Peter the Great. The good labels were remarked by several visitors. They are made of tin painted, with the name written in paint, and they are supported on stout sticks.

THE BOG GARDEN is decidedly one of the outdoor features. It is formed apparently in a naturally wet dell, narrow, but of considerable length. Rustic bridges of Birch-wood, with the natural bark, cross it at intervals, and raised paths form a convenient means of approach to all the plants, which are in good masses, confined by these paths. The water percolates from one end to the other, and makes a pond in one or two places for deep water aquatics. By the sloping banks every degree of moisture is at command for the different species, and some which merely love moisture find the most suitable place for their needs. It was rather early to see the effect of the plants growing up, but Chrysosplenium oppositifolium was in strikingly fine condition. It grew in a wet place in a large mass, and was splendid in colour, forming sheets of bright yellow, such as we hardly knew possible from this plant. The branches of trees hang over this bog garden, and we should like much to see it when the leaves are out. A pleasant shade must be afforded, and the vista of water plants, with occasional glimpses of water, must be very pretty.

To Dr. and Mrs. Regel I shall ever feel indebted for their uniform kindness and hospitality; they will always be associated in our recollection with the pleasure of our visit, and we shall hope that ere long the like occasion of a great International Exhibition will once more bring to our country the great Director, who has done so much to enrich our gardens. *R. Y. Lynch.*

EUCHARIS AMAZONICA.

THE subjoined correspondence on this subject may be of interest to those of our readers who may find some difficulties with this plant. The inquiry came from a correspondent, and was answered by our able contributor, Mr. Hudson, of Gunnersbury House:—

I feel sure you will not say or think I am troubling you when I write to ask your advice on a horticultural subject, seeing you are so ready to give such sound and good advice to amateurs and others in the gardening papers. All the hints you give I carefully note and try to follow. At present, and for some time past, my Eucharis have bothered me a good deal. I have about 300 or 400 bulbs, fine, large, healthy bulbs they were, and still appear to be so, but this last year or so they do not seem to be so healthy, I thought it was soil, then water, then something else. However, as soon as a leaf is made and gets a fair size it turns yellow at the edges, and finally goes off; in other cases the young leaf comes up curled, and as for all the rest of the foliage it has not that fine, dark green, solid, leathery look which betokens health. The drainage in the pots is good, carefully done; the loam is one year old—the top spit from one of my pasture fields; stacked up with this are some half-inch bones, bits of charcoal, and little bits of old cow-dung. Now, can you account for it? Can it be the loam or bones, or the water, which is hard naturally, but lies a night, and often longer, in the tanks in the houses before using it tepid? No liquid manure has been used, nor any fertilising nostrum, so no chemical stuff has touched them. My gardener and I are puzzled. They have not been forced, nor have they touched tan, but have been grown in bottom-heat for the past year plunged in cocoa-fibre up to their rims. Now I do not know whether I ought to give you any clue to what I have just taken it into my head is the cause. I found that if I take a handful of the cocoa-fibre in the plunge-bed and squeeze it like a sponge, that I squeeze a quantity of water out of each handful, and although the plunge-bed had the means of draining itself, I find it has scarcely done so, but that the fibre is a mass of wet "muck," to use a vulgar term, and consequently each pot was quite wet; and as pots retain a quantity of moisture, I take it that the roots and ball of soil must have been constantly wet. I found to-day on examining a few pots that the roots outside the ball of soil, and consequently next the pot, were perfectly dead and rotten, while I found roots which were among the crocks or drainage in fine condition. Now, I want to know if this cause would account for the condition of my plants—is it enough to cause it?—for I thought that the Eucharis naturally in its home grew in a marshy place. I would also like to know if too strong sunlight in summer would be against their well-being, for I noticed last summer last for the first time that they did not look well, but had the yellow look about them, and leaves dying off after turning yellow, and as the autumn advanced and less sun they seemed not to be so bad in colour. I need not say that I should esteem it a great kindness if you would give me your views and opinion, and any hints you can as to growing and flowering them successfully, for I am fond of them, and devote a house to their culture. Is perpetual bottom-heat not advisable, or should it only be used to get them to flower at given periods? Your kind help, with full particulars, will be gratefully esteemed by yours truly, *A. E.*

P.S.—Kindly also say if peat should also be employed in compost—if liquid manure should be given—if in summer the vinery would be a good place to summer them—and so forth. Would you take them all out, and repot them, or not?

—— In reply to yours received this morning I will endeavour to give you the best advice I can, *re* your Eucharis. I have carefully read your letter through, and have been impressed with one matter on which you do not touch, viz., the size of pots and the amount of soil surrounding the bulbs. When these latter are unhealthy there will be but few roots attached to them. I am of opinion (perhaps I am wrong) that when they were repotted too large pots were used, consequently an undue proportion of soil remained for some time without the roots ramifying in it. The soil would with frequent waterings and the pots being plunged in the cocoa-fibre become sour and sodden, causing the roots to take to the same very unkindly at the best. Should I have any Eucharis myself in an unhealthy state as you describe yours, I would shake them out of the soil, wash the roots and bulbs in some tepid water, removing at the same time any scales that surround the bulbs if the same are decaying. Then I would assort the bulbs into three or four sizes and repot each size by itself, using pots from 6 to 8 and 9 inches in diameter according to the size of bulb, crocking the pots at least one-third the way up to allow for abundant drainage in which I find that the roots often delight to wander in course of time. I would only allow sufficient room between each bulb for the new soil to be worked among them with the hand. I would keep the bulbs sufficiently low in the pot to cover them with the fresh compost and to hold them secure. Then I would for some few months give them a somewhat shadier position than usual to induce a free growth if possible. At first and until active growth commences I would be cautious in the application of water and should be disposed to err on the dry side rather than the other extreme, the more so provided bottom-heat is applied to the roots from plunging material. I would not use either tan, which in course of time produces a fungoid growth, or cocoa-fibre, which latter is far too retentive of moisture; but rather choose a sweet plunging material composed of leaves and short stable litter (Oak and Beech leaves are preferable). Such material would not retain so much moisture, and at the same time would give off a certain amount of ammonia that would be pro-

ductive of good results to the plants. At the outset I have thus endeavoured to give you an idea of how I would treat Eucharis myself if I had an unhealthy stock to work upon. I will now take your queries as contained in your letter, and answer them to the best of my ability. "Can it be the loam or bones?" Not the former, which, as you describe it, should be the best that could be chosen. Is there, however, any wireworm at work in it? I should myself be chary of bones with the first shift when treating an unhealthy stock, preferring to use them more freely when the plants have become re-established and in need of another potting. Charcoal would be an excellent addition, however (acting as an absorbent). Cow-dung I would only use as advised in the case of the bones. The water would not cause the harm we think, as ours is as you describe yours. From the further information you give, viz., the plunging in cocoa-fibre, I think with you that there in all probability is a cause of non-success. I would certainly not like any plants of mine to remain in this material plunged to the rim of the pots when sodden, as yours must be. Plants plunged in such a manner would hardly ever require water, and the soil, never having the chance of becoming dry, would soon be unfit for the roots to work in. Rather than plunge in cocoa-fibre I would prefer to stand the plants over a bed of the same material, allowing a circulation of air to play freely between the pots. I should assume by the description you further give of finding dead roots next the pot that this is caused by the undue amount of moisture that has been absorbed by the pot itself—finding the roots in a healthy state among the crocks goes to prove this. I should infer with you that the Eucharis in its natural state grows in marshy places, but at the same time I think there would not be any amount of stagnant moisture surrounding the plants; possibly, too, the Eucharis in its native home is influenced by dry and wet seasons, the former counterbalancing the ill effects of a long continuance of the latter. I do not think "too strong sunlight in summer" is advisable, but prefer a fair amount of shade, and when the plants are growing freely a continuous moist condition in the atmosphere suits them. "The yellow look about them and leaves dying off after turning yellow" would be aggravated, I think, to a greater degree by the exposure, especially when the root-action is deficient. "As to growing and flowering them successfully," this ought to be attained without any difficulty when a house is devoted to their culture. With such a house in which to flower and grow them they ought to succeed well, allowing a temperature of from 60° to 70° at night, and rising 5°, 10°, or 15° by day, according to the weather and the season of the year. I should in such a case keep a portion of the stock drier at the root than the rest in intervals, to induce variations in the period of flowering. This likewise could be brought about by transferring a portion of the stock to a drier and more airy house for a time. The "vinery would be a good place to summer" a portion of the stock to attain to the same end. "Liquid-manure" might be given with advantage when the pots have become well filled with healthy bulbs and robust growth, not before. If all the soil in which they are growing is in the condition that you found that in the one pot you examined I would advise the treatment to be followed as given in the first part of this communication. Of soil I would choose good turfy loam (not too heavy) and fibrous peat, such as Ferns (the common Bracken in particular) delight in, about two-thirds of the former to one of the latter, adding thereto a liberal amount of silver-sand and bits of charcoal. Good decomposed leaf-soil would be an inducement to fresh root-action also, but do not use a great amount.

Should my reply in any way not give sufficient information on any particular point, I will willingly add thereto. I am retaining a copy of this note for the *Gardeners' Chronicle*, which, with a copy also of your letter to me, I should like to send to the Editor, suppressing your name, &c., merely giving initials. The queries in your note and the replies thereto may be of some little value to any who have their Eucharis in a similar state. Hoping what I have written may be of service. *James Hudson.*

Manchester Horticultural Improvement Society.—The next meeting of this Society will be held on Thursday evening, December 18, when a paper will be read by Mr. R. D. Astley, on "Leaves, their Forms and Functions."

BRITISH APPLES.

Mr. Barron's is an excellent little work, and does him great credit for the way in which he has managed the subject by reducing the varieties of both the dessert and culinary Apples to a comprehensible limit, in correcting synonyms, and in expunging worthless varieties, and all this from the broadest possible basis, as is shown by the number of exhibits from nearly every part of the British Isles. Perhaps no man living had a better opportunity of compiling such a work from amongst the number of exhibits brought together on the occasion of the Apple Congress at Chiswick in 1883. The task was a difficult one, which many, even with a stout heart, would have shrunk from, but he encountered the almost insurmountable difficulty, not only made the most of it, but the best of it. This little work, together with its elder sister on the Vine, form the best books extant on each subject respectively. I should also say that Mr. Barron was tolerably well supported in supplementary remarks by some of the exhibitors, many of them giving very intelligent geological descriptions of their local beds or formations, but it is to be regretted that more did not express themselves more fully on this point. The opportunity was a good one, which, had it been embraced, would have added much to the scientific value of the work, by giving some tangible proof as to which formation is most genial and favourable for the culture of fruit trees. In some of the remarks several errors havs crept in, unwittingly perhaps, and which appear also to have escaped the eye of the worthy author or editor himself, and are to a certain extent misleading if left unnoticed. These may be corrected when a second edition of the work becomes necessary. One of these shows Mr. Stevens, of Trentham, to be in error when he describes his Apple trees as growing over the Old Red Sandstone, evidently mistaking the New Red for the Old.

Nowhere in the neighbourhood of Trentham, or even in Staffordshire that we are aware of, does the Old Red Sandstone crop up, and only at one place, viz., Upper Arley, north of Bewdley, do we find it mentioned as underlying the coal or carboniferous formation. Trentham Gardens might more correctly be described as resting on Permian beds or New Red Marl formation, sometimes known as glacial drift, and this of a nature not by any means a kindly one for the growth of fruit trees of any kind. Hence we find Mr. Stevens describing Trentham aa a very poor fruit district. Trentham Gardens, although immediately on the banks of the Trent, do not enjoy, as might have been expected, any alluvium deposit, but higher up, between Hunford and Stoke, there is a considerable breadth of alluvial deposit, and so there is also on the banks of the Lyne, or Lyme, a small brook which joins the Trent near Hunford Bridge. Immediately west of Trentham rises King's Wood Bank, over which I have many a time walked and ridden. This is a formation of pebble and conglomerate, and which stretches southward through Tittensor Common towards Stone, forming beautiful ferny undulating scenery. Westward of this, and in a parallel line, we again find the Triassic or New Red Sandstone, if I remember well, of various colours, on which Apple trees do well. I also remember somewhere in the vicinity of Beech Dale or Beech Cliff seeing large excavations for building purposes of the Keuper sandstone, capacious enough to form dwellings for the *genus homo*. In similar quarries at Kinver, South Staffordshire, I am informed they are or were really occupied. Whilst speaking of the Old Red Sandstone, or even of the New, on which, by the warm arenaceous red loam, we might perhaps, from a pomological point of view, be pardoned for going a little further in drawing attention to the fact that the best fruit tree districts of Great Britain lie chiefly upon red rocks, sometimes of the Old and sometimes on the New Red series. From the warm soils of Cornwall and South Devon we have early Lettuces, Peas, Potatos, and Cauliflowers. Then we have the orchards on the warm soils of the Old Red of North Devon, Monmouth, Hereford, Gloucester, and Worcester. Perhaps the best Apples in England are grown in these districts. We have just had a cask sent us from one of these counties containing some of the finest specimens of Apples we ever saw—such Blenheims, King of the Pippins, and Prince's Pippin! In Scotland we have the Old Red of Berwick and Roxburgh, covering a great breadth of the valley of the Tweed. In Clydesdale there are great breadths of this formation, and from Dumbarton in the west to Stonehaven in the east there is a continuous broad band of the Old Red on which there are many excellent orchards; in this band is the plain called the Carse of Gowrie, lying between the Sidlaw Hills and the Firth of Tay, which in former times was famous for its Apples. Yet we find in Barron's *British Apples* Dr. Robertson, of Fern Bank House, Errol, whilst admitting this, complaining of the sadly neglected state of the orchards of the Carse, giving proof of what might be produced by instancing the weight of a Lord Suffield at 17½ oz., and praying for a more enlightened cultivation. Errol may not, however, enjoy the direct influences of the Old Red.

I must now ask the indulgence of the reader for a few remarks on the Old Red of the Cromarty and Moray Friths, amongst which my esteemed namesake, the late Hugh Miller laboured, with such zeal and success, out of which he disinterred his first found specimen of ichthyolite, afterwards acknowledged by Agassiz and other geologists as the famous Pterichthys Milleri, a diagram of which lies before me. I cannot gather from *British Apples* that anything very particular came from these northern countries, Mr. John Clark, of Brodie Castle, remarking that on "comparing notes with others, he has come to the conclusion that Apples do not grow to the same size, nor ripen so well in the North, as they used to do." Nor do I find that the editor or author in his observations has anything much better to say in their praise. I am certainly of opinion that a barrel of good Apples from Hereford or Worcester would be more appreciable, and save much labour as well as expense in the culture of unsatisfactory orchards. This being so, we need not from a pomological point of view say more about the Old Red, further than that it forms a framing or border along both littorals of the Murray Frith, along the north-east coasts of Cromarty, Ross, and Sutherland, so far as Golspie or the Duke of Sutherland's Castle of Dunrobin, most of which is interrupted by an upheaval of igneous or granitic rock, extending broadly again throughout the greater part of Caithness, the Orkney Islands, and even along a portion of the east coast of southern Shetland.

Mr. Shingles, of Tortworth, no doubt speaks from the "book" when he describes his trees as growing on a soil of sandy loam resting on the Old Red Sandstone. Within a radius of say a mile of Tortworth Court there may be found as many as eight distinct formations or beds:—1, Red Marl or Keuper; 2, Penarth beds; 3, Lower Lias Clay and Limestone; 4, Old Red Sandstone; 5, Carboniferous Limestone and Shale; 6, Carboniferous Limestone; 7, Upper Llandovery; 8, Ludlow beds. There may be more, but those are sufficient to show what a most interesting neighbourhood, geologically speaking, that of Tortworth is. Then there are so many Tortworths:—1, T. Court; 2, T. Green; 3, T. Park, and 4, T. Copse, all lying, less or more, on one or other of the above formations. The neighbourhood is evidently one well suited for Apples, for we find Mr. Barron making the following very complimentary observations on Mr. Shingles' collection, "A remarkably firm, clean, well-grown lot of fruit, and very correctly named."

To finish my observations on the Red Sandstone systems, I might perhaps be allowed to give a tabular arrangement of rocks, *i.e.*, supposing them all to be *in situ*, lying between the New Red Sandstone and the Old Red Sandstone. "New Red Sandstone" is merely a geological term to distinguish between the two formations, the one lying above the Coal or Carboniferous formations, the other below.

Triassic	Salt'ferous Marls. Muschelkalk—wanting in England. Upper New Red Sandstone.
Permian ..	Magnesian Limestone. Lower New Red Sandstone.
Carboniferous ..	Coal measures. Millstone-grit. Mountain Limestone. Lower Coal measures.
Old Red Sandstone, or Devonian ..	Yellow Sandstones. Fossil'ferous Limestone and slaty Shale. Red Conglomerates, Sandstones, and Cornstones; Grey Sandstone, Flags, and Conglomerates.

Some of these formations or strata form beds of from 300, 400, 600, and some, as for instance, the mountain Limestone, over 1000 feet in thickness. That may give some idea, but nothing more, of the depth between the New Red Sandstone and the Old.

Names are often catching, and it may probably

have something to do with it, that Hugh Miller wrote a work, having for its title, *The Old Red Sandstone*, of which many may have heard but few read—that on seeing red sandstone crop up it is concluded at once to be the old. This has so often happened to our knowledge that we cannot help mentioning it, and when we meet the remark with the negative, the interogative immediately follows. Is it not the Old Red which lies beneath the coal? The reply is "no," but the New which lies above it. Let no one make any mistake, that throughout the whole of Warwickshire, Staffordshire, and Cheshire—for in these counties it is largely developed—that whenever sandstone may be seen cropping up, it may safely be concluded as belonging to one or other of the Permian or Triassic group. Out of quarries of these, more or less hard and of various colours, are built most of our churches, church spires, and the larger of our midland county mansions—the very hard white freestone from quarries at Hollington, in the Churnet valley, near Uttoxeter, being much used.

A hydrographical error, to which it will be necessary to call attention, is that made by Mr. Barden, gardener at Offchurch, Bury, near Leamington, who describes his situation as very damp, close to the River Trent, &c. Mr. Barden should have described his situation as on the River Leam, a tributary of the Shakesperean Avon, having its rise in Northamptonshire, near Daventry, flowing south-westward through Offchurch and Leamington, falling into the Avon at Guy's Cliff. Several tributaries of the Trent take their rise in Warwickshire—these are the Blythe, Tame, and Anker; but the Trent takes its rise somewhere in the elevated country between Biddulph and Mow Cop. The greater portion of Warwickshire lies in the basin of the Avon, a tributary of the Severn, to which greater basin Warwickshire really belongs, the area of which is 4437 square miles.

Mr. Barden makes further mistake by spelling the name of his honourable employer with a "W."—Winch. The name of the good old family of Aylesford has for the last 200 years at least been spelt with an "F."—Finch, and there is no reason whatever why the heir presumptive to the Aylesford estates should make any new departure from the original. *W. Miller, Coombe Abbey Gardens.*

A GLOUCESTER JAM FARM.

LORD SUDELEY'S Home Farm, near Teddington, Gloucestershire, was four years ago an ordinary arable farm, for which nobody would offer the previous rent of £1 per acre. But previous successes in the neighbourhood incited the proprietor to convert it into a large fruit-growing establishment. After draining, levelling, burning clay, planting hedges, designed, on growing up, to shelter the fruit plantations, Plum trees (6 feet standards) three years old, from a nursery started in advance of the experiment, were planted in rows of 15 feet apart. These were interspersed with rows of Raspberries, Gooseberries, or Currant bushes in the quincunx arrangement. Thus straight and interminable vistas now open in every direction of the plantation. Very careful staking is required. As the stakes are all creosoted for the 18 inches that is below the ground, and there were no fewer than 40,000 Plum trees to be staked, a creosote tank and furnace were built. Fixed in the ground 8 inches from the tree, and tied to it at its top simply by a wisp of straw, the stake is thus prevented rubbing the bark. Of course there is endless weeding, picking, and carrying. Sometimes over 300 workers are thus employed. Some 3000 Canadian Poplars surround the farm. They are planted 1 yard apart, and will ultimately make an impervious wall, the trunks meeting and pollarded at 18 feet above the ground, as in Kent.

In the jam factory, situated in the old farm buildings, and let to Mr. Beach, some forty hands are employed. In one of the eleven copper cans, just cleaned, is poured a jug of water, and into the water 28 lb. of white sugar—best Dutch crushed, as it is called, being a mixture of half-and-half cane and Beetroot. When the sugar is dissolved, 24 lb. of Raspberries—some of it, perhaps, gathered only an hour or two since—are thrown in, and then the crimson mixture, foaming and bubbling under the heat of steam (50 lb. pressure to the square inch) from the great boiler in the adjoining stable, is for about eight minutes stirred and critically examined with the aid of a long wooden ladle, till, being pronounced ready, it is run off into another copper and carried into the old cattle-shed, now fitted up with dressers and shelves, where it is adroitly transferred to thirty-six bottles, each now containing 1¼ lb. of the most brilliant Raspberry jam. As soon as the air-tight covers are tied on these bottles are ready to be despatched to the four corners of the globe, or, as the case may be, to take their place on the well-laden shelves among the Gooseberries, Currants, and Strawberries, to await their turn to go. Some idea of the extent of Mr. Beach's business may be obtained from the fact that the bottles used in a year cost about £1000. The setting of the fruit is assisted by the visits of bees to the flower, and there is here an apiary consisting of 165 hives, under the care of an experienced bee-master. *Forestry.*

GARDEN PALMS.

(*Continued from p. 729.*)

Calyptrocalyx, Blume.—Only two species of this genus are known, one of which is represented at Kew by a large flowering specimen 12 feet high. The stem is about 6 inches in diameter, marked with numerous rings or scars placed closely together. The head is composed of a rather thick arrangement of spreading pinnate heads with short petioles and regular lance-shaped pointed segments, with the central nerve somewhat prominent on the under-side. I have not seen seeds of this Palm, but they are described as being olive-shaped, as large as a Hazel-nut, and covered with a succulent pericarp, or, when old, brown and fibrous. A tropical genus, preferring a moist and somewhat shaded position.

C. spicatus, Blume.—Moluccas.

Calyptrogyne, Wendland (including Calyptronoma, Grisebach and Wendland.)—Dwarf ornamental Palms, closely related to the Geonomas, in which genus several of the species were at one time included. Their erect long-stalked flower-spikes are developed freely from the axils of the crowded leaves, adding not a little to the grace and beauty of the whole plant. Several of the Kew plants have flowered. The leaves are pinnate, dark shining green, and on flowering specimens about 6 feet long. The pinnæ vary somewhat in width, and in their distances from each other along the rachis; they are lance-shaped with a long tapering point. Fruit egg-shaped, from ½-inch to 1 inch long with a fibry pericarp enclosing an oblong or slightly compressed seed. Cotyledon bipartite.

Like the Geonomas and Chamædoreas these Palms thrive best in a tropical moist and slightly shaded house.

C. elata, Wendland.—Hab. ?

C. Ghiesbreghtiana, Wendland (Geonoma Ghiesbreghtiana, Wendland; G. magnifica and G. Verschaffeltii, Hort.), *Bot. Mag.* t. 5782.—Mexico.

C. sarapiquensis, Wendland.—Hab. ?

C. spicigera, Wendland.—Guatemala.

C. Swartzii, "Mountain Thatch Palm" (Calyptronoma, Grisebach and Wendland).—West Indies.

Caryota, Linnæus.—All the species of Caryota are easy to distinguish from the rest of the Palms by the bipinnate character of their foliage. Like the Calamuses they all are first-class ornamental Palms, both when young and when large in size. In the Palm-house at Kew several species of Caryota are prominent objects of majestic beauty, whilst one of them, viz., C. Rumphiana, is, perhaps, the most noble looking Palm that has ever been seen in this country. The dimensions of this specimen are as follows:—Height of naked stem, 25 feet; of head (measuring to top of highest leaf), 24 feet; spread of head, 40 feet; length of leaf, 22 feet; width in widest part, 17 feet; length and width of segments, 15 inches by 6 inches; approximate number of segments on each leaf, 1820. In the same house, C. Cummingii, C. urens, and C. sobolifera may be seen in finely developed condition, and generally bearing several of their large flower bunches. For large tropical houses there are no Palms better fitted and more likely to prove satisfactory than the Caryotas. They may be planted out when quite young, and a shaded position seems to be no less agreeable to them than one with plenty of light. Quite as much may be said in favour of Caryotas for cultivation in pots in small houses. They are rapid growers, gross feeders and drinkers, and are less prone to fall into a sickly state than the majority of Palms are. Some of the species send out suckers from the bases of the old stems, and these may be used for propagating purposes. All the species have the singular habit of flowering from the top of the stem downwards. "After arriving at maturity they throw out a flowering spadix from the uppermost axil, and then from the next leaf-axil down, and so on downwards till all the leaf-axils down to the very base of the stem have flowered, after which the stem dies." All the Caryotas are unarmed, with the stem, when bared of the sheathing leaf-stalks, brown and annulated. The leaves are never clustered in a dense head, but are produced at rather wide intervals along the stem. The leaf-segments are smooth, shining, broadening from the base upwards, wedge-shaped, sometimes almost rectangular, the end being irregularly toothed or præmorse; in form they are not unlike a fish's fin. The flowers are borne in immense spadices, sometimes 12 feet long by about 2 feet in diameter, and drooping so as to look like a horse's tail. Flowers monœcious. None of the Kew plants have ever ripened fruit. Seeds globular or kidney-shaped, dark brown, covered with a thin, smooth pericarp; in size the seeds vary from that of Peas to Beans—cotyledon with a pair of pinnules.

C. Alberti, F. von Mueller.—Tropical Australia.

C. Blancoi, Hort. Veitch.—Philippine Islands.

C. Cumingii, Loddiges, *Bot. Mag.*, t. 5762.—Philippine Islands.

C. elegans, Hort. Linden.—Hab. ?

C. furfuracea, Blume, var. timbala (C. javanica, Zipp.).—Java.

C. majestica, Hort.—Hab. ?

C. maxima, Blume.—Java.

C. Ochlanda, Hance.—China.

C. Rumphiana, Martius.—Borneo and Moluccas.

C. sobolifera, Wallich.—Arracan and Andaman Islands to Malacca.

C. specicosa, Hort.—Hab. ?

C. urens, Linnæus, "Wine Palm."—Eastern Bengal and Malay Peninsula.

(*To be continued.*)

BEAUDESERT.

FOR beauty of situation, Beaudesert (says a Staffordshire paper to which we are indebted for most of the following particulars) is unrivalled among its peers. Lord Anglesey's house occupies the finest elevation on Cannock Chase, and around it for many miles stretches a beautifully wooded and diversified country. It is, indeed, said to be possible to see on a clear day from the windows of Beaudesert into the counties of Derby, Leicester, Warwick, Salop, Chester, Montgomery, and Flint. The immediate surroundings of the house are picturesquely rugged: valley and hillock, Heather and Broom and brushwood, roll away for miles on every hand. The country hereabout is profusely wooded, and so retired is the situation that the thick belts of woodland seem to shut away the outer world.

Beaudesert, together with extensive tracts of the land surrounding it, was long an appanage of the great Midland See. About the middle of the sixteenth century it came into the possession of Sir William (afterwards first Lord) Paget, one of the prime favourites of Henry VIII., and the direct ancestor in the female line of the present Marquis of Anglesey. Very large grants of land were about this time made to Sir William Paget by the King, and Lord Anglesey still owns 14,344 acres in Staffordshire, and the family received many grants of land and houses, in the locality, during the King's lifetime. There was a house at Beaudesert long before the time of the Pagets, which was altered, enlarged, and in great part rebuilt by Thomas Lord Paget. The principal front was built by him, and is an effective example of late Tudor work. It is of red brick, with stone embellishments. Its height—it has four storeys—is better proportioned to the length of the *façade* than is the case with many buildings of the same period. There are two slightly projecting wings, and the entrance porch, which is entirely of stone, is likewise in relief. This projection terminates on the roof line with an open bell-tower, beneath which is a clock, and this, like each of the wings, is crowned with a gilded vane. The shape of the house is that of the letter E., a fashion of building which was greatly in vogue in the sixteenth century, and even later. The externals of the house were much improved towards the end of the last century, when the gate-house, walls, and some other obstructions were removed. The original characteristics of the building have, however, not been seriously interfered with.

One of the finest apartments at Beaudesert is the principal drawing-room, 42 feet long by 27 feet wide. Upon its walls hangs a particularly fine three-quarter length portrait, by Holbein, of the first Lord Paget. The dress is a furred black gown and bonnet. One of the foreign potentates with whom Lord Paget had relations appears to have entertained a greater respect for Henry VIII.'s favourite than some of his modern critics, for he said of him that "He was not only fit to represent kings, but to be a king himself." The deeds and evidences here collected were largely drawn upon by Shaw in the preparation of his incomplete history of Staffordshire. The great gallery, which is so delightful and distinctive a feature of great country houses of the Tudor and Elizabethan periods, is not wanting at Beaudesert. It runs almost entirely across one portion of the house, and is 97 feet long by 17 feet wide. It has a lofty moulded ceiling, and is one of the pleasantest rooms in the house. The gallery contains some finely carved and inlaid furniture, and recesses in the walls are fitted with bookcases. There is here much glorification of the times of "good Queen Anne," for in compartments over the recesses are painted a series of pictures of the more important battles of the famous army of the Duke of Marlborough, which "swore so dreadfully in Flanders." There is a small gallery over the entrance to the great hall, in which is kept a handsome mahogany-cased organ, presented to a former owner of Beaudesert by George III., who had a nice taste in organs: the poor old King was wont to solace himself during his confinement at Kew by playing upon Handel's own instrument. This organ was made by Pyke. The dining-room is a large and handsome apartment, 40 feet long by 28 feet wide, with a richly-ornamented vaulted ceiling. It was added in the latter days of the eighteenth century. Beaudesert contains many other fine apartments, full of old furniture and adorned with many interesting family portraits and pictures by old masters. It is a house in which comfort is more studied than stateliness.

Beaudesert has long been noted for its extensive range of stabling and coach-houses. These lie at some distance from the house in one of the pretty little valleys which diversify the park. They are entirely modern, and are built of dazzlingly white stone. Beyond the stabling, which forms a long crescent, lie the large gardens, which are mainly devoted to the growth of fruit and vegetables. The flower gardens and pleasure grounds immediately surround the house. To the late Mr. Eames very great praise is due for adopting the sensible but unfortunately not always obvious course of arranging the grounds and gardens with some regard to the surrounding scenery. A finer site for the landscape gardener could hardly be found, and Mr. Eames made his terraces and prospects and vistas in such cunning wise that it is difficult to tell where Nature ends and Art begins. The views from these grounds alike over the park and into the distance are exceedingly fine. The park itself is the very ideal of the picturesque. It is extremely unlike a conventional park, with its dotted trees and level expanse of grass: it is broken and rugged, thickly wooded with groves of old Oaks, opening out into shady glades, where the fallow deer browse coolly in summer and snugly in colder seasons. Hill and valley, grove and dell, make one of the most charming pictures imaginable. There are several springs of water in the park, but nothing worthy the name of a stream. Water is, indeed, the one scenic effect which is lacking in the lovely surroundings of Beaudesert.

Mr. J. Renshaw, the present head-gardener, states that the quaint-looking flower garden, which consists of a rather intricate pattern, in the fashion of the Hyacinth and Tulip beds of a former age, is now usually planted with the ordinary kinds of bedding-out subjects, and which doubtless forms in summer and early spring a pleasing picture as seen from the windows, and being surrounded by a wall on several, and by the house itself on one side, it makes a retired spot for a stroll or a lounge.

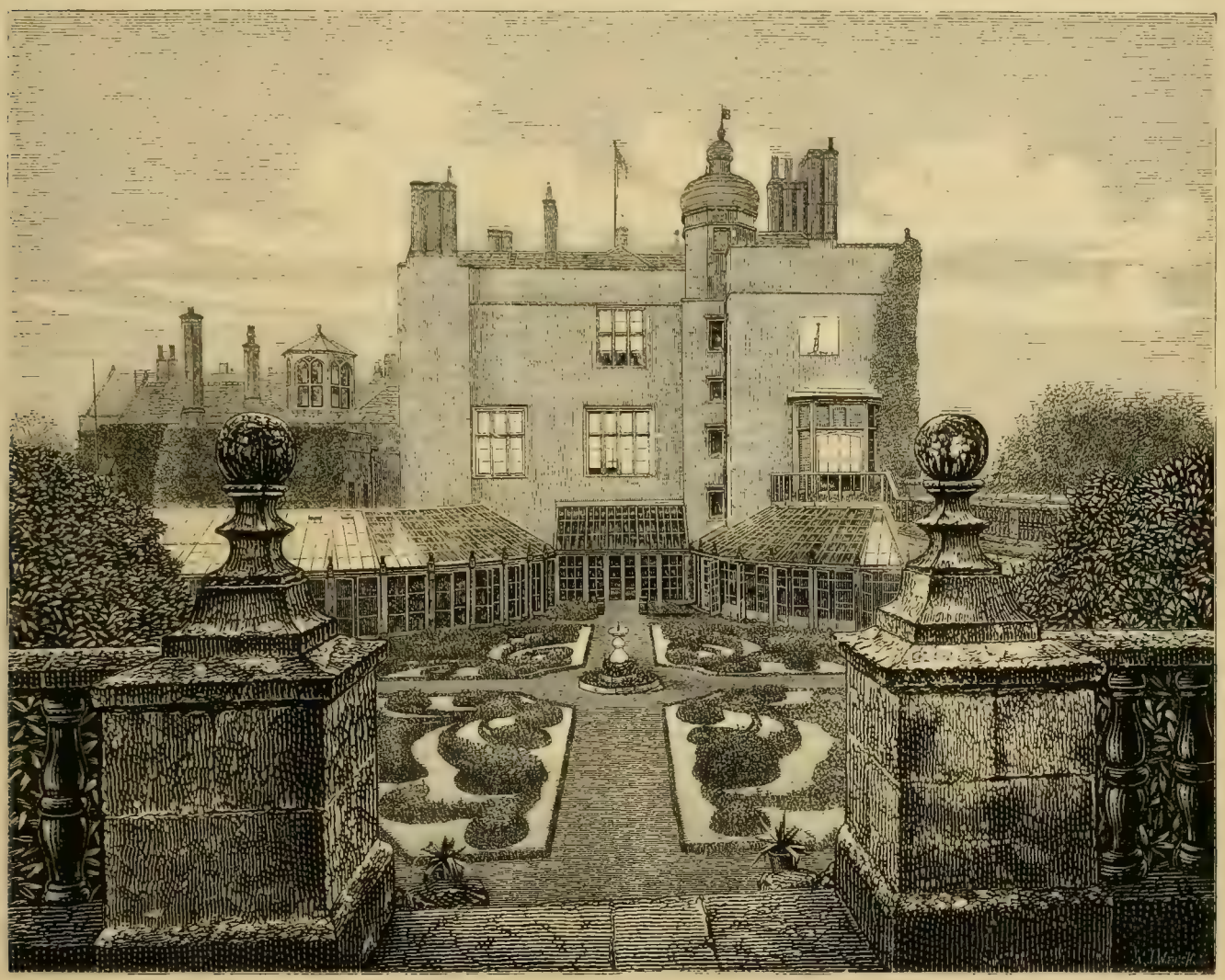


Fig. 129.—The flower garden at Beaudesert.

ALPINE PLANTS.

Alchemilla alpina and Saxifraga aizoides. — The nonappearance of these on the Welsh hills made their discovery some time ago in Perthshire all the more welcome. The alpine Lady's Mantle I found pretty abundant alongside the mountain rivulets and on the little patches of grass which here and there occur on most hillsides. From the common Lady's Mantle this alpine species is readily known by the leaves, which are much smaller, divided almost to the base, and only serrated at the extremity. It is one of our most elegant native plants; indeed, I am not aware that by any it is surpassed in beauty of foliage, for the soft, white, silvery hairs with which the stem and undersides of the leaves are covered give to the plant an unusual and beautiful appearance. The procumbent habit renders this plant valuable for the

rock garden, where it delights to nestle in any damp, gritty nook.

In the yellow mountain Saxifrage we have another beautiful addition to rock plants. It is plentiful in almost similar situations to the Alchemilla, but evidently prefers a moist situation, as the finest patches I noticed were adhering to the sides of damp, almost dripping rocks. It seldom exceeds a few inches in height, and is covered for a considerable part of the season with an abundance of desirable yellow flowers. *A. D. Webster.*

The Rosery.

TREATMENT OF POT ROSES.—The main object of growing Roses in pots is to get them in flower when they cannot be obtained out-of-doors, and they are usually more highly esteemed in the spring than late in the autumn. Roses are often not so well managed in private gardens as they ought to be, the usual reason for this being the plants are not sufficiently cared for during the period they are out of bloom. It is a treat during the spring months of no ordinary kind to visit large nurseries where Roses are extensively grown in pots. The plants are in the best possible health, leaf and growth, buds and flowers are perfect. How is it all managed? some persons may ask. The reason is not far to seek. At no period are the plants neglected; during every month of the year they are under the care of the cultivator, all their wants being duly supplied. We talk about the resting period of plants and trees, but at no season do they absolutely rest, and it is dangerous to act at any period of the Rose's growth as if the plant suspended its functions. I have seen a collection of pot Roses placed into the corner of an open shed in the early part of the winter, and there they were left until the soil was dust-dry and the branches loaded with a thick coat of dust. Good blooms could not be expected from plants so ill-used the following season. During the summer and autumn months the plants are seldom well cared for in private gardens, they are placed out-of-doors, it may be in a good position, but the person who has charge of the Roses is probably overburdened with work during that period, and although the Roses may be well attended to with water, they suffer from attacks of mildew and greenfly, which cripple the growth by preventing its full development. In hot weather red-spider may also attack the old leaves, while the aphis is checking or destroying the young ones. Remedies are applied when it is too late, and herein is the difference between the trade grower and that of gardeners or amateurs. The instant mildew appears on the leaves it is destroyed or checked by a slight dusting of sulphur. Greenfly is destroyed by dusting with tobacco powder, or in some other way, and the Rose bushes are kept growing and in good time completely mature their wood and buds.

By the end of September the earliest forced bushes will have completed their growth, and the latest by the end of the following month. In October the early flowering plants may be pruned, but before doing so it is best to allow them to become comparatively dry at the roots to prevent bleeding. They should have been repotted previous to being pruned; indeed, it is better that they be well established in their flowering-pots by that time. The month of August is a good time to repot them.

The Rose likes a rich, substantial compost—turfy loam four parts, one part decayed stable manure, and an 8-inch potful of crushed bones to each barrowload of soil; some broken charcoal may also be added to it; it is valuable by its mechanical action to keep the compost open and sweet. The pruning should be done at intervals; in fact, those that are to flower late must not be pruned until February. Referring again to the earliest bloomers: after pruning they must be kept rather dry than wet, and in a cool, airy place, but it is a mistake to allow them to become dust-dry; that treatment destroys the points of the active rootlets, which has the effect of materially weakening the subsequent growths, with a corresponding deterioration in the quality of the flowers. The roots are never dormant, but are in constant growth when the temperature is above the freezing-point. If the plants can be placed in a forcing-house, it is not difficult to grow them to a high state of perfection. A light house, where they can be placed near the glass, with the right temperature until the flowers open, will command success; and it is here that the professional grower has the advantage—in light span-roofed houses in which the Roses are constantly under the care of some one thoroughly conversant with their needs, and which are set apart entirely for Roses, the temperature and ventilation has not to be altered to suit a miscellaneous collection of other plants. I have had the greatest success with them when we could place them in a vinery that was started early in December. The moist atmosphere, and a temperature of about 45°, which was gradually increased as the buds moved, seemed to answer admirably; by the time the Vine leaves began to shade the Roses, it was time to start the second house, and they were removed into that where the flower-buds began to open before the Vine leaves were developed; they were then removed into the greenhouse or conservatory. What they require when forced early is a rather low temperature to begin with, and later they must not be forced too rapidly, unless there is a corresponding development of the roots. Under glass, as in the open air, the leaves and young growths are attacked by mildew and greenfly, but neither of these parasites should be allowed to rest a day on the plants.

When they are in full growth they may be supplied with weak manure-water about twice in a week, and I do not care to syringe them after the buds are well started. When the temperature in which they are growing is about right, and the atmosphere sufficiently moist, the leaves will have a drop of moisture attached to the serratures of every leaf in the morning. The treatment given above is for hybrid perpetual, hybrid China, or other strong-growing Roses. The Teas, as I have stated in a previous number, should have a third part of light sandy peat added to the above compost, and the plants ought not to be turned out-of-doors at all, but should be kept in a light airy house all through the season. I do not say that it is absolutely necessary that they should be kept under glass, but if it can be done so much the better. *J. Douglas.*

FRUIT NOTES.

COURT PENDU PLAT APPLE.—The question raised in these columns recently by Mr. Byass as to the position of this well-known Apple in a competition for dessert kinds has not been satisfactorily replied to by Mr. Rutland, because the merits of the case are not touched. Mr. Byass complained that, when showing a small collection of dessert Apples at Southampton in 1883, he was disqualified because a judge objected to Court Pendu Plat, one kind in the collection. Of course the term "disqualified" is here improperly used, because if he exhibited the correct number of fruits, not a score of judges could disqualify him. It may be that the "judge" thought his sample of the kind named was wanting in quality, and therefore preferred another collection, but that is a matter upon which only those present at the time could give an opinion. The dish of Court Pendu Plats shown at the recent exhibition may have been, on the other hand, excellent samples, and if they were, were doubtless fully entitled to all the honours. As to the position Court Pendu Plat may occupy as a dessert kind, it is worthy of remark that it is always very prominent at Apple competitions; that it is classed in the *Fruit Manual* as an excellent kind, and in the Apple Congress report as of first quality; indeed, no fewer than seventy-one dishes of it were shown at that congress. Again, in the Apple election of dessert kinds by 130 exhibitors from all parts of the country, out of sixty kinds selected Court Pendu Plat comes tenth on the list with twenty-nine votes, thus showing that it is a kind held generally in high estimation. No doubt there are many more free-bearing kinds, but the one under notice, if not of the best, is one of excellent parts, and will long be exhibited in collections of dessert kinds. *A. D.*

APPLE BRAMLEY SEEDLING.—There has recently been an article in the *Daily Telegraph* upon the Chiswick Apple Congress, but the Bramley Seedling fruit is omitted, and I wish its superiority to be known far and wide. As a late culinary Apple it is not surpassed, and I have had the fruit in full perfection as late as even the middle of May. The tree, in growth, is strong, healthy, and handsome, and a capital bearer. Trees of other sorts suffered with me during the unfavourable seasons three and four years ago, but Bramley Seedling was not in the least degree affected, nor did the Apple crop fail. I am aware that this Apple obtained a First-class Certificate at Chiswick in 1883, where my neighbour, Mr. Merryweather, of Southwell, sent some samples. It is not merely in this part of England that it flourishes, for Mr. Merryweather some years ago sent some trees into the South, and he has more lately been informed that the fruit gives the highest satisfaction. *E. W. Garrow, Bilsthorpe Rectory.*

CONKLIND PEACH.—This is figured in a recent number of the *Revue Horticole*, and is described as a prolific variety ripening at the end of August. The fruit is a freestone of medium size, apricot-yellow, flushed with deep red, with a deep suture and a delicate flavour. The leaves have globose glands, and the flowers are large and rosy.

GARDEN WORK.

WINTER has come upon us with a suddenness that but few, if any of us expected, for while enjoying such lovely open weather we could hardly realise that we were nearing December; but frosts and a heavy fall of snow have brought the fact home to us, and without some plan or forethought we shall soon be walking about imagining we have nothing to do. This unhappy condition need never fall to the lot of gardeners, for instead of being frozen out, such a change as that we are now experiencing ought to make us extra busy, as with fruit and root stores to look over and see to, sticks and labels to make, pots, glass, plants, and painted woodwork to wash and clean, manure and soil heaps to turn and wheel on the land, sheds to clear up, and tools to sharpen or mend, every one may be kept profitably employed for days or weeks at a stretch. Turning to the roots first, it should be borne in mind that nothing suffers so much in a general way as Potatos, which, heaped together, as they usually are, and left to themselves, generate heat and sweat, and unless the heat and moisture are let off by turning or moving the tubers many of them rot, and the whole of them sprout, the decay causing taint, and this, with the sprouting, detracts from the quality and quite spoils the flavour. To keep Potatos in good order there is no place like a dark shed or cellar, where they can be laid out on a hard dry floor, when they may easily be shovelled over and thus moved frequently without any handling. Tubers intended for seed ought to be spread out very thin and never covered, unless there is danger of frost reaching them, for when there is anything over them it is surprising how soon they begin to grow, and exhaust themselves by sending out numbers of shoots. This being so, every effort should be made to prevent such weakening by giving plenty of air, that the temperature of the shed may be kept down; and where it can be done it is a good plan to lay all kidney kinds out singly, or, better still, to pack them on end, crowns uppermost, in shallow boxes or on shelves, when they break and sprout strong. If Onions are to be had sound they must be strung and hung up, as it is only by having the air playing on and among them that they can be kept from decay. The best place I have ever found for them is an open shed where there is always a draught passing through, and here, roped up and suspended to nails, they remain plump and sound till others come in the spring. If Carrots and Beet are properly stored away they require little looking to, but if not stacked they should have that attention, and the spaces between filled in with sand or dry earth, which will keep them in excellent order. Fruit of all kind needs inspection daily, and any with the least spot or blemish ought to be picked out and used first, for if the room is the least damp fungus starts on the affected parts, and decay follows quickly after. If fires be used to dry the air the ventilators should be thrown open, that the temperature may not be raised, as any extra heat ripens Apples and Pears rapidly, and makes the latter go soft in the middle. Labels or tallies are best made out of yellow deal laths, as they are most durable, but stakes for soft-wooded plant tying are preferable from Elm and Nut stubs, and if these are pointed, trimmed and tied up close and straight in bundles now they will be seasoned and hardened when the time comes to use them. For Achimenes and such-like Privet shoots answer well, but these should be cut and stored like the others. Hooked pegs for layering Strawberries, Carnations, &c., or fastening down bedding plants, may be got in plenty from old Birch brooms, which ought to be saved for the purpose, but for Roses and shrubs I prefer stout galvanised wire,

and a stock may be made from this, of various lengths, to suit the soil or the plants for which they are wanted.

If people only knew how important light and sun are at this dull season, they would never tolerate dirty glass, which obstructs these vivifying and life-giving agents; and this being so the interior of houses should be thoroughly washed, which will not only let in the much desired light, but improve the paint and wood and do away with innumerable insects. The way to set about the work is to remove all plants and get some hot water in which some soft-soap has been dissolved, and with this the whole inner surface of the house should be syringed, that the dirt may be soaked, when a very little scrubbing will bring the whole off. For the glass there is nothing equal to a hand-brush, the long bristles of which spread over a large space, and are sufficiently stiff to start the slimy deposit, which, when once moved, may be rinsed off by the aid of the garden engine, which ought to be plied with force immediately the scrubbing is done. The next thing is to dry the floors and walls by having heat in the pipes and air on, and as soon as the walls are fit they should be lime-washed, which, with the other cleansing process, will render any house sweet and clean, and in first-rate order for growing the plants. If these need overhauling they should be thoroughly looked to, and if the leaves are large the whole may easily be sponged or hand-washed with clear soapy water, which, by removing any deposit blocking and filling the pores, does an immense deal of good, as the plants can then breathe freely, and regain their lost health.

In case of insects on the foliage, such as scale or thrips, to which Camellias and Azaleas are subject, the best plan is to lay the plants on their sides and syringe them so as to thoroughly wet them all over with dilute nicotine soap, which destroys the parasites at once, and a rinsing after will carry them off. Mealy-bugs on stove subjects are not so easily dealt with, and can only be vanquished by waging incessant war, first wetting them with strong insecticides, and then bringing them under the force of water, so as to get them out of the buds and all crevices where they secrete and web themselves over. Not only is it necessary for the well-doing of plants that they should be free from insects, and have clean faces and houses in the same condition to grow in, but they must also have clean pots, for without these the soil is sure to become stagnant and sour, and roots, when it is in that state, cannot live. Here, then, is another job on which hands may be profitably employed, and besides those pots with plants in there are all the empties, which should be plunged in warm water to soak, when they may be scrubbed quickly and placed in an inverted position, one on the other, to dry, after which they should be packed away according to size. *J. S.*

Florists' Flowers.

Chrysanthemum Cullingfordi.—This very fine new variety is a disinct and decided advance in the section of reflexed Chrysanthemums, it being so large in size, full in substance, broad in the petal, and brilliant in colour. It distances the old types, such as Julia Lagravere, King of Crimsons, Crimson Velvet, and George Stevens, a new variety, which created such a sensation last year. It is fitting that this fine variety should be named after one who has done such good service to floriculture as Mr. W. H. Cullingford; and any one attending some of the recent Chrysanthemum shows must have been struck with the fine character of many of the reflexed flowers. They fall behind the incurved flowers in relative merit; but when well grown they produce large ball-like flowers; and they are very free of bloom, especially Christine and its varieties. For conservatory decoration Julia Lagravere can hold its own for richness of colour and freedom of bloom against many other varieties, and it will always be a great favourite. The new reflexed Japanese variety, Salteri, is to be recommended for its colour and handsome flowers; it appears to be very free, and will make a fine decorative variety. There is one thing to be said in favour of the reflexed Chrysanthemums; that while they can, to some extent, be helped in appearance by the manipulation of the dresser, it can never be to such an extent as in the case of the incurved flowers. *D., Ealing,*

The Flower Garden.

Where alterations in the way of additions or improvements, either in the flower garden, lawn, or shrubbery, have still to be carried out, every effort should be made to push forward such work now, at this comparatively leisure season of the year, so as not to allow it to interfere with the general routine work which comes with the advent of the new year. In all ground work, such as excavating, levelling, terrace and road making, and any similar work, it is difficult to give anything like precise or useful directions for its performance. One of the most important points, one which requires careful consideration and calculation beforehand, and that must be well understood, is the excavation and removal of earth. The necessary levels should be accurately taken, so as to prevent the unnecessary removal of soil from one place to another. Too often this kind of work is entered upon without a clear conception of the ultimate object desired, and also without careful calculation of the best method of performing it, with the result that the earth has to be moved two or three times over, and much delay is occasioned thereby. Another important point when forming terraces or embankments is to thoroughly consolidate the material as the work proceeds, so as to prevent any possibility of sinkage at a later period—an evil which frequently follows indifferent workmanship, and often necessitates its being re-done. Again, in finishing off the sloping banks or terraces, especially where they surround or come in close contact with pedestals, retaining walls, or other masonry, the angles or edges should be left as firm, even, and sharp as possible, so as to agree in character and outline as nearly as possible with the more accurate and permanent embellishments which they surround, the effect of which they are intended to heighten and improve, but which by bad execution they frequently disfigure. Roads and walks, both in the flower garden and pleasure grounds, are also frequently ill-made, and instead of being a pleasure and comfort to walk on are a source of annoyance and discomfort. In forming roads or walks much will depend on the situation and subsoil. Where the position is nearly level, and the subsoil retentive of moisture, efficient drainage must be secured so as to remove the subsoil water and rain, otherwise sound dry walks cannot be ensured. Where the subsoil is naturally porous, drains, except shallow ones, for the removal of surface water during heavy storms are not needed. A good sound porous foundation must, however, be provided, and to do this efficiently the natural soil must be removed to a depth of 9 to 18 inches on the outsides, sloping to 2 or 3 feet in the centre of the walk, according to its width. The trench so formed must be then filled in with stones and gravel arranged in four or five layers, each of which should be made perfectly firm and even before the next layer is laid on. As to these respective layers, the component parts may range from large flints, boulders, brick-bats, or large lumps of hard chalk to the finest gravel: the chalk must not, however, be allowed nearer than 2 feet from the surface, otherwise the lumps become pulverised by severe frosts and prevent quick drainage. The stones and gravel comprising the respective layers should be as nearly equal in size as possible. They should be laid on the same principle as a filter-bed, the finest being on the surface and the rough stones at the base. A road or walk so formed will always be firm, dry, and pleasant to walk on even immediately after the heaviest storms, while those indifferently made are the greatest sources of discomfort around a residence.

The grass edges of walks and roads should now be rectified where the outlines have becomes irregular and uneven by frequent use. Exact measurement should be made at frequent intervals, and the turf relaid and cut to the proper line, after which new gravel may be laid on, so as to give them a neat and well dressed appearance. The lawn should be kept free from leaves and rubbish, and if frequent sweeping and rolling in dry weather are also attended to, with an occasional light dressing of finely sifted lime, wood-ashes, screened burnt rubbish, or soot in rainy weather, a dark green velvety turf, free from moss, will be produced, which will endure in a good condition through the ensuing summer. *T. S. C.*

The Kitchen Garden.

Horse Radish.—This is a good time to make plantings of this useful root—a root which, if worth growing at-all, is worth growing well. And with this object in view it will be necessary to take up a good lot of the old plantations to select roots from for making the new, which should be made as follows:—Open a trench 2 feet wide and about 18 inches deep, which fill up and raise to the height of 18 inches from the surface with well decomposed dung and leaves from an old Cucumber-bed, treading the whole well together as the ridge is being made into the required shape. Then put the line down 6 inches from either side of the ridge, and cover the latter with soil, thus making a ridge 18 inches wide on the top, with the centre 3 inches lower than the side and end, forming a sort of trough for the water. In planting select the second sized roots, which, if they are to be had, should be from 20 to 30 inches long, and having every little rootlet the entire length rubbed off by drawing the roots through the closed hand covered with a piece of coarse cloth; then plant them in their entirety with a long dibber, two rows, 1 foot apart, and 8 or 9 inches asunder in the row, on the ridge, and slanting slightly to the interior of the latter, with the crowns about 1 inch under the surface. A planting should be made every year in proportion to the quantity of Horse Radish used in the year, so as to always have a supply of it good in quality and quantity. No opportunity should be lost in pushing forward to a finish any work that may have got in arrears. The rubbish heap will by this time have accumulated to a goodly size, and have been turned over a few times and divided into separate heaps according to the state of decomposition, in readiness for present and future use. Enough Jerusalem Artichokes may be taken up at one time to serve for a week or two, but in case of frost the ground should be covered with litter to prevent its being frozen. The stock of Onions, Shallots, &c., should be looked over occasionally, and any bad ones that may happen to be amongst them removed forthwith.

Forcing Department.—About the middle of next week the necessary number of hotbeds should be made for the forcing of Potatos, Carrots, Radishes, &c. The beds should be made sufficiently high at the outset to admit of their subsiding a couple of feet, during the next few months, after which, in order to retain a moderate heat in the beds, they should be about 4 feet high. When the frames are placed upon the beds it will be necessary to put a little dung and leaves inside them to make the depth at the back part correspond with that of the front, and over this a couple of inches thick of rotten dung, then 9 or 10 inches of light garden soil and leaf-mould (about three parts of the former to one of the latter), should be in the frames a few days so as to become slightly warmed before planting the Potatos. These should be planted in rows 1 foot asunder and 7 or 8 inches apart in the row. Before putting the soil on the bed tread the latter firmly over, and in doing so allow the centre to be fully high, inasmuch as it is the hottest part of the bed, and consequently the first to decompose and subside. Previous to sowing the Carrot seeds, a few shovelfuls of fresh soot should be scattered over the surface of the bed and be scratched in with the rake when levelling the soil. Early Nantes Horn and James' Scarlet Intermediate are excellent varieties for early work, and may be sown in rows at from 9 inches to 1 foot asunder, and where accommodation of this sort is not plentiful a row of Wood's Frame Radish may be sown between the Carrots, covered with half an inch of sifted soil, and patted with the back of the spade or a board, to compress it. At first these frames will require special attention in the way of airing them, and in order to prevent steam arising and becoming pent-up in the frames it will be advisable to leave a little air on them day and night for the present, and subsequently to give sufficient to prevent the occupants from making a weakly growth. See that good successional supplies of Asparagus, Rhubarb, and Seakale roots are introduced into this department at short intervals, and that young Tomato plants are shifted into larger pots before they become pot-bound at the roots. Make successional sowings of French Beans in 8-inch pots a little more than half filled with light rich soil. Eight or nine seeds in each pot will be ample, and the pots may be placed anywhere in heat until the plants come through the soil, when they should be placed near the light, and when they have grown a few inches above the rim of the pot be earthed-up. The points of the shoots must be pinched off, to make them branch. Syringe the plants more or less frequently, according to the high or low temperature of the house, of which 55° to 60° will be high enough at night, to check the increase, if not actually to prevent the attacks of red-spider. See that the supplies of Mustard and Cress, Mint and Tarragon are maintained. *H. W. Ward, Longford Castle, Wilts.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec 15	Sale of Dutch Bulbs, at Stevens' Rooms Final Sale of Dutch Bulbs, at Protheroe & Morris' Rooms
TUESDAY,	Dec 16	Sale of the late Mr. Bockett's Collection of Cool Established Orchids, at Protheroe & Morris' Rooms (two days); and of Camellias, Roses, Azaleas, at their City Rooms
WEDNESDAY,	Dec 17	Sale of Hardy Plants and Bulbs, at Stevens' Rooms.
THURSDAY,	Dec. 18	Sale of Flowering Orchids, at Stevens' Rooms Sale of Lilium auratum, Plants, and Roses, at Protheroe & Morris' Rooms
FRIDAY,	Dec. 19	Sale of Imported Orchids, at Protheroe & Morris' Rooms
SATURDAY,	Dec 20	Sale of Hardy Plants and Bulbs, at Stevens' Rooms

THE last meetings of the year of the ROYAL HORTICULTURAL SOCIETY, though necessarily thinly attended by the general body of Fellows and visitors, are generally invested with considerable importance, and so it was on Tuesday last. Not only the affairs of the Society itself, but of some of the more or less affiliated societies came under review. As to the general condition of the parent Society—its practically homeless, houseless, headless condition — we need say nothing on the present occasion. This must and will form the subject of earnest consideration hereafter. For the moment, also, we would say nothing as to the heart of the Society, the Chiswick garden, which is in a more satisfactory state than most other parts of the Society's organism. As to the committees, which are not inappropriately called its backbone, some important business was transacted. It is not necessary for us to endeavour to eulogise these committees. Every one is agreed as to their usefulness, though there may be differences of opinion as to the method in which they are worked. It will be remembered that last year, in response to a feeling that certain classes of plants, unimportant in a commercial sense, or which are "out of fashion," were practically ignored, it was decided, as an experiment, to divide one of the committees, the Floral, into two divisions—Section A. to take cognisance in general terms of new plants, and Section B. of that group of plants more particularly distinguished as florists' flowers. Remembering what had taken place in former years, and the just complaints of many plant-lovers not specially interested in the commercial aspect of the matter, we assented, in principle, to the division in question; but we are bound to say that in practice the segregation has acted badly. We still hold the opinion that, properly carried out, the division would be advantageous, but it has not been properly carried out. Plants which should have been shown in Section A. have drifted somehow into Section B., and plants upon which the members of Section B. would have been the most appropriate judges have been adjudicated upon by the members of Section A. The result has been more or less—more rather than less—of a muddle. We are not now concerned with pointing out how all this might have been avoided. It was not; but we may readily find an excuse for this defect in the overwork thrust upon the Superintendent in connection with the wholly exceptional state of things brought about by the Health Exhibition, and the very numerous and very successful shows held under its auspices. Taking things as we find them, we are not disposed to attach blame in any quarter, but meanwhile the fact remains, that the subdivision has worked so badly in practice, that there was a unanimous wish on the part of all concerned to revert to the original undivided state. But this is not all. Complaints have reached us—they always do—that the constitution or the mode of election into the committees is not all it should be. There is some ground for these complaints—there is usually in the very best regulated societies. As at present organised the Council appoint the members of the several committees, and, we believe, have considerable difficulty in finding suitable persons who can and will serve. Complaints nevertheless arise, that this or that person has not been appointed, or that this or that member ought to be removed, is inefficient, or has served too long, or that he is, more or less, biased—it may be honestly or unconsciously—in favour of particular exhibitors. The feeling has thus arisen, first, that the separation into Section A. and Section B. be no longer carried out, on which point definite action has been taken in the shape of a resolution addressed to the Council appended to this article; and, next, that the committees themselves should have some voice in the election of members, and some control over the rules enacted for the transaction of their business. Seeing that the committees transact all the really horticultural work of the Society—that they give their services at a great sacrifice to themselves—it is not unreasonable that they should have some share both in the election of members and in the arrangement of the business of the meetings. As matters stand at present, the most revolutionary changes may be made, and have been made, by the Council without the committees even knowing that the change has been proposed till it becomes law. It is, in our opinion, only reasonable that in future the committees themselves should nominate each year—of course, subject to the will of the Council — a certain proportion of new members to replace those who disappear from effluxion of time, from non-attendance, or other cause, and that they should at least be consulted before any change of importance be carried out. We cannot doubt, for instance, that the failure of the subdivision of which we have spoken would have been entirely obviated had the course been pursued of calling a joint meeting of all the committees previously to confer with the Council. The greatest difficulty of all, however, is to find persons who are at once competent, independent, and who will give the necessary time to the work; and this difficulty, we fear, will still arise, whatever means be adopted to improve the working of the committees.

On the same day, and at the same place, the affairs of the National Auricula and National Carnation and Picotee Society (Southern Section), came under review. It appears that up to this time no definite code of rules has been in operation in this curiously composite Society, and a meeting was called some time since to consider the matter. This meeting came to the conclusion that the heretofore existing state of things was not satisfactory, and was the less so in that dissensions had arisen between the two secretaries, in consequence of which one of them, Mr. DOUGLAS, tendered his resignation, and it was understood that the President had, or intended to do so likewise. To remedy this state of things certain measures were proposed and adopted, if not unanimously, at least by a large majority. At a general meeting, however, called to further consider the matter, the resolutions adopted at the former meeting were only carried by ten to nine, but this business being disposed of, the meeting proceeded to discuss the proposed rules, most of which were adopted with some modifications, while others were relegated to the framers of future schedules, including the one relating to the very important question as to what constitutes an "amateur." Into the personal questions involved we do not care to enter; it must suffice to point out that, when the officials of a society are at hopeless issue, some rearrangement becomes an obvious necessity, and it is for the members at large to decide what that rearrangement should be. We are here concerned with the more generally important question as to the definition of amateur, and we greatly regret that no conclusion was definitely come to upon this burning question. Mr. HIBBERD'S tact as Chairman, under the circumstances a delicate position, met with general admiration.

The following is the text of the resolution sent up from the Floral Committee to the Council and alluded to above :—

"That the Council be respectfully informed that this committee has endeavoured loyally to conform to regulations adopted by the Council for the present year, the chief feature of which is the division of the committee into two sections. The committee had no opportunity of expressing an opinion in advance of the change, but now that a year has elapsed, feels bound to say that the change has proved unfavourable to the despatch of business. The committee in its divided state cannot command the variety of knowledge and fulness of judgment that are requisite to its deliberations, and the several members, being restricted in their critical consideration of subjects submitted, feel less interest than formerly in the business that calls them together. Moreover, the restriction limits their compensation for the time and attention their work demands. Under former arrangements the consideration of every subject by the whole body was of advantage to all, irrespective of individual opinions, and the votes finally taken. (Signed)

"JAMES O'BRIEN, Chairman A. section.

"SHIRLEY HIBBERD, Chairman B. section."

—— DR. VOELCKER.—The death of Dr. VOELCKER removes from our midst a most able, a most agreeable, and a most conscientious man. Always willing to assist, he was never desirous of thrusting himself forward. Had he so chosen he could no doubt have taken high rank as an original investigator, he preferred rather to apply his great talent and conscientiousness to the advancement of practical agriculture. The proper use of suitable manures was one of his specialities, while he effected much good by protecting farmers against adulterations of manures and feeding stuff. It is sad to think that his useful career should have terminated at so early an age as sixty-two, and still more sad to reflect that in all probability his premature death has been accelerated by over-work. For some years Dr. VOELCKER held the post of Professor of Chemistry at the Royal Agricultural College, Cirencester, resigning his post there together with several of the other Professors, amongst them Prof. BUCKMAN, whose death occurred only a few days before that of his old colleague. Dr. VOELCKER was for some time a member of the Scientific Committee of the Royal Horticultural Society, and, like Prof. BUCKMAN, was an occasional correspondent of this journal.

—— "THE FLORIST AND POMOLOGIST."—The December number of this periodical, we regret to say, is to be the last. It has been in existence since 1848, and represents thirty-seven years of labour and thirty-seven years of progress. More than 600 coloured illustrations have been issued, and of these an index has been given in recent numbers, which will often call to recollection the old days of the *Florist* and its conductors—SPENCER of Bowood, CHARLES TURNER, and last, not least, THOMAS MOORE. It has been honestly and conscientiously conducted, and while we shall miss its monthly appearance, the coloured plates and the index will render reference to an old friend frequent and agreeable.

—— NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—M. LÉON SAY, Senateur, has been elected President of this Society, in place of the late M. LAVALLÉE.

—— THE QUEEN'S SEEDSMEN.—Messrs. SUTTON & SONS, who were the first seedsmen appointed by special warrant to H.R.H. the Prince of WALES, have received a Royal Warrant appointing them seedsmen to Her Majesty the QUEEN, after having been honoured with Her Majesty's commands for thirty consecutive years.

—— "THE CITY DIARY."—This useful compilation by Messrs. W. H. & L. COLLINGRIDGE, 148 and 149, Aldersgate, contains a great quantity of useful information about the City of London—its guilds, courts, aldermen, police, clergy, &c.—and should be found in every business man's desk.

—— NATIONAL HORTICULTURAL SOCIETY OF FRANCE.—A general meeting will be held at 84, Rue de Grenelle, S. G., Paris, on Thursday, the 18th inst., for the purpose of electing the Council and



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MY HOUSE AMONG THE PALMS.

officers, viz., two Vice-Presidents, two Secretaries, and three members of Council. The first meeting for the year 1885 will be held on Thursday, January 8, and a general meeting on January 22.

—— GHENT HORTICULTURAL.—At the monthly meeting of this Society awards were made as follows :—

Certificates of Merit to the Compagnie Continentale d'Horticulture à Gand, for Caraguata cardinalis, Vriesea Pastuchoffiana, Carludovica Plumieri, and Zamia Tonkinensis; to M. PYNAERT VAN GEERT, for Caraguata sanguinea.

Cultural Certificates to M. AD. D'HAENE, of Ghent, for Croton volutus; to M. ED. PYNAERT VAN GEERT, for Schismatoglossis Robellini; and to M. AUG. VAN GEERT, sen., Ghent, for Cattleya maxima.

Commended: M. A. D'HAENE, for Tillandsia musaica and Geonoma species nova; MM. J. BRAY, Ghent, for Cypripedium Spicerianum; Compagnie Continentale d'Horticulture, for Sonerilla Madame Valésch; and to M. L. DE SMET DUVIVIER, for Pescatorea Sanderiana.

—— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held, by kind permission of the Council of the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 17th inst., at 7 P.M., the following papers will be read :—"On the Reduction of Temperature Means from Short Series of Observations to the Equivalents of Longer Periods" (this paper will be in type before the meeting); by Dr. JULIUS HANN, Hon. Mem. R.Met.Soc. "The Diversity of Scales for Registering the Force of Wind;" by CHARLES HARDING, F.R.Met.Soc. "Report on the Phenological Observations for 1884;" by the Rev. T. A. PRESTON, M.A., F.R.Met.Soc. As the draft list of officers and Council for the year 1885 will be prepared at the next Council meeting, it is requested that those Fellows who wish to suggest names for the new Council will send them in before the 17th inst.

—— THE FALLOWFIELD ORCHIDS.—The principal prices realised at the sale of the Fallowfield Orchids sold by PROTHEROE & MORRIS at their Rooms, on December 9, were :—Cypripedium politum, 6½ guineas; Aërides maculosum, 6 guineas; Vanda Sanderiana, 11 guineas; Cypripedium vexillarium, 40 guineas; Cattleya Trianæ alba, 5½ guineas.

—— SOCIETY OF ARTS.—At the weekly meeting of this Society on Wednesday next a paper is to be read by Mr. P. L. SIMMONDS on "Our Timber Supplies, Past, Present, and Future." Sir CHARLES TUPPER, K.C.M.G., High Commissioner for the Dominion of Canada, will preside on the occasion.

—— LINNEAN SOCIETY.—Papers to be read on Thursday, December 18, at 8 P.M.:—1, "Contrivances for Self-fertilisation in some Orchids;" H. O. FORBES. 2, "Brain of Carnivora;" Professor MIVART. 3, "The Plants of Darjeeling;" C. B CLARKE. 4, "Ornithological Notes;" T. E. GUNN. 5, "Aërial and Submerged Leaves of Ranunculus lingua;" F. C. S. ROPER.

—— CAPE BULBS.—We have received a catalogue of bulbous and other plants collected for and grown for export by the authorities of the Cape Town Botanic Garden. We should not, under ordinary circumstances, mention a trade list other than in the advertising columns, lest we might incur the charge of partiality; but the circumstances are so exceptional that we do not hesitate to do so. In the first place, the bulbs offered are of a character rarely met with in the trade, comprising many old favourites figured in the early volumes of the *Botanical Magazine*, together with terrestrial Orchids, some of which have not been known in cultivation hitherto. Many of the plants in this list have been grown from seed in the Cape Town Garden, the only reliable plan when numbers are required. Some of the older species sent over by BOWIE and MASSON have never been found of late years, such as Daubenya aurea, Spatalanthus speciosus, &c. It may be mentioned incidentally that a number of drawings of MASSON'S have lately been presented to the herbarium at the Natural History Museum, South Kensington, by Mr. CHARLES LEE, some of them representing plants introduced by this historic firm many years ago, others representing plants concerning which no further information has been since forthcoming. Professor MACOWAN suggests that these plants will eventually be found in the Malmesbury or Clanwilliam district. Those desirous of obtaining the varieties offered in the list should apply to Mr. HUTT, of the Botanic Garden, Cape Town. Messrs. SILBERAD & SON, 25, Savage Gardens, Crutched Friars, act as receiving or forwarding agents. If there is any excuse for a Botanic Garden devoting itself to work which would in general be better done by a nurseryman, it is to be found in the peculiar nature of the plants offered.

—— SCHEDULES FOR SELF-INSTRUCTION.—Mr. PERCY INGRAM has forwarded to us, by way of illustration, schedules relating to the cultivation of plants, which appear to us to be admirably suited for instructional purposes. A large sheet of paper is ruled into compartments of suitable proportionate size, and which are intended to be filled in with the name, natural order, native country, description, properties and uses, situation, soil, method of propagation, and subsequent cultivation in spring, summer, autumn, and winter respectively. The young gardener is to fill in each compartment from the results of personal observation or information derived from his superiors, or, failing that, from books. It would be excellent practice for the young men in the bothy to amuse themselves by filling up these schedules and to get their employer to look them through and suggest what alteration or addition he thought fit. A prize might be given for the best series, to include a certain number of such schedules properly filled in with information relating to fruit and vegetable culture and other departments of gardening. The matter is one that might advantageously be taken up by horticultural associations such as, we are glad to see, are extending in numbers throughout the country. A prize offered by such a body and awarded after examination by competent persons would be a proud thing to win.

—— COCAINE.—Our readers are familiar at least with the reputation of the Coca, or Erythroxylon Coca, the leaves of which are used as a stimulant, like Tea or Coffee, and which allay hunger and avert the sense of fatigue. This much has been known for years, and was put to the test by the late Sir R. CHRISTISON. Its properties were supposed to be due to a substance identical, or nearly so, with thein, the active principle of Tea and Coffee. Latterly this principle has been isolated, and has been found to possess such anæsthetic properties as even to render the eye insensible to touch. Its use in surgical operations is, therefore, likely to become very important and to be extended to tooth-drawing and other minor surgical operations. At present its high price forbids more than experimental use, but the results have been so uniformly successful that there is little doubt that as the demand increases the manufacture will be extended and cheapened.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—It is seldom we find the whole proceeds of a flower show finding its way into the hands of this Institution, but as the need of an addition to its funds for a worthy object became generally apparent, so we find the means by which the sums intended for this purpose can be obtained of considerable variety. Cuckfield, in Sussex, held a Chrysanthemum and fruit show on November 19 and 20, and now we have to congratulate Mr. CUTLER on finding his endeavours rewarded by £11 2*s*. 7*d*., which the Rev. F. MOUNT, Cuckfield, has been deputed by the managers of the Society at Cuckfield to forward to him. This sum was supplemented by a sum of £5 from G. WOOLLEY, Esq., and £1 from Mr. BALCHIN. As a spur to the lukewarm members of the great band of horticulturists, it cannot be too often made public, that collectors of £10 are placed on the books of the Institution as Life Members, and become entitled to all the benefits that accrue to such members.

—— NEW CHRYSANTHEMUMS AT MESSRS. BULL'S, CHELSEA. — Mr. BULL has some fine novelties among these favourite flowers. In the Japanese section the following were the most conspicuous :—Beauté des Jardins, very fine double flower with long twisted petals of a brilliant amaranth shaded with violet, light centre; a most brilliant colour, and very distinct. Brise du Matin, fine large double flowers, spiral rosy-mauve florets, white centre shaded with chamois, distinct. Madame de Sevin, a fine large double flower, with spiral petals of a rosy-lilac, white centre. Madame Antoinette Brunel, a most distinct and remarkable flower, the base of the florets being quilled, and of a silvery white, the upper part of the florets being flat, of a rosy-carmine tinge, spotted with white. In the large flowering section, Mr. James Laing, a fine flower of a bright yellow colour. In the pompon section, Elise Layeillon, orange-rose, lit up with salmon, centre dark golden-yellow. All really good things, and likely to become favourites, especially Madame Antoinette Brunel.

—— AGRICULTURAL EDUCATION. — We reprint the following letter from the *Times* because it is as applicable in its way to horticulture as to agriculture, and the principles are the same in either case :—

"A number of meetings have recently been held in Oxfordshire and Buckinghamshire with a view to the establishment of night classes during the winter for teaching the scientific principles of agriculture. There is a growing opinion among the more educated young men that agriculture requires something besides commissions and inquiries and fair trade. It has been estimated that the annual waste from careless and unskilful methods of managing manure amounts to nearly £5,000,000. Add to this the want of knowledge in the purchase of artificial manures and their application, the waste of feeding stuffs, the odd pieces and corners of fields that might grow other things beside rank weeds and Couch-grass, and the waste of time in going to markets, auctions, and fairs. No industry can afford this general waste without difficulties, nor will any reduction of rent or local taxation, or increased price of Wheat, do anything for men who make no effort to improve their industry by increased scientific knowledge. The natural history of the wireworm, the leather-jacket, the dissolving of bones, the building up of plants, the judicious mixing of food, and many other things which farmers would be the better for knowing, can never be acquired by what is called practical farming. I would commend these classes to the consideration of the clergy and all who take interest in the welfare and education of young men in rural districts."

—— ECONOMIC PLANTS IN BORNEO.—Some items in a recently issued report on the commerce of Sarawak, Borneo, illustrate the effect of change in the demand for one article over that for another, as for instance gutta-percha and indiarubber, which are included amongst the principal products of the country. Thus of the former we find that, in 1881, 3709 piculs were exported; in 1882, 3576 piculs; and in 1883, 3397 piculs. It is, however, stated that "as the extension of territory from Cape Kadwrong to Baram Point gets opened up, an increase in the output of this article may be looked for." In indiarubber a very important advance has been made during the past three years, which is accounted for chiefly by the rise in the value giving an impulse to collectors who formerly found it more profitable to work gutta-percha The amount stands thus :—In 1881, 558 piculs; in 1882, 987 piculs; and in 1883, 1421 piculs. Notwithstanding that the value of Sago flour was gradually falling during the greater part of 1883, the production was above the average of the previous two years, when quantities were first stated in the Government returns, which is mainly to be accounted for by the fact that raw Sago, previously contracted for at high rates, continued to come in from the coast. The manufacture of Sago flour is likely, however, to be considerably smaller during the current year, unless the value materially and speedily improves, as manufacturers are now offering such low rates for the raw material as must check its production.

—— VICTORIA REGIA.—It may be interesting to record the duration of the flowering period of, and the number of flowers produced by, a plant of the Victoria Water-Lily at Kew this year. The seed from which this plant was obtained was sown early in March, and the plant was grown in a pot in a small tank until April 22, when it was planted in the bed in the large tank specially provided for the cultivation of this Water-Lily. The first flower opened on July 12, and was succeeded by others as follows :—On July 15, 18, 20, 23, 26, 29; August 1, 4, 7, 10, 13, 16, 19, 21, 24, 27, 30; September 1, 4, 8, 10, 13, 17, 20, 23, 26, 29; October 2, 5, 9, 12; and November 8. Altogether thirty-three blooms have been produced, and it will be seen that, with one or two exceptions, the first thirty-two were expanded one on every third day. After October 12 we had a succession of dull cloudy weather, and the effect of this on the plant was to weaken it, so that the remaining buds failed to open, and finally rotted. On November 8 another flower expanded, and several buds are

even now in various stages of development. Should the weather be clear and bright it is probable these buds will all expand. In 1883 the first flower opened on August 1, and the last on October 10, twenty-one flowers being produced altogether. The number of flowers borne by the plant of 1882 was only sixteen, the first opening on July 28, and the last on September 27. The exceptionally long and bright summer of this year accounts for the unusual length of the flowering period of the Victoria. In the gardens of Mr. DIXON, at Leatherhead, this plant proved even more successful this year than at Kew, over fifty flowers having been borne by Mr. DIXON'S Victoria. Mr. DIXON'S extraordinary success in the management of this plant is attributed by him to sowing the seeds in the bed at once, instead of planting them and keeping the young plant in a pot for a time. In this way he succeeded in growing his plant to flowering size by the beginning of May. The plant at Kew in 1882 was raised from seeds ripened by the plant of the previous year, which also was from Kew-ripened seeds, and the result of this was a sure proof that artificial cultivation has a deteriorating effect on this Water-Lily to such an extent as to make a plant of the third generation both weaker in constitution and much smaller in the size of its flowers than plants raised from imported seeds.

—— AGRICULTURE IN THE PROVINCE OF NOVARA, ITALY.—In a Government report from Italy, referring to the Province of Novara, it is stated that agriculturists form the great majority of the inhabitants. Cereals, fruit trees, Mulberries, and Vines are cultivated in the plains and valleys of the district with constant and immense labour, agricultural resources being exceedingly limited. In the forest and pasture regions large properties are the rule, but in the plains they are subdivided to an extraordinary extent, which is the immediate and inevitable cause of considerable temporary and permanent emigration. The hill region is very extensive and important, chiefly for Vine growing; its inhabitants are on the whole fairly prosperous. A portion of the plains is almost destitute of water, and here agriculture is in a very bad state, only to be remedied by the strong coalition of intelligence, labour, and capital, the latter being especially wanting. The valleys of the Po and its tributaries are well irrigated, and abound with natural meadows.

—— ARISTOLOCHIA ALTISSIMA.—Notwithstanding the lateness of the season, and the cold weather we have lately experienced, this fine plant continues to grow and flower. There are some specimens on a wall on the west side of the herbaceous ground, Kew, one of which, at least, has seen a good many winters; yet, although the plant is evergreen, and usually regarded as a greenhouse subject, it never suffers more than the loss of its leaves and the unripened shoots, perhaps, in severe winters. The cordate acuminate leaves are intensely green above, shining on both surfaces, and completely hiding the wall against which it is trained. It was originally introduced from the island of Candia in 1727, and enjoys a wide distribution on the continent around that neighbourhood, as well as in some parts of North Africa and Asia Minor. It is synonymous with A. sempervirens, and, although the flowers are inconspicuous, should be grown for its handsome dark green foliage. There is a figure of the plant in the *Botanical Magazine*, t. 6586.

—— STRUGGLES BETWEEN TREES IN DANISH FORESTS.—M. HANSEN, Blangsted, according to a paragraph in *Nature*, contributes to *L'Exploration* an interesting article on the struggle between trees in the Danish forests. The chief combatants are the Beech and the Birch, the former being everywhere successful in its invasions. The paper refers especially to the district of Silkeborg in the heart of Jutland. Forests composed wholly of Birch are now only found in sterile sandy tracts; everywhere else the trees are mixed, and wherever the soil is favourable the Beech rapidly drives out the Birch. The latter loses its branches at the touch of the Beech, or devotes all its strength to its upper part, where it towers above the Birch. It may live long in this way, but it succumbs ultimately in the fight of old age if of nothing else, for the life of the Birch in Denmark is shorter than that of the Beech. The writer believes that light is the cause of the superiority of the latter, for it has a greater development of its branches than the Birch, which is more open, and thus allows the rays of the sun to pass through to the soil below, while the tufted bushy top of the Beech retains them, and thus preserves a deep shade at its base. Hardly any young plants can grow under the Beech except its own shoots; and while the Beech can flourish under the shade of the Birch, the latter dies immediately under the Beech. The Birch has only been saved from total extermination by the facts that it had possession of the Danish forests long before the Beech ever reached that country, and that certain districts are unfavourable to the growth of the latter. But wherever the soil has been enriched by the decomposition of the leaves of the Birch the battle begins. The Birch still flourishes on the borders of lakes and other marshy places, where its enemy cannot exist. In the same way in the forests of Zeeland the Fir forests are disappearing before the Beech. Left to themselves the Firs are soon replaced by the Beech. The struggle between the latter and the Oak is longer and more stubborn, for the branches and foliage of the Oak are thicker, and offer much resistance to the passage of light. The Oak also has great longevity, but sooner or later it, too, succumbs, because it cannot develope in the shadow of the Beech. The earliest forests of Denmark were mainly composed of Aspen, with which the Birch was apparently associated; gradually the soil was raised and the climate grew milder, then the Fir grew and formed large forests. This tree ruled for centuries, then ceded the first place to the holm Oak, which is now giving way to the Beech. Aspen, Birch, Fir, Oak, and Beech appear to be the steps in the struggle for the survival of the fittest among the forest trees of Denmark.

—— RAVENEA HILDEBRANDTII.—A very elegant dwarf Palm, native of the Comoro Islands, interesting as a new type, as well as for its elegance. The leaves are spineless, dividing into two linear lanceolate acuminate segments, scaly on the under-surface, spadices stalked, with four tubular persistent spathes, enclosing numerous short branches densely covered with small flowers. It is figured in *Illustration Horticole*, vol. xxvii., p. 164, and in the *Botanical Magazine*, t. 6776.

—— TAMKATRA BARK.—The *Journal of the Society of Arts* draws attention to a report by Mr. Consul GRIFFIN, of Auckland, on the Tamkatra bark (Phyllocladus trichomanoides), which he says has been exported to Europe of late years in very large quantities in consequence of its being so highly prized for dyeing and tanning, "recent tests having established the fact that it is one of the best vegetable dyes in the world, and especially for yellow, pink, and fawn colours." An interesting fact connected with the tree is said to be that it produces a most beautiful walking-stick. The bushmen bruise the bark of the sapling at regular intervals, and after a few days cut the sapling down and peel off the bark. The stick then presents a mottled surface, and of a permanent bright red and white colour. In obtaining the bark for exportation a transverse incision is made with a knife round the trunk at the bottom, and a similar cut just below the junction of the branches; vertical incisions are then made with a very sharp knife and the bark removed in long narrow strips, and all the branches large enough to contain bark of any value are stripped in the same manner. The tree, if not too large, is generally cut down, and the bark is thus removed more easily, it being useless to endeavour to save the tree, as removing the bark invariably kills it. The barking usually takes place in the winter, though it is said that it would be preferable to collect it in the spring, at which season the tannin is most abundant. The bark, when peeled, is put up in bundles from 4 to 5 feet in length, and is then ready for shipment, usually to London, whence it finds its way to Grenoble, where it is largely used for dyeing kid gloves. It is only of late years that Tamkatra bark has been exported from New Zealand, and owing to its valuable properties it is expected that the trade in this article will largely increase. In 1873 the amount exported was 24 tons, while during the first six months of 1883—the latest date for which returns are available—it exceeded 575 tons, with a value of £4000.

—— FRITILLARIA BUCHARICA.—A curious species, the figure of which at first sight suggests a terrestrial Orchid like Epipactis rather than a Fritillary. The plant is bulbous, with a stem 6—18 inches high, with broad ovate acute leaves and star-like flowers in terminal clusters. Each flower is whitish flushed with violet, with nectarial pits at the base. It is one of ALBERT REGEL'S discoveries in Eastern Bokhara, on the right bank of the river Pandsch, 4000—5000 feet above the sea. Recently figured in *Garten Flora*.

—— EPIPHYLLUM RUSSELLIANUM (HOOK.) VAR. GAERTNERI.—A magnificent variety, figured in a recent number of the *Garten Flora*, t. 1172, and conspicuous for its brilliant scarlet flowers.

—— CHRISTMAS DECORATIONS.—Messrs. HOOPER & Co., of Covent Garden, send us plumes of Pampas-grass 40 inches in length, and inform us that they have thousands equally fine. Their importation this year amounts to nearly 160,000. Owing to the abundant rains during the summer on the Pacific coast of South America the plumes this year are of superior quality. The "Fairy Flowers" which puzzled us last year are now declared to be the tufts of hairs surmounting the seeds of an Asclepias, picked off by the deft fingers of ladies.

—— PULTENÆA GUNNI.—An Australian shrub with minute linear leaves on branching wiry stems, and clusters of small pea-shaped yellow flowers. *Garten Flora*, t. 1173.

—— WILD CHERRY KERNELS IN TREBIZOND.—In a report by Consul BILIOTTI on the trade and commerce of the district of Trebizond for the year 1883, it is stated that the kernel of a diminutive species of wild Cherry, having an aromatic flavour, is known by the name of "Mahlep," and is little used in Turkey, but greatly so in Egypt, by bakers to sprinkle over bread. It is supposed to be a preservative against ague. The tree grows to a large size, especially in the vicinity of Niksar and Flérék, and also at Amassia and Tokat. The values of the kernels exported amounted to £1902 to Turkey, and £2238 to Egypt.

—— THE WEATHER.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Dec. 8, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has been very dull, rainy, and unsettled over the whole kingdom; hail showers have fallen in various localities, while at some of the north-western stations thunder and lightning have been experienced. The temperature has continued slightly below the mean in "Scotland, N.," and has been about equal to it in "Scotland, E." but in all other districts a decided rise has taken place, the values for the week over greater part of England being 5° or 6° above the mean for the season. The maxima, which were recorded on different days in the various parts of the country, ranged from 57° in "Ireland, S.," and 56° in most of the English districts to 48° in Scotland, N." The minima were generally registered on the 2d, when the thermometer fell to 25° in "Scotland, E.," 29° in "Scotland, N.," and to between 30° and 34° in all other districts except the "Channel Islands," where the lowest reading was 42°. The rainfall has been more than the mean in all places, the excess at our southern, western, and north-western stations being considerable. Bright sunshine has been very deficient in all districts; the percentages of the possible duration varied from 17 in "Scotland, E.," to 5 in "England, S.," and to 4 in "England, S.W.," and "England, N.W.," while in "Scotland, N.," the weather was altogether sunless. Depressions observed:—During the whole of this period the barometer has been highest in the southern part of our area, while a series of depressions has travelled north-eastwards over Scotland or the north of England, and some subsidiary disturbances in a similar direction over our more southern districts. Strong southerly to westerly winds have consequently prevailed in all parts of the country, and at times have attained the force of a gale, that experienced on our south-western and southern coasts on the 4th being especially severe.

GARDENING APPOINTMENTS.—Mr. W. GOODALL, lately of Melton Abbey, as Head Gardener to A. MORRISON, Esq., Fonthill, Tisbury, Wilts.—Mr. WILLIAM PRIEST, lately Gardener to the Marquis of LOTHIAN at Newbattle Abbey, has been appointed Gardener to the Earl of EGLINTON, at Eglinton Castle, Ayrshire.—Mr. ALFRED HOLLOWAY, lately Gardener at Oak Lodge, Kensington, London, as Gardener and Bailiff to A. J. GODDARD, Esq., The Lawn, Swindon, Wilts.

DR. REGEL.

WE learn that Dr. Regel, the Editor of the *Gartenflora*, is about to sever his connection with that journal. In an address to the readers of the *Gartenflora* he states that it is now thirty-three years since his first botanical work appeared, the *Flora Bonnensis*, which he carried out in association with his long since departed friend, J. Schmitz.

In the years 1839—1842 he published articles on the "Essentials of the Art of Gardening, founded on Physiology," in the *Allgemeinen Gartenzeitung*, of Otto and Dietrich, which was published in the *Gardeners' Chronicle*, and at that time passed over to the scientific side of horticulture. He carried over with him views that were getting antiquated, but still he was the first, as it was at a much later period that Lindley's *Theory of Horticulture* appeared. After that came the *Cultivation and Description of the Ericas*. This he completed in his parental home in Gotha, before taking up his residence in Zurich, the first part being the practical, the second the purely botanical.

In 1843 Dr. Regel edited, in company with Professor Heer, the *Schweizerische Zeitschrift für Land und Gartenbau* ("Agricultural and Horticultural Journal for Switzerland"), of which the horticultural part was entirely edited by him from 1847 — 1851; and in 1852 he began to edit the *Gartenflora* in Zurich, and which from the year 1855 was continued in St. Petersburg, so that for forty-two years he has been the Editor of various horticultural journals. He was seventy years of age in 1883, a period of his life at which he resolved to give over the Editorship of his paper to younger men, better fitted to deal with botany and horticulture than one who can no longer follow the advances made in scientific knowledge, as the Editors of the *Gartenflora* are required to do.

The editing of the *Gartenflora* is now given over to Professor Engler and Mr. Inspector Stein, of Breslau, in the hope that these gentlemen will retain the journal in the same high estimation as he himself had done in recent years.

Dr. Regel takes his farewell with cordial thanks to all his colleagues and friends for their assistance, and that the *Gartenflora* may have abundant support, and that the circle of its readers may constantly widen.

Dr. Regel still retains his post as Director of the St. Petersburg Botanic Garden. His life-long labours in the cause of horticultural botany have procured for him the gratitude and respect of all his colleagues.

A TROPICAL WILD GARDEN.

[SEE SEPARATE ILLUSTRATION.]

A HOUSE AMONG PALMS.—Wild gardens are rather the fashion in England just now, where, on the whole, they are rather hard to make. I often wonder what people at home would say to my natural "wild garden" here in the tropics (British Guiana), the only fault of which is that it is hard to prevent its becoming too wild. When I came to live here, rather more than two years ago, the hill was densely covered with forest, partly natural and partly composed of an enormous number of Cocoa-nut Palms, which had been planted among the wild forest growth so thickly that they would have had no fair chance of developing even had they been kept clear from other growth, but which under their actual circumstances had become elongated, sickly, curved and moss-grown stems, crowned with a few sickly leaves. Moreover, for a year or two before I came no one had lived here, nor had any attempt been made to keep any portion of the place in order; so that a tangled mass of forest reached from the river to the very eaves of the house on the top of the hill, and even at noon on the brightest day no ray of sun penetrated into the open wall-less house.

By remorseless clearing of all weedy growth, and by the sacrifice of a very large number of trees, a clear space has now been made round the house, and a view opened right down to the river; while, as there really were a few fine trees and enormous numbers of really magnificent Palms hidden in the old forest, these better things have been left to form beautiful groups on the opened hillside.

Just round the house I at first attempted to make a more formal flower garden, and, to that end, planted countless Crotons, Jasmines, Hibiscus, Eranthemums, Roses, Coleus, Lilies, and innumerable other things. But at once an enemy came down on these. This was the leaf-cutting ant (Œcodema cephalotes), which is the true and almost insurmountable obstacle to gardening in these parts. Many stratagems did I try to prevent the vast hosts of these small beings, which walk and bring destruction chiefly at night. First cotton-wool was tied round the stem of each plant, and this kept off the ants until the wool, becoming soaked, was no longer fibrous, after which the ants walked freely over it. Next I tried to make a more durable minute fence round each plant by surrounding each with a strip of tin, the upper edge of which had been cut into a very fine and long fringe; but though if these were cut finely enough the ants did not pass them, they failed by preventing the plant from getting sufficient water round its crown. Then I put wider circles of tin round each plant, and put fresh tar on these twice a week; but this plan, too, failed, partly because of the immense labour and considerable expense which it involved, and partly because the successive coats of tar flowed down and clogged the ground round the plants.

Meanwhile, many attempts to poison the enemy were made and failed. Calomel was a delight to them; arsenic seemed their favourite food; carbolic acid pleased them, if possible, still more; and corrosive sublimate raised their spirits to perfectly terrible heights. All these new food substances seemed but to stimulate them to new exertions in the way of leaf-cutting.

At last, in despair, I determined to remove the flower garden to a level space of ground by the side of the river after I had completely surrounded this with a deep ditch, to be kept always full of water. Ants apparently do not care to make their nests in the clay soil such as that at the river side; and the ditch prevents their making occasional raids into the new flower garden. So the plants there are now doing well. At some future time I may have something to report of them; but for the present my concern is chiefly with the wild garden on the hill.

For this, in addition to the trees already grown to maturity there, there were available, as far as I have at present ascertained, Lilies, Coleus, Palms, and other such hard-leaved plants, Figs and other plants with milky juices, as well as plants with leaves very densely covered by minute hairs or prickles, Orchids, Dracænas, Bamboos, and all plants with Mimosa-like leaves; for all these things do the ants leave untouched, some apparently because they are not to the taste of ants, others because they are protected by hairs and other such contrivances. By degrees, and by experiment, I am gradually adding to the number of available plants. And, as I find that ants do not cross, or very rarely cross, very dense and fine turf, I have managed to keep a few Crotons and Hibiscus wherever such grass can be induced to grow. Moreover, by continually digging out the countless nests of ants, and saturating these with boiling soap and water, the number of the enemy is being gradually much reduced, though I dare hardly hope that the last will ever be completely destroyed.

Meanwhile, there are innumerable Palm groups in the garden, so beautiful as quite to atone for the scarcity of flowers. But pictures represent better than any number of words the beauties of the place, and it is to these that I must now turn. The illustration shows a small portion of the house itself, almost covered as it is, on the one side, by tropical vegetation. The erect, prickly-stemmed Palm about the centre of the foreground of the picture is a fine specimen of Acqueeroo (Astrocaryum tucuma, Martius). The large tree overhanging on the right, from which depend innumerable "bush-ropes," is a Hog-Plum (Spondias lutea), the whole crown of which, though this is not shown in the picture, is smothered by a dense mass of the flame-flowered Norantea guianensis, which about Christmas time colours the tree with its marvellous splendour. The house itself is, as it were, a botanical curiosity, for its very large roof, the few outside walls which it has, and almost all its partition walls, are made of the huge leaves of the Troolie Palm (Manicaria saccifera, Gaertn.). The rest of the picture is filled almost entirely by Cocoa-nut Palms.

The view across the tennis-ground shows probably as picturesque a ground as exists. The two large Palms in the foreground, and the three others erect in the distance, are Cokerites (Maximiliana Martiana, Karst.) of which I shall have more to say later on; and the three Palms, of which only the very prickly stems appear, are Acqueeroos (Astrocaryum tucuma, Martius). A semicircular wattle-work screen, 9 feet high, closes each end of the ground, to prevent the balls being lost in the surrounding dense vegetation. The Palms here are almost all Maximilianas. One near the centre shows the long-persistent spathes, which are, moreover, so large and strong that, when they do fall, the Indian children often use them as boats, in which they paddle themselves about the river. This dropping, not only of the heavy spathes, but also of the still heavier dead leaves, is rather a serious difficulty in a garden where these Palms so greatly abound, for the falling matter crushes down all that happens to be growing below the leaves. In the right-hand corner of this picture appears one end of the aviary; in front of that are three large Fourcroyas (of which only two appear); and in front of these again is a bush of the stinging Cassava (Jatropha urens), every part of which is beset with minute hairs, which sting with far more than the virulence of the Nettle. *E. Im Thurn.*

[This article was accompanied by a series of exquisite photographs, one of which is reproduced in the present issue. ED.]

(To be continued.)

HORTICULTURAL CHEMISTRY.

THE death of Dr. Voelcker removes from agricultural science one of its ablest expositors, and gardeners may well join with farmers in deploring the deprivation chemistry has sustained. This event, however, serves to bring out into forcible light the fact that whilst agriculture is aided by scientific and especially chemical professors, yet no such aid is given to horticulture. It is true that the discoveries and investigations of the agricultural professors have, so far as they relate to manures, soil constituents, and other matters connected with the earth and its cultivation on scientific principles, been open to gardeners equally with farmers, but still it is odd that an occupation which seems to call into operation less of the intellectual powers than gardening does should have scientific aids, whilst professionally gardening has none. Men like Voelcker, Lawes, Gilbert, and other agricultural chemists have done much to give agriculture a scientific basis. Horticulture practically has none, neither has it any school, college, or other institution devoted to its advancement. Of course it is a legitimate question to put, how far agriculture has gained on the one hand and horticulture has lost on the other, because of aid on the one side and its absence on the other. Farming in this country is undoubtedly more intellectual than it was before the association with it of scientific teaching, but still it is not a profitable occupation. Gardening, on the other hand, if it has had no special scientific help, has yet travelled rapidly, and is a long way ahead of what it was in pre-scientific days, and on the whole may be said to be the much more profitable occupation of the two. Perhaps gardeners have something to be thankful for in the fact that their vocation serves the more effectually to develope the thinking and acting faculties, and these, with the help of such crude information as may be picked up in practice or is found in reading, have enabled them to progress relatively more rapidly than the farmer has. The latter with all his scientific aid, his colleges, and his societies and chambers, is not after all a man of first-class ability. Somehow or other his bovine associates seem to operate upon his mind with bad results, for he adopts new ideas, and shares broad intelligent views only in an exceedingly limited degree. If science could aid agriculture at all—and surely it must have done so largely—then it is very difficult to understand why it is that the occupation of farming seems to be at such a low ebb. It would almost seem as if the occupation had become behind the age or that the age had got beyond both the pursuits and productions of home agriculture at least. It is very certain that little short of a revolution, either in practice or in its associations with land can help to place farming upon a basis commensurate with the requirements of the day. That horticulture should have sped onward and developed so rapidly and have produced so much active intelligence in its workers seems to indicate that there is something peculiarly robust and healthy in its absolute independence from State patronage or control. The farmer yet weakly holds to the illusion that the appointment of a Minister of Agriculture would put an end to all his woes and troubles. Certainly, the gardener would laugh at such a suggestion, probably would go farther and strongly deprecate any appointment of a Minister of Horticulture, because experience has amply shown that no occupation is better able to take care of itself than is gardening. Very warm-hearted people occasionally cry out for some teaching in practical horticulture in our elementary schools. Were we a nation of gardeners there might be some force in the sugges-

tion, but as it is probable, that of the boys in any suburban or rural elementary school, perhaps not more than one-tenth may in time become gardeners or even farm labourers, it would be rather hard upon the remaining nine-tenths that they should be compelled to acquire information respecting an occupation which they may never have in future life to put into practice. They have just as much right to ask for teaching in mechanics, or any other vocation as gardening. What is much better is to give to our children as much general theoretical scientific knowledge in school as they possibly can assimilate consistently with the claims of other educational elements, and then, whenever the opportunity offers, let their vocation be what it may, that scientific knowledge will certainly prove useful. Intelligent minds well founded with the basis of all knowledge will be apt to utilise that knowledge for the best when opportunity offers, and it is in that way gardening has gained so much from the growth of general education and the advancement of the intelligence of the people. *D.*

Notices of Books.

Comparative Anatomy of the Vegetative Organs of Phanerogams and Ferns. By Dr. A. De Bary. Translated and annotated by F. O. Bower, M.A., and D. H. Scott, Ph.D. Oxford: Clarendon Press.

This is a book for which English students have been long looking, as although the original was published in 1877 there has been no such comprehensive treatise published before or since. The literature of the subject is especially diffused and fragmentary, and but little attempt has been made to classify the data acquired by countless botanists and microscopists. There is, too, among botanists who devote themselves to this department of their science a tendency to neglect that careful synonymy which the student of classification feels bound to attend to. The consequence is that one of the former generation on taking up a modern book finds himself bewildered by a host of neologisms and new denominations for old things. To some extent, of course, this is inevitable; new ideas demand new modes of expression, and the progressive development of the science calls for a similar expansion of its nomenclature; moreover, owing to the different way of looking at things actual correspondence or synonymy is not to be expected. Admitting all this, it is none the less the business of authors of treatises like this to link the present to the past, and to make perfectly clear the meaning of the terms they employ, and where necessary to show the relationship they bear to the terminology of a former generation. Take, for instance, the word "cambium," the exact meaning of which has become so confused that it were better to omit it altogether, as each author uses it as he thinks best without reference to his predecessor. The term "duct," which used to have in England a distinct signification, as distinct from "vessel," has disappeared, while the term "trachea," once reserved exclusively for spiral vessels, now receives a much wider interpretation. What were once called latticed cells, or clathrate cells, now receive the name of "sieve-tubes." Another cause of confusion arises from the fact that anatomists have adopted the evil practice of using vernacular names for the structures of which they write. This necessitates the translation into each of the several languages of the civilised globe of the term employed. It is frequently a matter of considerable difficulty to effect this; and, of course, when done, it is unintelligible to the student of any other nationality. The adoption of a uniform system of Latin nomenclature, as in the case of systematic botany, would be an immense benefit.

The great progress which has been made of late years in plant anatomy, and which is well reflected in the book before us, lies in the relationship that has been established between one form of cell or vessel and another, and in the progressive differentiation of the several tissues from the originally homogeneous parenchyma. The structure and arrangement of the vascular bundles, the formation of cork, the structure of the bast may be mentioned as matters in which great progress has been made. Till botanists had such a book as Professor De Bary's put into their hands it was a difficult or almost impossible matter to connect the different appearances presented either with their physiological office or their genetic relationships. The more recent researches of Van Tieghem, of Bertrand, of Vesque, and others suffice to show that substantial progress may be expected now in this direction—one from which, moreover, great results may be looked for by the practical cultivator of the future.

The translators have added a few references to memoirs published since the date of the original work, but we could have wished that they had been more liberal in this way, and thus added to the obligations under which they have laid English students. Singularly enough, amongst references to the older literature we find no mention of Professor Oliver's catalogue of the literature relating to the stem of Dicotyledons, published in 1862, although that was up to the date of publication by far the most complete enumeration of the kind, and enriched with numerous original observations. The index, full as it is, especially in names of plants, is deficient in the names of tissues, or components of tissues—a circumstance the more to be regretted on account of the circumstances above-mentioned.

It seems clear that a new era is opening up for physiological botany, an era the advent of which is hastened by the crystallising force of the evolution theory, and by the improved methods of observation now available. The task of synthesis will begin, and no book will facilitate this more than that of which Messrs. Bower and Scott have given us so excellent a translation, and, we may add, few men have proved themselves more competent to carry on original research in this direction than the translators.

NEW PLANTS CERTIFICATED

BY THE FLORAL COMMITTEE AT THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS, 1884.

*** *F.C., First-class Certificate; S.C., Second-class Certificate, B.C., Botanical Certificate.*

Acer japonicum aureum .. Veitch, May 13—F.C.
,, polymorphum septemlobum elegans purpureum .. .. .. Veitch, May 13—F.C.
Adiantum cuneatum strictum B S. Williams, April 8—F.C.
,, rhodophyllum .. .. Veitch, March 25—F.C.
Aërides illustre .. .. Sir T. Lawrence, July 8—F.C.
,, Houlletianum .. .. B S. Williams, July 22—F.C.
,, Lawrenceæ .. .. Ballantyne, Sept. 9—F.C.
,, Sanderianum .. .. Schröder, Nov 11—F.C.
Amaryllis Colonel Burnaby .. Veitch, March 25—F.C.
,, General Graham .. .. Veitch, March 11—F.C.
,, Mrs Hibberd .. .. Veitch, March 25—F.C.
,, Mrs. W. Lee .. .. B. S. Williams, Sept. 9—F.C.
,, Murillo .. .. .. Veitch, April 8—F C.
,, Sir R. Buller .. .. Veitch, March 25—F.C.
,, Ne Plus Ultra .. .. Veitch, March 11—F C.
,, Virgo .. .. .. Veitch, April 8—F.C.
Amasonia punicea .. .. Veitch, Sept. 9—F.C.
Angræcum fastuosum .. .. SirT. Lawrence, April 22—F.C.
Anguloa Ruckeri sanguinea .. Crawshay, June 24—F.C.
Asplenium horridum .. .. B. S. Williams, May 13—F.C.
Auricula Conservative .. .. Turner, April 8—F.C.
,, Hetty Dean .. .. R. Dean, March 25—F C.
,, Mungo McGeorge .. Turner, April 8—F.C.
Azalea amœna Little Beauty .. Veitch, March 11—F.C.
,, indica Baron N. de Roths child .. .. .. Van Houtte, April 8—F.C
,, ,, B. S. Williams .. Van Houtte, April 8—F.C.
,, ,, Comte Adrien de Germiny .. .. Van Houtte, April 8—F C
,, ,, Comte de Paris .. Van Houtte, April 8—F.C.
,, ,, Comte de la Torre .. Van Houtte, April 8—F C
,, ,, J. D. Llewellyn .. Van Houtte, April 8—F.C
,, ,, Madame Marie Stockman .. .. .. Van Houtte, April 8.—F.C.
,, ,, Mrs. Alfred Heaver . Todman, March 11—F.C.
,, ,, Princess of Wales .. Nicol, April 8—F.C.
,, ,, Souvenir du Duc d'Albany .. .. Van Houtte, April 8—F.C.
,, ,, Souvenir de Marie Rossel .. .. Rossel, April 22—F.C.
,, ,, Souvenir du Prince Henri .. .. Van Houtte, April 8—F.C.
Begonia Canary Bird .. .. Laing & Co., June 10—F.C.
,, Carrièri .. .. .. Cannell & Sons, March 11—F.C.
,, Felix Crousse .. .. Bealby, Oct. 14—F.C.
,, Her Majesty .. .. Laing & Co., June 24—F C.
,, King of Kings .. .. Cannell & Sons, Oct. 14—F.C.
,, Lucie Lemoine .. .. Cannell & Sons, June 10—F C.
,, Madame Castaigeuz .. Cannell & Sons, June 10—F.C.
,, Madame Crousse .. Bealby, Sept. 9—F.C.
,, Octavia .. .. .. Cannell & Sons, Sept. 9—F.C.
,, Queen of Bedders .. Cannell & Sons, Aug. 26—F C.
,, Ruhm von Erfurt .. Cannell & Sons, July 22—F.C.
,, Souvenir de W. Sandy .. Laing & Co., Aug. 26—F.C.
,, Torey Laing .. .. Laing & Co., June 24—F.C.
Bessera elegans .. .. .. Ware, Aug. 26.—F.C.
Brassia antherotes .. .. B. S. Williams, May 13—F.C.
Calochortus Benthami .. .. Ware, May 13—S C.
Campanula turbinata pelviformis .. .. Paul & Son, July 22—F.C.
Caraguata angustifolia .. Veitch, Nov 11—F.C.
Carnation Celia .. .. .. Veitch, July 8—F C.
,, Chevalier .. .. .. Hooper & Co., Nov. 11—F.C.
,, Martha .. .. .. Duffield, July 8—F.C.
,, Mrs. Maclaren .. .. Turner, May 13—F C.
,, W. P. Milner .. .. Veitch, May 27—F.C.
Cattleya calumniata × .. .. Sir T. Lawrence, July 8—F.C.
,, Gaskelliana alba .. .. Crawshay, July 8—F.C.
,, Gaskelliana .. .. Sander & Co., July 22—F.C.
,, Mendelii var. selbornensis .. .. .. W. Lee, May 13—F.C.
,, Mendelii × .. .. W. Lee, May 13—F.C.
,, Percivaliana alba .. R. P. Percival, Feb. 12—F.C.
,, Percivaliana .. ,, R. P. Percival, Jan. 8—F.C.
Cattleya Schrœderiana .. { Salter, May 27—F.C. / Schroeder, May 27—F.C.
,, Trianæ var. Leeana .. W. Lee, March 25—F.C.
,, ,, splendidissima .. B.S.Williams, March 11—F.C.
,, triophthalma .. .. Schroeder, Nov. 11—F C.
Chrysanthemum Anais .. Laing & Co., Nov. 11—F C.
,, Criterion .. .. .. Veitch, Nov. 11—F C.
,, Culingfordi .. .. Cannell & Sons, Nov. 11—F.C.
,, La bien Aimée .. .. Cannell & Sons Nov. 11—F.C.
,, La Pureté .. .. .. Laing & Co., Nov. 11—F C.
,, pictum .. .. .. Veitch, Nov. 11—F.C.
,, roseum .. .. .. Veitch, Nov. 11—F.C.
,, Yellow Sport .. .. Wormig, Oct. 14—F.C.
Cineraria Challenger .. .. James, March 11—F.C.
,, Great Eastern .. .. James, Feb. 12—F.C.
,, Lottie Williamson .. James, Feb. 12—F.C.
,, Pollie Charming .. .. James, March 11—F.C.
,, Royal Standard .. .. James, March 11—F.C.
Clematis coccinea .. .. Veitch, July 22—F.C.
Coleus Countess of Dudley .. King, Aug. 12—F.C.
Croton Flambeau .. .. B. S. Williams, June 24—F.C.
Cupressus Lawsoniana Fleeti . Fleet, Nov. 11—F.C.
Cyclamen persicum Crimson Beauty .. .. Little, Jan. 8—F.C.
,, giganteum delicatum .. Edmunds, Feb. 12—F.C.
,, persicum giganteum Princess Ida .. .. Edmunds, March 11—F.C
,, Dame Blanche .. .. H. B. Smith, Feb. 12—F.C.
Cypripedium citrolare .. .. Sir T. Lawrence, April 8—F.C.
,, Curtisii .. .. .. Sir T. Lawrence, July 8—F.C.
,, grande × .. .. .. Sir T. Lawrence, May 13—F.C,
,, Leeanum × .. .. Veitch, Jan. 8—F.C.
Dahlia La Petite Barbier .. Cannell & Sons, Oct. 14—F.C.
,, Mrs Douglas .. .. Rawlings Bros., Aug. 26—F.C.
,, pompon Emilie Heincker Cannell & Sons, Oct. 14—F.C.
Davallia Mariesi cristata .. Veitch, April 8—F.C.
Dendrobium Findleyanum giganteum .. .. Salter, March 11—F.C.
,, Griffithianum .. .. Sander & Co., July 22—F.C.
,, Harryanum .. .. Sir T. Lawrence, April 22—F.C.
,, Phalænopsis .. .. Veitch, Oct. 14—F C.
Delphinium Gloire de Nancy Bealby, July 8—F.C.
Dieffenbachia Jenmanni .. Veitch, Jan. 8—F.C.
Dipladenia Elliotti .. .. { Lucombe, Pince & Co., Aug. 26—F.C.
Drosera auriculata .. .. Veitch, June 24—F.C.
Epacris Diadem .. .. Veitch, Feb. 12—F.C.
,, The Premier .. .. Veitch, Feb. 12—F.C.
Gladiolus hybridus Lafayette . Veitch, July 22—F.C.
,, St Gatien .. .. .. Kelway & Son, Aug. 26—F.C.
,, Sir Francis Bolton .. Kelway & Son, Sept. 9—F.C.
,, W. Kelway .. .. Kelway & Son, Sept. 9—F.C.
Hyacinth General Gordon .. Veitch, March 25—F.C.
,, Harlequin .. .. Veitch, March 25—F.C.
Indigofera floribunda alba .. Veitch, July 8—F.C.
Ipomœa Thompsoni .. .. Veitch, Nov. 11—F.C.
Iris Kæmpferi Earl Granville . Veitch, July 8—F.C.
,, ,, var. Mary Anderson . Veitch, July 8—F.C.
,, ,, Princess Maude .. Veitch, July 8—F.C.
Ivy-leaved Pelargonium Madame Thibaut .. .. Bealby, July 22—F.C.
Ixora Westii × .. .. .. Veitch, Aug. 12—F.C.
Kalmia latifolia major splendens .. .. Veitch, June 10—F.C.
Lapageria rosea superba .. Humphreys, Oct. 14—F.C.
Lathyrus latifolius delicata .. R. Dean, July 22—F.C.
Lælia anceps Percivaliana .. R. P. Percival, Jan. 8—F.C.
,, ,, Williamsiana .. F. Sander & Co, Feb. 12—F.C.
,, callistoglossa .. .. Schroeder, March 25—F.C.
,, Dominiana rosea .. Schroeder, June 24—F C.
,, elegans superbissima .. Sander & Co., Aug. 12—F.C.
,, purpurata atropurpurea . B. S. Williams—June 24—F.C.
Masdevallia Chelsoni × .. Sir T. Lawrence, May 13—F.C.
Medinilla Teysmaniana .. Veitch, July 8—F C
Mimulus moschatus Cloth of Gold .. .. { R. Dean, May 13—S.C. / R. Dean, May 27—F.C.
Narcissus bicolor J. B. M. Camm .. .. .. Barr & Son, April 8—F.C.
,, incomparabilis James Dickson .. .. { J. Dickson & Sons, April 8—F.C.
,, Leedsi Queen of England Barr & Son, April 8—F C.
,, incomparabilis Queen Sophia of the Netherlands .. .. .. Barr & Son, April 8—F.C
,, pallidus major .. .. Barr & Son, Feb. 12—F.C
,, poeticus bifloras .. .. Herbst, April 8—F.C.
Nephrolepis Bausei .. .. Veitch, Sept. 9—F.C.
Odontoglossum citrosmum var. album .. .. Soper, June 26—F C.
,, cinnamomeum .. .. Sir T. Lawrence, April 22—F.C.
,, crispum aureum .. .. F. A Phillbrick, Feb 12—F.C.
,, ,, Ballantinei .. .. Schroeder, May 13—F C.
,, ,, Dellense .. .. Schroeder, May 13 F.C.
,, ,, roseum guttatum .. Sander & Co., June 10—F C
,, ,, guttatum .. .. Sir T. Lawrence, April 8—F.C.
,, ,, Souvenir du Prince Leopold .. .. Sander & Co, June 10—F.C.
,, ,, Veitchianum .. .. Schroeder, June 24—F.C.
,, excellens .. .. .. Sir T. Lawrence, June 24 - F C.
,, macropsilum .. .. B S. Williams, March 25—F.C.
,, Oerstedti .. .. .. W. Lee, March 25—F.C.
,, Pollettianum .. .. H. M. Pollet, Feb. 12—F.C.
,, Shuttleworthi .. .. Shuttleworth, April 8—F.C.
,, vexillarium superbum .. B. S. Williams, July 22—F.C.
,, ,, splendens .. .. B. S. Williams, April 22—F.C.
,, Williamsianum .. .. B. S. Williams, June 24—F C.
Oncidium anthocrene .. .. F. Sander & Co., Feb. 12—F.C.
,, cucullatum giganteum .. Sir T. Lawrence, April 8—F.C.
,, Jonesianum .. .. A. H. Smee, Feb. 12—F.C.
Osmunda javanica .. .. Veitch, May 13—F.C.
Parottia persica .. .. W. Paul & Son, Feb. 12—F C.
Passiflora Constance Elliott .. { Lucombe, Pince & Co., May 27—F.C.
Pelargonium (Ivy-leaved) Isidore Feral .. .. Bealby, May 27—F.C.
,, La Cygne .. .. .. Cannell & Sons, Nov. 11—F.C.
,, (zonal) Belle Nancienne Laing, May 13—F.C.
Phaius irroratus purpureus .. Veitch, April 8—F.C.
,, luridus .. .. .. Schroeder, May 27—F.C.
Phalænopsis sumatrana purpurea .. .. Sir T. Lawrence, May 13—F.C.
Phlox setacea var. Vivid .. Ware, May 13—F.C.
Picotee Picturata .. .. Turner, June 24—F.C.
Primrose James Douglas .. A. Waterer, March 11—F.C.
,, Princess of Wales .. A. Waterer, March 11—F.C.
Primula Rusbyi .. .. R. Dean, July 22—F.C.
,, Sieboldi Brilliant .. Geggie, April 22—F.C.
,, ,, Purity .. .. Geggie, April 22—F.C.
,, sinensis Emperor .. Cannell, Feb. 12—F.C.
Prunus Pissardi .. .. Veitch, July 22—F.C.
Pteris serrulata cristata compacta .. .. May, Oct. 14—F.C.
Rhododendron Empress .. Veitch, July 22—F.C.
,, President .. .. Veitch, June 24—F.C.
,, Princess Beatrice .. Veitch, March 11—F.C.

Rose (hybrid Tea) Grace Darling	H. Bennett, March 11—F.C.
„ (Tea) Madame Eugénie Verdier	Paul & Son, July 22—F.C.
Rosa polyantha Anne Marie de Montravel	H. Bennett, March 25—F.C.
„ lucida var. Rose Button	Veitch, July 22—F.C.
„ (Tea) Etendard de Jeanne d'Arc	H. Bennett, April 22—F.C.
„ Sunset	W. Paul & Son, June 24—F.C.
Sarracenia Wrigleyana ..	Veitch, Oct. 14—F.C.
Saxifraga Burseriana	Carter & Co., Feb 12—F.C.
Senecio pulcher	R.H.S., Nov. 11—F.C.
Spiræa bullata	Paul & Son, July 22—F.C.
„ purpurea	Veitch, July 8—F.C.
Statice Suwarowii	Carter & Co, June 10—S.C.
Streptosolen Jamesoni	Cannell & Sons, March 11—F.C.
Syringa flore-pleno Lemoiniana	Lemoine, April 22—F.C.
Verbena Lord Brooke	W. Stacey, June 10—F.C.
„ striata	W. Stacey, June 24—F.C.
Viburnum tinus aureo-variegatus	Lee & Son, Nov. 11—F.C.
Violet Willsiana	Wills, March 11—F.C.
Wallflower Bedfont Yellow ..	R. Dean, March 25—F.C.

BOTANICAL CERTIFICATES.

Scuticaria Steeli	The New Plant and Bulb Co. —Aug. 12
Curcuma sumatrana	Veitch—Aug. 12
Cyrtanthus lutescens	B. S. Williams—Oct. 14

NEW VEGETABLES CERTIFICATED.

Rhubarb Hawke's Champagne	G. Bunyard, March 25—F.C.
Savoy Universal	Gilbert, March 25—F.C.

FRUIT CERTIFICATED.

Apple Lady Sudeley, *alias* Jacob's Strawberry	Bunyard, Sept. 9—F.C.

[*For Certificated Plants at the Royal Horticultural Society meeting, Dec. 9, see p. 760.*]

THE POTATO DISEASE.

IN the *Gardeners' Chronicle* of October 7, 1882, p. 460, I gave some account of certain bodies I had discovered in the leaves, the tubers, the haulms, and other parts of the Potato. These bodies, of about one-twentieth of a millimetre in diameter, but varying in size, were provisionally named sclerotia, or sclerotiets, as appearing to stand in the same relation to the fungus, Phytophthora. infestans, as an admitted sclerotium stands to the final stage of its peculiar fungus.

I shall not here go over all the opinions which were expressed regarding the real character of these bodies. Their existence, when once the method of finding them had been pointed out, was too obvious to be denied; but if they were sclerotia, or if they had the functions of sclerotia, or the functions of spores, or of plasm, or of any reproductive part of a fungus, they implied a biological theory of Peronospora infestans at variance with accepted views, and they must be put to crucial tests. They were submitted to the Scientific Committee of the Royal Horticultural Society, and were handed over for deliberate examination to Mr. George Murray, F.L.S. The result of this examination appeared in the *Journal of Botany* for December, 1883, in a paper by Mr. Murray and Dr. Walter Flight, F.R.S.

Mr. Murray and Dr. Flight worked upon materials supplied by me, and I may here allude to some of their methods and results. "Numerous cultivation experiments," they say, "were instituted with the bodies in question, the result being in all cases negative as regards any manifestation of life whatever in them." The "plasmodiation," "myceliation," &c., described by Mr. Wilson, wholly failed to appear. These experiments thus proceeded on a misconception of the problem—they were attempts to make a parasite grow in dead materials; a parasite grows on in living materials. A Penicillium grows on dead matter and is not a parasite; our Peronospora is a parasite growing only on living materials, and hence its destructiveness. If it could feed and grow on dead matter it would do no harm whatever. The phenomena seen by me as resulting from the myceliation (germination if there were a germ) of the bodies, were seen immediately after the death of the leaf tissue, having been developed while the tissue was living. But a thin slice of the haulm does not die so rapidly as the leaf, and the granules of the bodies will throw up a completed crop of Peronospora on a slide in a night's time.

I had told Mr. Murray, by mistake, that the sclerotia were soluble in acetic acid. I think I also told him that they were soluble in nitric acid. But my experiments with nitric acid were upon the bodies as contained within the leaf-tissue, or very imperfectly isolated by squeezing. Under such circumstances I had seen them rapidly disappear upon the application of nitric acid, and my heart failed within me!

Well, by this same crude method Mr. Murray and Dr. Flight proceeded to test for the oxalate of lime implied in the tentative solution by nitric acid and resistance of solution by acetic acid. They took from portions of leaf and placed in nitric acid, and "in the lapse of half-an-hour the so-called sclerotia had entirely vanished." The solution stood over-night, and "in the morning crystals having the form of a square-based octahedron were seen plentifully in the liquid under the microscope, the greater part having separated in an amorphous state." And the conclusion is, "We have, therefore, no hesitation in saying that these so-called sclerotia of Phytophthora infestans are merely masses of oxalate of lime."

But a very important defensive outwork is placed in the rear of the paper:—"It might be contended by Mr. Wilson," says the writers, "that since oxalate of



FIG. 130.—SCLEROTIUM OF PHYTOPHTHORA INFESTANS, FROM POTATO LEAF.

A, As seen by transmitted light before treatment with nitric acid; B, After treatment with nitric acid; C, Myceliating granules seen in B.

lime is to be found in certain plasmodia, a mistake has been made, but the application of dilute nitric acid for half-an-hour to the leaves would not have been sufficient to remove all trace whatever of a protoplasmic structure such as a plasmodium." Now this proceeds upon the assumption that if there are bodies additional to the balls of semi-crystallised granules of lime, they ought to be visible within the leaf tissue after the lime has been dissolved. This is the very point which ought to have been proved and not assumed. The masses of lime, although of snowy whiteness in reflected light, are opaque in transmitted light, and hence are easily seen; but if there is a sclerotium, or something biologically equivalent, concealed by the lime, and of a translucent character, it

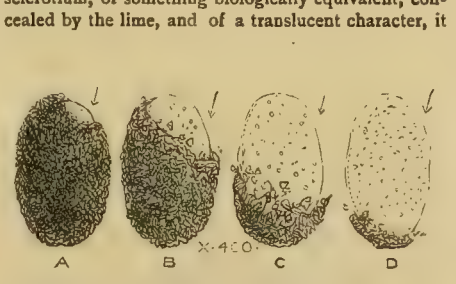


FIG. 131.—CHANGES SEEN IN THE BODIES FROM POTATOS WHEN TREATED WITH NITRIC ACID, AS SKETCHED BY MR. W. G. SMITH. ENLARGED 400 DIAM.

will be entirely hidden within the leaf tissue, you cannot disentangle it from the plasm, and the chlorophyll, and the minuter cells of the leaf.

Well, then, what is to be done? What I did was this: I took little bits of Potato leaves (Ashleaf, Pink-eyes, and Magnums), some in which disease had not begun, and some in which the watery green extensions of black spots indicated the current inroads of mycelic lines, and put them in cold water for maceration four or five or more days. A bit was then put under a low power to find if a fair number of well-defined bodies were present. A smaller bit of such a leaf was then teased out with needles upon a slide in plenty of water, in order, if possible, to isolate some of the bodies from the leaf tissue altogether. A thin cover was then placed over the broken-up materials, and a low power was run over the field to hunt up detached sclerotia. The first was sighted just touching a palisade cell at one point. The keener scrutiny of a tenth was placed over it. And now with fear and trembling the drops of nitric acid begin to enter from the upper edge of the cover. A hair pencil removes the water ejected at the lower edge. In less than half a minute the lime crystals grow transparent at the optical edges of the ball, the solution becomes more rapid, and in another half minute (for the acid is labelled poison) not a particle of lime remains. But there where the opaque sphere had disappeared stands convicted a pellucid ball of granular plasm. Perhaps it will disappear too. Let us look at it before it goes. The mass is highly translucent. A conidiophore looms through it. It is everywhere pervaded by sporidic granules, some of a round form, others of an oblong form, like short pieces of excessively delicate mycelium. The whole has a soft hue, like fine pencilling, and the outline is in most places perfectly definite, with here and there a break as if part of the material had flowed out at the side. It is not disappearing; more acid is applied, but what had so rapidly discharged the crust of lime has no effect on the wall of fungal plasm which supported it. There it stands very visible for hours in the strong acid, not obscured by leaf-cells, not at all capable of having its burglarious existence denied, but a thing of some kind or other asserting itself for a fact.

This experiment, with the body in most cases completely isolated from all tissue taken from various leaves, and performed at various dates, I repeated four-and-twenty times, with the same results. Sometimes the little clean ball stood in the acid over night below the microscope, and presented the same appearance in the morning as it did fifteen hours before.* In some cases there were little streams of granules flowing out from the body before treatment; these were not affected by the acid, and presented the same optical reactions as the granules of the body itself and the granules in the surrounding lines of mycelium. A conidium of Phytophthora infestans is about half the size of one of these bodies within the leaf, and the contents of the conidium are optically very similar to those of the sclerotium as seen after being divested of its calcareous coating, and both equally give rise to mycelium. A thin slice of a very young and still white sclerotium of Typhula incarnata also presents nearly the same resemblance, only myceliation is more pronounced.

In a few cases measurements were made before and after the lime was removed. In one case the diameter was reduced from .050 mm. to .047. In another case the dimensions were reduced from .059 × .045 mm. to .048 × .036; in another case no sensible reduction was observed.

That some of the minute plasmodiating fungi are normally coated with lime is well known, indeed a covering of lime is characteristic of certain genera of the Myxomycetes, as the reader may fully see in Dr. Cooke's *Myxomycetes of Great Britain*. The Chondrioderma, for example, have the sporangium well "encrusted with granules of lime, sometimes quite shell-like." And in the *Gardeners' Chronicle* of July 15, 1882, Mr. W. G. Smith describes and figures a Myxomycete covered with crystals of oxalate of lime.

My previous observations and experiments, which seemed to me to prove the genetic connection between these lime-covered bodies and the conidiophores of P. infestans, were chiefly directed to the tracing of mycelium lines up to the granular materials of these bodies. I have now to thank the Royal Horticultural Society, and more particularly Mr. George Murray and Dr. Flight, for directing attention to chemical tests. The results of these are most satisfactory and convincing, and leave no doubt that the "seeds" of any outbreak of Potato disease are insidiously lodged in the plant while yet in its healthy condition. The theory thus involved, worked out in a short treatise, rather overweighted with illustrations, has been lying beside me for a year or so, and may see the light some time, now that a formidable-looking objection has been cleared away. The suggestions which it will offer towards the elucidation of parasitic life, both animal and vegetable, may possibly have some value in showing why it is necessary for one organism to

* One was fifty hours in acid and remained perfectly unchanged. I have had young sclerotia of Typhula incarnata for weeks in strong nitric acid undergoing no change.

become parasitic in another, and in showing that the destruction or damage of one vital form is an incident in the perpetuation of another. The Peronospora infestans can be matured and perpetuated only by the Potato disease. *A. Stephen Wilson, North Kinmundy, Summerhill by-Aberdeen, Sept.* 25.

The second of the two illustrations on p. 757 (fig. 131) is copied from a sketch made from Nature by Mr. W. G. Smith, and exhibited and described by him at the last meeting but one of the Scientific Committee. Mr. Smith at that time had not seen Mr. Wilson's drawing, or heard his paper. It represents the gradual dissolving away under nitric acid of the incrustation of oxalate of lime from an inner transparent body. The arrows show the direction whence the nitric acid has approached, and the changes from A to D, Mr. Smith said, took place in about one minute. The incrusted bodies experimented upon by Mr. Smith had been very carefully and completely isolated from Potato leaves with needles; the inner material, he said, was unchanged after remaining in nitric acid for twenty-four hours.

HOME CORRESPONDENCE.

Practical Notes on the Potato Disease.—I firmly believe that the ravages of this dire pest may by proper precautions be, if not prevented entirely, at least reduced to a minimum. I am now dealing with the old-fashioned disease, Peronospora, but I am aware that there are other and various forms of diseases that attack this tuber—some forms of disease which begin in the ground but do not show until after lifting the crop. The past dry summer has been one that if where ordinary care has been exercised little disease on the tubers has been seen. We have two splendid disease-resisting Potatos, Champions and Magnum Bonum, yet even these will have more disease than the earlier varieties unless the earlies are left in the ground after the tops have decayed but more of this later. I shall endeavour to prove that it is through the disease spores being washed from the leaves that it is transmitted to the tubers. I at one time believed that the spores went down the stem, thus infecting the tubers, but it is not so, as my later observations prove. I do not, however, go so far as to say it is impossible; I will admit it does so occasionally, but not generally. At lifting time take a dozen diseased tubers, and where do we find the signs of disease?—not at the end nearest the stem but, on the contrary, at the present time, as a matter of fact, the disease is found at both ends (eyes and string end); yet even now the preponderance is at the eye end. There are very good reasons or causes for this, firstly, the eye or thick end of the tuber being naturally nearest the surface of ground, and being also of a different texture to the stem or string end, it is the most susceptible. Often it is through an eye that the disease travels so, and when the spores rest on the tuber as soon as it touches an eye it quickly spreads. I have been told of disease, beginning at the string end, but have never seen this and therefore doubt it. And why is this? Well, I believe, because of the fact that this end, more particularly in the kidney varieties, is of quite a hard nature, and in a good tuber, when cooked, is the least eatable—to those, at least, who like a mealy or floury Potato. In cutting a Potato in halves (a diseased tuber) where do we find the Peronospora? Very seldom do we find it at the stem end of the tuber, but we see the continuation of the string or wood fibre running at about equal distances all round the Potato; and this holds the disease—for how long I cannot say—before it works its way to the central or more watery portion of the tuber. Other diseases affect the tubers in various ways. There are, however, tubers that are apparently sound outside, but which when peeled for cooking are found diseased inside, yet even in these cases the disease can be traced to an eye. Having said this much I will now proceed a step farther—to consider the remedy, or at least the means of alleviating the ravages of the pest: this is, moulding, or cutting off the tops. Let me here say that the sooner the crop is lifted after ripe the better the quality, and better the keeping. Moulding, if done in time, as Jensen recommends, is a certain cure, but unfortunately the cure is as bad as the disease, the high-moulding reducing the crop very much, say half, and this half crop consists of many small tubers. The quality, however, is of the best, and tubers of the best neat shape also. This past season, if the crop were lifted when just ready, the season being early, before the autumn rains, high-moulding would not be required. I believe, however, that in light sandy soil this high-moulding is not at all necessary, as I fully believe in such soil the disease is held so long in the sand that the spores are dead before reaching the Potatos I used to think that the spores were washed past the tubers, but whichever it is, certainly a sandy soil is not favourable to the spread of the Peronospora. In heavy, retentive soil a middle or medium system of moulding will do, more especially if the tops are cut off as they ripen or change colour before the heavy rains begin—the heavy rains which accompany thunderstorms with the heat are so very favourable for the rapid spread of the disease. Some four years since, in growing some thirty varieties of Potatos, in lifting for a local exhibition, immediately after a thunder-storm, I was surprised to find the day after, even though the tubers were sound to all appearance, when washed they showed the disease very plainly. Those, however, lifted before the storm remained sound. I have noted cutting the tops because there are those who assert nothing short of pulling up the tops will do. *Stephen Castle, West Lynn, Norfolk, November* 28.

Awards to Fruit.—As I believe I am the person referred to in Mr. Gates' note on this subject at p. 693, please allow me to say in reply that I have not the slightest recollection of the circumstance he names, and, moreover, I am certain that I should be no party to disqualification of his exhibit of Court Pendu Plat as a dessert Apple, and I think that I may also with certainty say the same of my colleague on that occasion, Mr. Pragnell, of Sherborne Castle. Probably we had a discussion as to ripeness, though of this I have no recollection, and that then I may have said that Court Pendu Plat lost a point owing to being unripe, but I deny that we could have had even a thought of doing anything so absurd as disqualification. As to my exhibiting the same kind at the last show, my reply must be, that I always take my best produce to whatever show I compete at, and after placing together several varieties, and judging them from my own standpoint, the three kinds that looked best were King of Pippins, Ribston Pippin, and Court Pendu Plat, and though the latter were not ripe they looked so, the colour being a bright crimson and russet. I quite think the colour of all three of my dishes took the eye of the judges rather than ripeness, for though all were eatable none were in the strict sense of the word quite ripe. I was not present at the show myself, so can give no opinion as to whether the awards were right or wrong; it is sufficient for me that I won, and I should not have growled at all if Mr. Gates had beaten me. I close by reminding him that there are judges and judges, and though none are infallible, all I believe try to do their best; at any rate, he may with certainty again compete with Court Pendu Plat as a dessert Apple without fear of being disqualified—I say nothing as to ripeness—if he shows it as a ripe fruit in November. The "week earlier" that he alluded to is no criterion as to ripeness, for if he compares the sunshine of this autumn with that of last year, the amount has been so much greater that all kinds of Apples and Pears are ripening at least a month earlier than usual, and to this cause I attribute the extra good colour and apparent ripeness of my dish of Court Pendu Plat. *W. Wildsmith, Heckfield, Winchfield.*

Covent Garden Salesmen.—I have noticed your reply to the complaint of some sender, headed "Covent Garden Salesmen," wherein it is stated that the business of sending consignments of goods to the market is, in fact, simply "a speculation." I cannot see that this is so, or, if it is, it certainly should not be, since it should be the aim of every upright salesman, not so much to seek to obtain consignments, as to arrange as near as possible the despatch of goods to meet a good market, and enable him to realise such a price as would at all times remunerate the sender. If this rule were adhered to there would be little cause at all for complaint. *Sampson Morgan.*

—— I am not at all surprised to see the complaints made of the poor prices realised for cut flowers, &c., sent to salesmen in Covent Garden Market in comparison with those published weekly in your columns. In the first place, I always think your prices are often overdone; for instance, this week Gardenia blooms are quoted at 9*s.* to 18*s.* a dozen. I have sent blooms this week to one I believe who returns as good prices as any salesman in the market, and the price I have got for really first-class blooms is 4*s.* a dozen. The same by Eucharis and other choice flowers. I find in a general way the ruling price is about one-half the lowest price quoted in your weekly list, and to get even that you must be careful to whom you are sending. There are some who advertise largely for cut blooms who, I should think, never expect to get more than one consignment, for their returns are never calculated to secure a second lot from any one. I know of an instance, when 6*d.* was the return for two dozen fine Eucharis blooms on December 2, and once when I was sending white Camellias to a new salesman, I got a friend in London to call on the salesman the morning my Camellias were there, and bought a two-dozen box of my blooms for which he paid 8*s.* a dozen: my return that morning 1*s.* 6*d.* per dozen! You may imagine I did not send to that salesman again. There are good salesmen in the market, the only thing is to find them. A good deal is in the hands of the senders: if you are dissatisfied once, why send again? but look for a market elsewhere. I am certain at the present time scores of gentlemen's gardeners are sending flowers to Covent Garden which do not realise sufficient to pay for the attention to the plants. To such I would say, Find a market elsewhere than Covent Garden—look nearer home. *W. H. Jones.*

—— Your paragraphs in your impression of the 29 h ult. and the 6 h inst. respectively seem to us to convey such a general charge of irregularity in the conduct of business in this market, inasmuch as you say "it is desirable to find a remedy for a state of things which is becoming intolerable," and knowing that your love of fair play never intended mixing the black with the white sheep, though we do not admit that the excuse given in the case in point is untenable, we must ask you to take the earliest opportunity of explaining to your readers that you do not wish your remarks to apply to those salesmen whose position and standing have been established, and who are, we feel certain, above the reproach inferred by your remarks. *J. Webber, G. Monro.* [Our correspondents need scarcely have troubled themselves We are quite aware that there are many whose reputation is such as to be unaffected by what has been said, and we are further informed that the managers of the market are quite prepared to refuse to admit to further tenancy any salesman of a different stamp against whom a definite case can be maintained, ED.]

The Gardeners' Royal Benevolent Institution: Augmentation Fund.—Allow me to draw the attention of your readers to a letter signed "J. W.," which appeared on the 29th ult., p. 692. In that letter your shrewd correspondent clearly pourtrays the views of the framers of the original rules, under which male pensioners receive £16 a year, and females £12, and pertinently draws attention to the fact that an arrangement or apportionment which has hitherto given satisfaction is now about to be departed from by adding £4 a year alike to males and females, provided the necessary funds be forthcoming by the end of the current year. Having myself taken an active, and I think it will be admitted very successful, part in securing one-eighth of the money required exclusive of the names of a few Life and Annual Subscribers, kindly grant me permission to say I fully concur in all "J. W." has written upon this subject, and join with him in asking others who are interested in the Society to express their views in your paper before the meeting takes place in January next. Doubtless the members of the committee have well considered the matter, and will, through their secretary (Mr. Cutler), explain to subscribers and collectors their reasons for making the apportionment four to five, instead of three to four, as it is only reasonable to assume that a widow with an income of £15 a year will be better off than a man who may have to support a wife and provide a home on £20 a year. *W. Coleman.*

Horizontal Tubular Boilers.—"Yorkshireman's" object in asking as to these boilers is no doubt an honest one, but how can he decide which is the better boiler from the few answers received of those who have used them, since the failures are not likely to be admitted? If one hundred replies from large establishments were obtained, a fair idea of the respective merits of these and other forms would be attainable. But how many pages of precious space would be required for the purpose of giving publicity to them? "Thrumpton" refers to a good saddle form of boiler supplied by a certain firm, and the next week Messrs. Pearson refer to the same firm as supplying an improved make of the horizontal tubular, but the judgment of the firm referred to would not be conclusive, as they, like other engineers, impartially provide any boiler a customer chooses. With all deference to gardeners, I think there are few of them who can decide as to the best boiler, because, as a rule, their experience is limited to three or four—possibly half a dozen different ones; and I know some who having had a particular make at one place which they have condemned, have found it to work well at their next situation. Quality of fuel, setting, stoking, draught of chimney, the arrangement of pipes, &c., as has been pointed out often in the pages of the *Gardeners' Chronicle*, have as much to do with the good or bad working of the boiler as its make in most cases. A Groombridge, while condemning the saddle, admits he has had to reset his present boiler seven times, but does not say of what make the boiler is that requires such fine adjustment. There is one important matter in connection with tubular boilers, whether horizontal or upright, that must be considered, and that is, being of cast-iron they are liable to crack suddenly when forced too rapidly; so that, if not arranged with duplicate boilers, the pipes are rendered useless at a critical time, and plants are lost while waiting for repairs.

Wrought-iron does not give so suddenly, heats quicker, and is safer, though it may not last as many years as cast-iron in damp places. An 8-feet, or any open-ended saddle, is certainly wasteful of fuel, as a 5-feet long terminal-ended and flued saddle will heat as much piping with half the fuel, and cost little, if any more, when fire-bricks and setting is included. Discussions as to boilers, some lengthy, others insignificant, crop up periodically, and indicate a certain amount of interest in the subject. May I suggest the importance of getting together some statistics from all parts of the kingdom, and the classification of the results in a tabular form for the guidance of the fraternity at large? I should be pleased to assist in preparing a form of questions if gardeners, as a whole, would take the trouble to answer them, and return to you, which I would afterwards analyse and give averages of, as to economy, power, &c., for publication during the winter or slack period of gardening operations. *Ben.*

—— I am afraid the information given by "Thrumpton" and Mr. Groombridge in answer to "Yorkshireman's" inquiries respecting horizontal tubular boilers will not assist him very much in deciding upon the merits or demerits of the various tubular boilers in use at the present time. Mr. Groombridge certainly gives him, at p. 628, the number, length, and width of houses he has connected with one boiler, and at p. 725 he gives the length of 4-inch piping he has in those houses, viz, 2300 feet; but he omits to say whether the houses are lofty or low, lean-to's sheltered under a south wall, or span-roof standing out in an exposed situation, nor yet the temperature each house is kept up to; and instead of the cost it would have been better had he given the weight and class of fuel used, as the cost of the same class of fuel varies so much in different districts. "Thrumpton" gives less information: he simply says that his boiler is heating 2339 feet of 4-inch pipes (p. 692) for less than 12*s.* per week, but costs more in severe weather and less in mild summer weather. Statements such as these, unless accompanied with a detailed account of surrounding circumstances, are not of much value to "Yorkshireman," but are very misleading, and sometimes cause employers to be dissatisfied and look upon their gardeners as being expensive and extravagant because they do not manage to work the heating apparatus on as cheap a scale. In conclusion I may say that I think their calculations should extend over a lengthy period, on account of the extreme mildness of the past year. *J. Hughes, Edgbaston.* [We think very much more depends in heating garden buildings on the sufficiency of pipes for the various purposes for which the houses or pits are meant than on the construction of the vessel in which the water is warmed. A great deal is also dependent on the setting, and on intelligent stoking so as to prevent waste of fuel. Ed.]

Cucumber Growing.—In answer to your correspondent, Mr. Longthaw, respecting the quantity of Cucumbers cut, which he states to be 11,744 dozen, certainly that is an enormous quantity; but after taking into consideration the quantity of glass (765 yards), also the enormous quantity of plants (2000), I do not see it is more than an average crop. Now, as I wrote to the *Gardeners' Chronicle* a little more than twelve months since for the same information as Mr. Longthaw, I may be permitted to again refer to my success in Cucumber growing, and state the quantity I cut. From a house 14 yards long and 15 feet span, with twenty-four plants, I cut from February to November 2700 good saleable fruit, or an average of a little over nine dozen to each plant; therefore, had I had the same quantity of plants as your correspondent my total would have been 18,750 dozen, and I may state I have had equally as good success this year. *Alfred Bishop.*

The Jensenian Theory.—At p. 597, Mr. Plowright says Mr. Jensen "lays claim" to the discovery of the spore-retaining power of the soil, &c., in the Potato disease. I have shown several times that the idea of high moulding is a very old one indeed, both here, on the Continent, and in America. Without the slightest feeling of disrespect to Messrs. Jensen and Plowright I beg to say the spore-retaining idea is equally old. Twelve years ago, a correspondent, Mr. A. Thompson, of Whitehaven, wrote a long and excellent letter for the *Gardeners' Chronicle*, on the Potato disease (1872, p. 1538). The writer says "the Potato disease may be greatly mitigated by laying and keeping down the haulm in the furrows by moulding-up," so that "the rain may wash the spores of the fungus into the furrows instead of on to the tubers." He further says he has tried "moulding-up deep, with the view of burying the tubers so deep as to prevent the fungus from vegetating upon them." This writer also refers back to the *Gardeners' Chronicle* for 1861—twenty-three years ago, and two years before Professor De Bary's paper was published—where, at pp. 176, 240, and 792, the bending over of the haulm is advocated. *W. G. Smith.*

Boussingaultia baselloides.—Can you name for me the accompanying specimen? The history of the plant is curious. In 1880 a lady brought home a small stick of it, about 2 feet long, from Palmeiras, near Rio. It was in a small pot, and had little or no foliage. I had it repotted in a large pot and put it in my hothouse, and it did nothing except put out a few small leaves about the size of a crown piece or smaller. After two years I thought it might like more air, and I transferred the plant, pot and all, into the warmer of two vineries. It there languished in the same way, throwing out a few feeble tendrils, but substantially doing nothing. I was about to throw it away, when eighteen months ago I thought I would try planting it out first, and I planted it in a bed at the back of my vinery. It has taken complete possession of the place. It entirely covers the back wall, about 25 feet by 14 feet, and is massed in thick clusters of foliage which make a large bower in one corner. The largest leaves have been longer than the double width and broader than the depth of a sheet of notepaper, and the upper part of the house is one mass of the graceful inflorescence of which I send you a specimen. It has spread through a weak place in the structure and taken possession of an Ivy-covered chimney outside, where it wages no unequal war with the Ivy. We had to sacrifice about a dozen bunches of Grapes to it this year, although we cut it back very hard last autumn. The house is full, if a little sunshine comes, of wasps, flies, and bees, attracted by the sweet smell of the flowers. I have not been able to ascertain its name. The stem is curiously furnished with knobs and excrescences. *Correspondent.* [The plant is Boussingaultia baselloides, a most graceful free-flowering fragrant plant, nearly hardy in some places. The tubers on the stem are curious, as resembling those found sometimes on the haulms of Potatos. Ed.]

Grapes Shanking.—That this is the cause of as much bewilderment at the present time as it was in days long gone by there cannot be much doubt, and our present knowledge and experience point to the fact that it is likely to remain so for some considerable time to come. To enter into details would be superfluous, as such remarks as one would have to offer, be they based on theory or practice, must almost of necessity be simply a reiteration of what has been stated hundreds of times before. I give the following case, however, which was brought under my notice only a few days ago, for what it is worth, and will leave your readers to draw their own deductions therefrom. In a vinery planted with different varieties were four or five Vines of Muscat of Alexandria at the warmest end, which shanked badly every year. No cause could be assigned. Three or four years ago they were cut down and grafted with Gros Colmar. The latter has done well ever since, and there has been no shanking of the bunches, notwithstanding the fact that the roots and border, which are outside, have had nothing whatever done to them, nor has their treatment in other respects been altered. This would seem to demonstrate that the influence of stock and scion has in some cases an influence on shanking. *H. J. H.*

Hot-water Pipes and Gas Tar.—It was once my lot to be situated similarly by to Mr. Bishop (p. 692), but my then employer compelled the tradesman to clean the pipes, and two men were for days burning and scraping in a similar way that old paint is removed, but it was months ere the houses were free from the dreaded tar fumes. It made great havoc among Ferns. After the pipes had been cleaned by the tradesman I received a bottle of mixture called Alkahost, from S. Beniams & Co., Southwark, and with it a letter, specifying that it would remove tar from hot-water pipes, but the tradesman having just completed his cleaning of them I did not feel free to try the Alkahost. If Mr. Bishop should try the Alkahost, perhaps he will communicate the results to the *Gardeners' Chronicle.* It was to be applied to the pipes, and the tar could be rubbed off shortly after. *Alfred Hopkins.*

Seaside Shrubs.—To remedy incompleteness, at least partially, I send the following additional list of shrubs suitable for warm aspects facing the sea on the west and south coasts:—Escallonia montevidensis, Cotoneaster frigida, Veronica Traversi, Taxodium distichum, Hydrangea paniculata, Genista præcox, Tamarisk, Fuchsia Ricartoni, and others. In places sheltered entirely from north and east winds, Arundo conspicua, various of the Eucalypti, Clethra arborea, Azalea indica alba, Abutilon Boule de Neige (train it as an espalier), Aralia Sieboldi, Araucaria Bidwilli, Coprosma variegata, Phormium Veitchii, Acacia dealbata, A. lophantha, and Camellias of sorts. These are all shrubs seen in various South Devon and Cornish gardens. They are put down as they occur to me without the prompting of any references. Some are generally known as greenhouse shrubs. Every one speaks of the Tamarisk as a maritime shrub, but it is not so common as its beauty ought to make it. For the outside fence to top the wall of the villa garden and act as a wind-screen nothing could well be more desirable. The Sea Buckthorn is as much at home inland as by the sea border, and when mingled with the Colchic Maple (kept in due bounds), and Cornus mascula aurea elegantissima, forms an attractive mass of foliage and colouring. *C. A. M. C.*

Reports of Societies.

Royal Horticultural: *December 9.*

Scientific Committee.—Sir J. D. Hooker, K.C.S.I., in the chair. Present: W. G. Smith, A. McLachlan, Dr. Masters, Dr. G. F. Wilson, E. G. Loder, D. Houston, A. H. Smee, R. J. Lynch.

The Sclerotits of the Potato.—Mr. G. Murray stated that he had examined Mr. Wilson's specimens in the manner prescribed by Mr. Wilson, but had failed to see the protoplasmic bodies mentioned. On the other hand Mr. Smith working on the same material had succeeded in obtaining the same results as Mr. Wilson, and showed drawings made by himself before he had seen Mr. Wilson's sketch. Mr. Wilson's paper and Mr. Smith's independent observations are given in full in another column, p. 757.

Roots of Sparmannia.—Mr. McLachlan reported upon these roots, sent by Mr. Plowright to the last meeting. They appear to be due to the attacks of Rhizoglyphus Robini (?) (gen. of Tyroglyphidæ). Mr. Albert Michael reports that it has appeared this year in numerous places, and is doing much damage to bulbs. The individuals are considerably smaller than most, but this is not unusual in Acari. He suggests that they are not so well nourished as by bulbs. Mr. McLachlan added that he could find nothing in the hard swellings, but only in those that were softened by incipient decomposition. He suggested that inundation at intervals, if practicable, might do good, or saturation of the soil with kerosene or bisulphide of carbon, as used for the Phylloxera, might be tried at intervals, so as to destroy the eggs as well as the developed mites. He further remarked on the Tyroglyphidæ, that they have been supposed by some to be parasitic on the Phylloxera, but that this idea is not entertained by Mr. Michael. They usually attack the Lily bulbs between the scales, apparently giving rise to a resinous exudation not uncommon on bulbs. Mr. Smith reported on the same roots that he had discovered nematoid worms, but only on the green parts.

Floral Monstrosities.—Dr. M. T. Masters exhibited drawings of Vicia americana and Cypripedium Sedeni. In the former the calyx had stipular processes developed between the lobes; the petals were simple or variously lobed, five to seven in number, with little or no distinction between the standard, wings, and keel. The stamens were variable in number, some consisting of simple threads devoid of anthers, others bearing at the top two to three petal-like lobes; when three in number the central one bore an abortive anther. The pistil was stalked with more or less foliaceous carpels without ovules. The Cypripedium had the three sepals distinct; the two lateral petals were arranged diagonally, unequal in size. A lip-like petal was slightly calcarate at the tip. The column had the two lateral stamens perfect, but no staminode. Each stamen bore a petaloid wing.

Diospyros Kaki.—Mr. G. F. Wilson showed ripe fruits of this plant of the size and colour of a Trophy Tomato. The flavour was agreeable, and free from astringency.

Cola acuminata.—Mr. Ridley showed a specimen of a seedling of this plant in which there was a well-developed miniature inflorescence between the fleshy cotyledons.

Passiflora fetida.—Mr. R. J. Lynch showed from the Cambridge Botanic Garden ripe fruits of this species invested by a fringed involucre thickly studded with glandular hairs, like those of Nigella; the fruit itself was ovoid, of the size of a Cherry, quite glabrous, and of an orange-yellow colour. Though the plant is weedy in habit, the fruits, with their delicately fringed bracts, were very attractive.

Sphæralcea umbellata, &c.—Mr. Lynch showed flowers of this handsome Malvad, and also of Abutilon igneum.

Red-spotted Potatos.—A communication was read from Yorkshire to the effect that "a large crop, of fully 10 tons to the acre, was badly attacked by this disease. It was a first crop after breaking up a common where formerly Heather and Fern grew. The soil was light and sandy. The worst affected appeared to be from the earliest planted seed. (A similar attack has occurred in Potatos grown in old soil.) The land was worked well, ann manured with a dressing of long dung, and about 6 cwt. per acre of a mixture comprising sulphate of

potash, muriate of potash, dissolved bones, and sulphate of ammonia, this mixture having proved to be eminently suitable in sandy soil." Information was also received from Kent, where the disease has occurred since 1879, when it attacked Early Rose, since which year it has appeared more or less annually. In 1882 "Myatt's Ashleaf was badly spotted, but it did not at all affect its growing qualities, for the produce from them was entirely free from it. This year the worst is Magnum Bonum, but several varieties are more or less attacked. The soil is a light sandy loam on a high and dry situation. Different manures appear to have no effect in either producing or reducing the spots." Another writer, near Clevedon, "has discontinued growing Victoria on account of this particular disease, which is very bad in dry seasons. The soil is a sandy one, more or less, in every place where they were grown. Manure appears to have nothing to do with it." The coincidence of red-spotted tubers with a sandy soil, and the agreement that manure has nothing to do with it, is thus far noticeable. Further observations or experiences are desired, and communications are requested to be sent to Rev. G. Henslow, Drayton House, Ealing.

Oidium Balsamii. — Mr. W. G. Smith showed specimens of this fungus attacking Grapes at Chiswick to such an extent as to make them unsaleable.

Evergreen Plane.—Sir Joseph Hooker mentioned the receipt of specimens of this tree from Crete, which retained their leaves long after those of the ordinary P. orientalis had been shed. Although the tree was mentioned by Pliny it was little known in this country.

Drawings of Egyptian Mummy with Wreaths in situ. — He also exhibited a drawing sent by Dr. Schweinfurth, showing the Lotus leaves and wreaths *in situ* on the Egyptian mummies. The wreaths and plants contained in them were described in *Nature* and elsewhere.

FLORAL COMMITTEE: *Section A.* — Present: J. O'Brien, Esq. in the chair, and Messrs. H. Williams, E. Hill, J. Dominy, H. Ballantine, J. Hudson, H. Herbst, J. Woodhouse, G. F. Wilson, J. Laing, and Dr. Masters.

Section B.—Present: Shirley Hibberd, Esq., in the chair, and Messrs. Dr. Kellock, H. Bennett, W. Bealby, J. Douglas, G. Duffield, H. Cannell, and H. Turner.

Among new plants sent by W. Lee, Esq., Downside, must be noticed a Dendrobium that had been named Leechianum, but which was determined to be merely a variety, although a good and distinct one, of D. Ainsworthii. It was very free flowering, and the lip marked with a distinct purplish brown blotch. It received a Cultural Commendation. Mr. Lee showed likewise Odontoglossum aspersum with large sepals spotted with brown, light yellow petals, with white lip; also a small plant of Masdevallia racemosa, with one small red flower; as the plant was obviously in an undeveloped state, and the species was known to be much finer than here represented, no award was made, but a wish was expressed that the plant might be again seen when in better condition. From Baron Schroeder's garden Mr. Ballantine showed the beautifully rich-coloured Cattleya bulbosa grandiflora carrying three expanded blooms—Mr. James, The Nurseries, Lower Norwood, exhibiting another, with one bloom opened, of a deeper colour than Mr. Ballantine's. The former grew on a slab without sphagnum, whilst the latter was grown in a shallow pan with packing. Mr. Ballantine contributed Odontoglossum Andersonianum flaveolens, a beautiful flower-spike, and a cut flower-spike of uncommon length of Aërides Rohanianum. F. A. Phillbrick, Esq., Oldfield, Bickley, likewise had a plant of Odontoglossum Andersonianum with a spike of thirteen blooms of good quality and substance. From the same garden came a fine plant of Cypripedium insigne violaceo-punctatum, a good old thing, by no means common in gardens, the dorsal sepal broadly margined with white, the central part of which limb is boldly spotted with brown on a green ground, the rest of the flower like an ordinary C. insigne. Mr. Chamberlaine, gr. to G. F. Wilson, Esq., brought a charming plant of Odontoglossum Alexandræ, having forty-five blooms on one spike. Messrs. Veitch & Sons, Chelsea, showed two new greenhouse Rhododendrons of brilliant colours. R. Conqueror, a scarlet flower in a large full corymb, with anthers dark plum colour; and R. Queen of Roses, a deep rosy-pink of similar formation to the first-named, the habit and foliage of these two varieties being identical. From this nursery came an elegant looking Fern, Adiantum Collisi, having very long slender fronds of a light green colour, the pinnæ widely separated. The plant would make a good table decorative subject, without quite intercepting objects from view. Sir Trevor Lawrence (gr., Mr. W. Baxter) showed Calanthe Sandhurstiana, a brilliant rose-coloured hybrid, not seen at its best, the plant being very small and weak; also the dark brown flowered Houlletia odoratissima. Mr. B. S. Williams, The Nurseries, Upper Holloway, exhibited some rosy-scarlet Poinsettias. A tree Carnation with a floriferous habit and colour of the old Clove Carnation, regular and full, was shown by Mr. C. Turner, of Slough, at the same time showing Carnations in some variety—Garnet, a scarlet flower; and Emerald, a cerise one, being the prettiest. Messrs. Cannell & Sons, Swanley, exhibited some splendid varieties of zonal Pelargoniums, single flowered Chrysanthemums, of which three were of American origin, viz., Peter Henderson, Zephyr, and Henry Irving, evidently hybrids of Japanese kinds; also a stand of a white Anemone-flowered variety, very pretty, and great bunches of white Pelargonium La Cygne, a double or rather semi-double form, and Queen of the Belgians, a fine white single flowered kind, very pure in colour and regular. From the same nursery came some good Primula sinensis, of telling tints generally. Messrs. Cannell & Sons were awarded a Bronze Medal for their collection. A nice lot of bloom, and blooming plants of Violet Comte de Brazza, came from Mr. W. Allan, gr., Gunton Park Gardens. Messrs. W. Paul & Son, Waltham Cross, showed Abies Douglasii glauca, side by side with A. Douglasii of the normal character, by which means the decided glaucous tint of the first was markedly shown. Messrs. J. Laing & Co., Stanstead Park, Forest Hill, exhibited several new Chrysanthemums of the various sections of this flower, amongst them being the new golden pompon, Val d'Or, favourably noticed by us last week.

The following were the awards :—

FIRST-CLASS CERTIFICATES.

To Baron Schroeder, for Odontoglossum Andersonianum flaveolens.

To Baron Schroeder, for Cattleya bulbosa grandiflora.

To Mr. Henry James, for Cattleya bulbosa grandiflora,

To Sir Trevor Lawrence, for Calanthe Sandhurstiana.

To Messrs. Veitch & Sons, for Rhododendron Conqueror.

To F. A. Phillbrick, Esq., for Cypripedium insigne violaceo-punctatum.

To Mr. C. Turner, for Carnation (Tree) Grand Monarch.

To Messrs. J. Laing & Co., for Chrysanthemum Val d'Or and C. Fabias de Maderanaz.

FRUIT COMMITTEE.—Present: H. Veitch, Esq., in the chair, and J. Burnett, S. Lyon, J. Willard, C. Ross, G. Goldsmith, — Silverlock, G. T. Miles, J. Roberts, P. Crowley, J. Lee, S. Ford, Dr. Hogg, W. Paul, R. D. Blackmore.

Mr. J. Hudson, gr., Gunnersbury House, sent half a dozen Pine-apples in three sorts, viz., Lord Carrington, Smooth-leaved Cayenne and Queen, for which he was awarded a Commendation, as was Mr. J. Robertson, Gunnersbury Park, for Negro Largo Figs; and G. F. Wilson, Weybridge, for fruits of Diospyros Kaki. Mr. C. Ross, gr., Wilford Park, showed several seedling Apples. From Messrs. Veitch & Sons was sent Celery "variegata," a variety requiring no earthing up to blanch it for kitchen use.

The English Arboricultural Society.—The annual general meeting of the English Arboricultural Society was held on Saturday afternoon in the committee-room of the Victoria Hall, Carlisle, Mr. James Watt, of Knowefield Nurseries, in the chair. After the preliminary business of the meeting had been disposed of the Chairman delivered an address, directing attention to the increased interest attaching to all subjects connected with forest industries in every country, in the course of which he said the past year had been a red-letter one in the annals of forestry. At no previous time was it recorded that so much had been spoken, written, and practically done in connection with the subject. The country at large was waking up to the vast importance of timber, which formed the backbone of all industries. Some of the most important questions of the day were "Tree Planting *versus* Corn Growing," "British Schools of Forestry," "Re-afforesting of Ireland," and "Colonial Wood Conserving." During this year they had inaugurated the first "Forestry Exhibition" ever held in Europe. Sir John Lubbock would shortly move in the House of Commons to inquire into the state of the woods and forests of this country. Dr. Lyons had already done so, and had also lectured upon forestry in Edinburgh, Chester, and other places. Essays had been written and read everywherere, and hardly a publisher's catalogue appeared without a reference to some book or work upon the subject. All this was satisfactory, and proved that the art with which they were connected was receiving general attention.

PLANTING FOR PROFIT. — There was not much sign of agriculture becoming more profitable; and a large proportion of land hitherto cultivated in more prosperous times would be better under woodlands, inasmuch as it would not only give a better return, but also improve the value of the adjoining lands in every respect. He was fortified in this statement by a paper read by Mr. Baty, at the Forestry Exhibition, in which he gave the result of twenty-eight years' management of the Netherby woods, showing that the receipts from 2000 acres of woodlands amounted to £1 10*s.* 11*d.* per acre, and the expenditure to 12*s.* 4*d.* Early in the present century the Earl of Cawdor planted on his Nairnshire property, 800 acres of hilly land, the value of which was but nominal; and now that it had been cut and sold the wood realised the handsome sum of £16,000.

SCHOOLS OF FORESTRY.—Schools of forestry were wanted for instruction for the sake of domestic progress. As a nation they should have a school of foresters that would carry the scientific principles of forestry abroad wherever England had any direct influence politically or nationally. We had hitherto been indebted to France and Germany for the education of the foresters required for our colonial plantations. He believed, however, that a scientific school combining forestry, agriculture, and horticulture, in all its phases would be of most advantage; and that Edinburgh would probably be the most suitable centre for such an establishment in connection with the great University there. Agriculture and horticulture, like twin sisters, had progressed very materially during the present century, but arboriculture had been much neglected. The possibility of a wood famine had turned the attention of the Governments of various countries to protecting their timber resources. In America alone 10,000,000 of acres of forest were annually consumed, of which railroads and manufactures used 175,000 acres.

FORESTRY IN IRELAND.—The re-afforesting of Ireland was being eagerly pressed upon the notice of the public and on the Government by Dr. Lyons and others. That Ireland offered magnificent opportunities for the growth of timber was unquestionable. Mr. Howitz, the Forest Conservator of Copenhagen, who inspected and reported on the adaptability of Ireland for the purposes of re-afforesting, said that in that direction they had found a key to a paradise of wealth and prosperity. Mr. Howitz said that the committee who reported on the planting of the low lying lands in France near the Garonne in 1857 predicted that the timber would add more than 1,000,000 francs to the wealth of France, and the prophecy, which was at first looked upon as wild, had been more than fulfilled; and a region which thirty years ago was one of the poorest and most miserable in France might now be ranked amongst the wealthy and prosperous. When the poor maritime Pine in such a region could furnish such results what could not be done with the humid and rich soils on the hills and ranges of Ireland, where the best and most costly trees of Europe and America would find a congenial home? The facts he had given should lead the Government to consider some scheme whereby Ireland could be turned to account: and if this were done it would help to materially lessen the dire poverty which exists, and still more the hostile feeling which prevails towards Britain.

THE FORESTRY EXHIBITION.—He reviewed the results of the Forestry Exhibition in Edinburgh, which was visited by 500,000 persons. It brought out the fact that several nations—Japan, for instance—were ahead of us in regard to forestry; demonstrated the importance of the use of wood pulp in paper-making; and proved that we could produce hard, durable, and brilliantly coloured woods, to the cultivation of which more attention should be paid than hitherto. Specimens of Scotch Fir timber from Balmoral exhibited qualities both of colour and graining unsurpassed by any imported coniferous woods. We had still a great deal to learn regarding the best methods of seasoning timber. There was to be a forestry exhibition at the Alexandra Palace next year. It spoke well for the forestry of the North that the first exhibition of the kind was taken up by the Scottish Society; and he believed he was one of the four who first talked of the feasibility of the scheme, which very soon assumed the practical shape he had described.

THE HISTORY AND AIM OF THE SOCIETY.—This was the title of a paper read by Mr. W. Clark, of Carlisle. Having described the history of the Society, which owed its birth to the county of Northumberland, he dealt with its aim under the following heads: —1. As it affects landowners; 2. As it affects wood foresters; and 3. As it affects our own nation. Discussing the question as affected landowners he pointed out that the primary consideration for them must naturally be a financial one. This was commonly supposed to refer to the value of timber cut and sold from a given area. That, however, was a question which he would leave to others to discuss. He then proceeded to deal with the subject of finances under five divisions as follows:—1. The value of shelter plantations; 2. The value of plantations for appearance; 3. The value of plantations for game; 4. Hygiene and superfluous moisture; 5. The possibility of new markets for the produce. With regard to the latter head he said the Forestry Exhibition in Edinburgh made one thing very evident, that there was a large field for ingenuity and enterprise for native timber, and many of the articles manufactured were natty, useful, creditable, and desirable. Coming to the third head of the subject, he said forestry had a national value, and it followed that any encouragement in the practice was a national gain. Forestry in regard to hygiene, a subject on which he had dealt at length, was surely a national matter; but this aspect of the question was now much better understood and valued than previously, particularly in towns and open spaces, its necessity being acknowledged for the health of the inhabitants. It had now been fully proved that when the natural forests disappear to any great extent drought began to prevail, and the produce on the land was destroyed for want of moisture. This fact was now so apparent in some parts of America that a scheme of re-afforesting was now an acknowledged

duty on the part of the American Government. A writer had stated in a recent number of a scientific magazine that the basis of national wealth was not gold, but wood, and in support of this proposition the following facts were adduced:—The great tableland of Central Asia was in historic times as fertile as a garden, and produced food for the support of great and populous nations. The reckless destruction of the forests had converted the great plains and valleys of that part of the world into dreary deserts, which afforded sustenance to only a few scattered tribes of nomads. Immense herds of sheep and goats, computed at 15,000 in each herd, were the instruments which brought about this terrible transition. These immense herds cropped the seedling trees, so that natural production was arrested, and the mature trees in the course of time decayed. The climate became arid; the watercourses dried up; and the land, ceasing to bear its fruit in due season, finally became a howling desert. It was his opinion that it was a national duty to provide a supply of timber for the coming generation; and he hoped it would rest with a Government of England to clothe our mountains with timber either by the loan of money at a low interest to proprietors, or by taking the matter into their own hands. If the Cumberland fells were clothed with the Larch and the Pine tribe what a mighty change would come over the hills and dales, now left to support a few blackfaced sheep in summer, in respect to the advantages he had referred to, let alone the value of the timber when it arrived at the stage of maturity. M. Boppé, Inspector-General of Forests in France, recently paid a visit to this country to report on the Highland forests, and in the course of his report he stated that if a line were drawn from Greenock to Perth there would be found north of the boundary no less than 5,000,000 of acres, at present regarded as mere waste, which were capable of being converted into valuable timber forests. If that were done, and the forests worked on the German system, they would supply an annual growth of timber fifty or sixty years hence more than double that imported from Russia, Norway, Sweden, and America. One half of this area under trees would also be open for grazing purposes, and from the shelter and the superior quality of the grass found in the forests ample food would be afforded to twice as many head of cattle and sheep as the same quantity of moorland or exposed pasture would supply. Still further, the working and management of the forests and the development of hundreds of industrial enterprises connected with them, and their products would afford a steady means of employment and subsistence to a large proportion of the inhabitants of the Highlands who at present eked out a precarious living as crofters. We required a trained class of men for our Indian plantations, and if forestry was now fully and intelligently pursued in this country we could furnish any number of competent men. Hence it became a national question to be able to teach our own candidates. And this could only be done by raising forestry to a higher place than it had yet occupied in this country. In conclusion he advised the Society to increase their membership, and the interest of landowners and all others connected with land in the subject of forestry, in order that something might be done to promote that progress in the matter which they all desired.

Royal Caledonian Horticultural.—The annual meeting of this Society was held in one of the side rooms of the Music Hall on December 4, Mr. John Downie presiding. Mr. P. Neil Fraser, Treasurer, submitted an abstract of the accounts for the year ending November 30 last, from which it appeared that the income had amounted to £1551, and the expenditure to £1491, showing a surplus revenue of £60. The receipts included £469 from member's subscriptions, and £1008 from the drawings at the spring, summer, and autumn shows, while the expenditure in connection with the shows was £633, and in prize money £753. At November 30 the funds amounted to £1249, an increase of £43 as compared with last year. The report was considered very satisfactory, and on the motion of Mr. Dunn, seconded by Mr. Lamont, was unanimously adopted. Office-bearers were then proposed and elected as follows:—President, the Marquis of Lothian; Vice-Presidents, the Duke of Buccleuch and the Earl of Stair, in place of two retiring; Members of Council, John Capperton, of Gilsland, and George McKinnon, gardener, Melville Castle, in place of two Councillors retiring by rotation; Secretary, Mr. John Stewart; Treasurer, Mr. Neil Fraser; and Auditor, Mr. J. Turnbull Smith, C.A. The Chairman, in proposing that a winter Chrysanthemum show should be held by the Society, said that winter shows were now held in various places throughout the country, and had proved very successful. Mr. Dunn, Dalkeith, thought they could afford at least to try the experiment, and with an open winter like that of last year there was little fear but that it would be successful. They would, of course, include autumn fruit and plants in the show. He moved that the Council be empowered to carry out the necessary arrangements for holding a winter show next year. The motion was carried unanimously.

Obituary.

DANIEL JUDD.—We regret to announce the decease of this well known gardener, at the age of sixty-nine, after a long and painful illness, at Shefford, in Bedfordshire. The deceased was widely known and much respected in the horticultural world, not only on account of his kind and genial nature, but also as a thoroughly practical and skilful gardener, especially in the cultivation of fruit. He was born at Edmonton, in Middlesex, and after spending his time to the age of fourteen in a grammar school, he was employed by his father, also a gardener, in doing light work about the garden. After six months' employment at home he went to Brockett Hall, in Hertfordshire, and after two or three years to the Royal Kitchen Garden at Kew. After various minor situations at Gunnersbury and Chiswich, he entered the service of W. H. Whitbread, Esq., Southill Park, Bedfordshire, as head gardener, and remained with him seven years. He afterwards (in 1848) was engaged by Earl Spencer, at Althorpe, where he stayed ten years, where he achieved in 1853 or 1854 the feat of placing new and old Black Hamburgh Grapes on his employer's table on January 1. Mr. Judd served Lord Hill, at Hawkestone Park, where he remained till his lordships's death in 1875, and was afterwards gardener to the Earl of Warwick at Warwick Castle, and latterly at Mr. Seely's, Brook House, Isle of Wight. He was held in high esteem by the late Mr. James Veitch, and also by other members of the firm, and he was selected to judge the Veitch Memorial Prize at Carlisle, besides acting in a similar capacity at Edinburgh and other leading exhibitions. A fuller account, with a portrait of Daniel Judd will be found in our issue for June 19, 1875.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON
FOR THE WEEK ENDING WEDNESDAY, DECEMBER 10, 1884.

Month and Day.	Barometer: Mean Reading Reduced to 32° Fahr.	Barometer: Departure from Average of 18 years.	Temperature of the Air: Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Hygrometrical Deductions from Glaisher's Tables 6th Edition: Dew Point.	Degree of Humidity. Sat. = 100.	Wind: Average Direction.	Rainfall.
Dec	In.	In.	°	°	°	°	°	°	°		In.
4	29.23	—0.52	51.0	40.0	11.0	44.5	+ 2.7	39.9	84	S.W.; W.S.W.	0.18
5	29.58	—0.18	46.5	37.0	9.5	42.9	+ 1.2	37.1	81	W.N.W.	0.17
6	29.54	—0.22	54.5	44.0	10.5	50.7	+ 9.1	46.8	88	S.W.	0.03
7	29.68	—0.09	53.5	46.2	7.3	50.7	+ 9.2	45.8	84	S.W.	0.25
8	29.70	—0.08	54.0	43.0	11.0	47.4	+ 6.0	42.0	83	S.S.W.	0.00
9	29.80	+0.03	44.0	35.0	9.0	38.6	— 2.6	36.0	92	S.W.; W.N.W.	0.15
10	29.74	—0.05	49.0	34.0	15.0	43.6	+ 2.6	40.5	89	WNW.; W.S.W.	0.11
Mean	29.61	—0.16	50.4	39.9	10.5	45.5	+ 4.0	41.2	86	S.W.	0.89

Dec. 4.—Rain in early morning, hail at 11.30 A.M.; dull afternoon, fine clear night.
5.—Fine day, cloudy at times; dark night, rain in evening.
6.—Drizzling rain in morning, very dull day; dull till 10 P.M., fine and clear afterwards.
7.—Fine and bright till noon, dull afternoon; frequent rain at night.
8.—Dull day, partly cloudy at night.
9.—Rain from early morning till 3 P.M.; fine cold night.
10.—Fine bright morning, rough wind in afternoon and night, rain falling in evening.

LONDON: *Atmospheric Pressure.*—During the week ending December 6, the reading of the barometer at the level of the sea increased from 29.97 inches at the beginning of the week to 30.06 inches by 9 A.M. on the 30th, decreased to 29.87 inches by 3 P.M. on the 1st, increased to 29.93 inches by midnight on the same day, decreased to 29 63 inches by 3 P.M., and increased to 29.69 inches by midnight on the 2d, decreased to 29.42 inches by 3 P.M., increased to 29 49 inches by midnight on the 3d, decreased to 29 27 inches by 9 A.M. on the 4th, increased to 29.76 inches by 9 A.M., increased to 29.81 inches by midnight on the 5th, decreased to 29 69 inches by 3 P.M. on the 6th, and was 29.76 inches by the end of the week.

The mean reading for the week at the level of the sea was 29 70 inches, being 0.36 inch lower than last week, and 0.22 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 54°.5, on the 3d and 6th; the highest on November 30 and December 1 was 37°. The mean of the seven high day temperatures was 46°.9.

The lowest temperature was 29° on November 30; on the 6th the highest was 44°. The mean of the seven low night temperatures was 36°.7.

The greatest range of temperature in one day was 16°.5, on the 2d; the smallest was 5°, on December 1. The mean of the seven daily ranges was 10°.2.

The mean temperatures were—on November 30, 32°.5; on December 1, 34°.8; on the 2d, 41°; on the 3d, 49°.5; on the 4th, 44°.5; on the 5th, 42°.9; on the 6th, 50°.7; of these the first three were below their average by 9°.2, 6°.9, and 0°.8 respectively, the rest were above by 7°.7, 2°.7, 1°.2, and 9°.1.

The mean temperature for the week was 42°.3, being 5°.7 higher than last week, and 0°.5 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 69°, on the 4th. The mean of the seven readings was 58°.4.

The lowest reading of a minimum thermometer with its bulb placed on grass was 21°, on November 30. The mean of the seven readings was 27°.4.

Rain.—Rain fell on every day in the week to the amount of 0.99 inch.

ENGLAND: *Temperature.*—During the week ending December 6, the highest temperatures were 56° at Truro, 55°.8 at Cambridge, 54°.5 at Blackheath; the highest at Preston was 49°.5, at Bolton 50°.6, at Sunderland 51°. The general mean was 52°.8.

The lowest temperatures were 22° at Wolverhampton and Hull, 23°.3 at Bolton; the lowest at Truro was 33°, at Liverpool 30°.3, at Plymouth 29°.8. The general mean was 26°.

The greatest ranges were 31°.4 at Cambridge, 30° at Hull, 29°.8 at Bristol; the smallest ranges were 22°.5 at Preston, 23° at Truro, and 23°.1 at Liverpool. The general mean was 26°.8.

The mean of the seven high day temperatures was highest at Truro, 53°, at Plymouth 50°.4, at Bristol 49°.7; and was lowest at Preston, 42°.2, at Bradford 43°, at Wolverhampton 43°.2. The general mean was 45°.8.

The mean of the seven low night temperatures was highest at Truro, 41°.7, at Plymouth 39°, at Liverpool 37°.8; and was lowest at Wolverhampton, 30°.9, at Bolton 31°.6, at Nottingham and Hull 32°.7. The general mean was 35°.

The mean daily range was greatest at Bristol, 13°.1, at Wolverhampton 12°.3, at Bolton 11°.9; and was least at Preston, 7°, at Liverpool 8°.5, at Bradford 9°.2. The general mean was 10°.8.

The mean temperature was highest at Truro, 47°.2, at Plymouth 44°.6, at Bristol 43°; and was lowest at Wolverhampton, 36°.9, at Bolton 37°.4, at Hull and Bradford 38°.3. The general mean was 40°.3.

Rain.—The largest falls were 2.71 inches at Bolton, 2.29 inches at Truro, 2.17 inches at Brighton; the smallest falls were 0.56 inch at Sunderland, 0.60 inch at Hull, 0.87 inch at Nottingham. The general mean was 0.31 inch.

SCOTLAND: *Temperature.*—During the week ending December 6, the highest temperature was 51°, at Glasgow, at Dundee the highest was 45°.5. The general mean was 48°.7.

The lowest temperature in the week was 15°.8, at Aberdeen; at Greenock the lowest temperature was 26°. The general mean was 22°.5.

The mean temperature was highest at Leith, 38°.3; and lowest at Dundee, 34°.7. The general mean was 36°.8.

Rain.—The largest fall was 2.82 inches, at Greenock, and the smallest fall was 0.73 inch, at Edinburgh. The general mean fall was 1.21 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

BOOKS: *J. Y.* & *G. P.* Chapman & Hall. *Plant Life* (Messrs. Bradbury, Agnew, & Co., Bouverie Street, Whitefriars).—*G. K.* *G. De Candolle* and *Nyman*. We do not know the price: publishers should advertise the prices. Williams & Norgate will procure *Nyman* for you. *Bentham and Hooker*, 3 vols. (Williams & Norgate).

GARDENERS' ROYAL BENEVOLENT INSTITUTION: "*A Becoming Member, if Suitable*," who "has not yet seen the particulars of the said Institution," should apply to the Secretary, E. R. Cutler, Esq., Tavistock Row, Covent Garden.

HOT-WATER PIPES AND TAR: *W. J. Mitchison* writes:—"I think Mr. Bishop will be able to remove the tar from his hot-water pipes by first coating them with muriatic acid, or with vitriol diluted in water, and then afterwards washing them with water. It would be the best plan to wash them with a brush, as great care must be taken that none of the mixture touches the hands."

INSECT: *G. Potter*. A species of Weevil.

NAMES OF FRUIT: *J. Brown*. *Apple:* Cox's Orange Pippin.—*W. W. and S.* 1, Beurré d'Anjou; 2, probably Josephine de Malines; 3, not recognised.—*W. Pilgrim.* 1, Winter Nelis; 2, Beurré Clairgeau; 3, Bergamotte d'Esperen; 4, Beurré Diel; 5, Easter Beurré; 6, Beurré d'Anjou.—*Wm. M.* 1, Jersey Gratioli; 2, probably Winter Crassane; 3, not recognised; probably a stewing Pear.—*W. R. Fryer*. The sort probably was not recognised.

NAMES OF PLANTS: *R. H. B.* Euonymus europæus.—*H. A. H.* Phalaris arundinacea.—*T. C.* Aspidium lobatum.—*Henry Bissett*. Pholidota imbricata.

TURF LAYING: *Alpha.* This should be laid on ground that has been perfectly levelled, and which ought to have a loose crumby surface of about half an inch in depth. If the turves are of an even thickness they can then be laid with regularity, ramming them when a few square rods have been put down. Owing to the large size of turf-beaters they are not so well suited to the purpose as wooden rammers, consisting of a round block of hard wood, 6 × 6 inches, having a level bottom surface. No ramming may be done whilst the turves are frozen, nor yet immediately after heavy rain, nor during very dry weather, unless watering be resorted to.

*** All communications intended for publication should be addressed to the "*Editor*," and not to the Publisher, or to any member of the staff personally. The Editor would also be obliged by such communications being *written on one side only of the paper* and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

JOHN LAMONT & SON, Edinburgh—Roses.
H. STRAUSS, Ehrenfeld, Cologne—Choice Orchid and Palm Seeds.
THOMAS DAVIES & Co., Wavertree, Liverpool—Evergreens, Stove and Greenhouse Plants, Fruit Trees, &c.
IRELAND & THOMSON, Edinburgh — Forest Trees, Conifers. Hollies, Rhododendrons, &c.
ROBERT OWEN, Maidenhead—Chrysanthemums.

COMMUNICATIONS RECEIVED: — R. E. T.—The Secretary, Birkbeck Institute.—H. W. W.—M. de Candolle, Geneva.—W. M.—W. H. C.—E. S. D.—E. Harvey.—W. A. Herdman.—C. B. Plowright.—T. Coomber.—A. W.—R. D.—T. Fletcher.—J. F.—A. B.—F. A. B—C. M. O—A. Bishop.—R. G.—J. O'B.—Sutton & Sons.—Harrison Weir.—J. T. B.—M. B—W. J. B.—A. Mathews.—G. Trinder.—W. P. H. next week.—H. W., Tonbridge Wells.—Ed. A., Paris.—R. F. L. many thanks.—J R., with thanks.—H. & Co.

Markets.

COVENT GARDEN, December 11.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

TRADE dull, and prices remaining the same. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	4 0	Lemons, per case	12 0-	18 0
— Nova Scotia and Canadian, barrel	10 0-	24 0	Pine-apples, Eng. lb.	2 0-	..
Cobs, per 100 lb.	60 0-	82 6	— St. Michael, each	4 0-	10 0
Grapes, per lb.	1 6-	4 0	Pears, French, doz.	1 6-	3 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	4 0-	6 0	Lettuces, Cab., doz.	1 6-	..
Beans, French, lb.	1 0-	..	— French, each	0 6-	..
Beet, per doz.	1 0-	..	Mint, green, bunch	1 6-	..
Cabbages, per doz.	1 6-	2 0	Mushrooms, p. baskt.	1 0-	2 0
Carrots, per bun.	0 6-	..	Onions, per bushel	4 0-	..
Cauliflowers, English, dozen	1 0-	2 6	— Spring, per bun.	0 6-	..
Celeriac, per root	0 4-	..	Parsley, per bunch	0 4-	..
Celery, per bundle	1 6-	2 6	Radishes, per doz.	1 0-	..
Cucumbers, each	0 6-	1 0	Rhubarb, bundle	0 8-	..
Endive, English, per dozen	1 0-	..	Salsify, per bund.	1 0-	..
Garlic, per lb.	0 6-	..	Seakale, per punnet	2 0-	2 6
Herbs, per bunch	0 2-	0 4	Small salading, per punnet	0 4-	..
Horse Radish, bun.	3 0-	4 0	Spinach, per bushel	2 0-	..
			Tomatos, per lb.	1 0-	1 6
			Turnips, bun.	0 5-	..

POTATOS.—Magnum Bonums, 40s. to 70s; Regents, 70s. to 90s. Champions, 45s to 60s. per ton. Markets have a downward tendency.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0-	4 0	Mignonette, 12 bun.	6 0-	9 0
Arum Lilies, 12 blms.	6 0-	9 0	Narcissus, Paper-white, 12 sprays	2 6-	3 0
Azalea, 12 sprays	1 0-	1 6	Pelargoniums, per 12 sprays	1 0-	2 0
Bouvardias, per bun.	0 9-	1 0	— scarlet, 12 sprays	0 6-	0 9
Camellias, per doz.	2 0-	6 0	Poinsettia, 12 blooms	3 0-	9 0
Carnations, 12 blms.	1 0-	2 0	Primula, double, bun.	1 0-	1 6
Chrysanth., 12 bun.	4 0-	12 0	— sinensis, 12 bun.	4 0-	6 0
— large, 12 blooms	1 0-	2 0	Roses (indoor), doz.	2 0-	6 0
Cyclamen, 12 blooms	0 3-	0 6	— French, per doz.	0 9-	1 6
Epiphyllum, 12 blms.	0 0-	0 9	St kesia, 12 blooms	1 0-	..
Eucharis, per doz.	4 0-	6 0	Tropæolum, 12 bun.	1 0-	2 0
Euphorbia jacquiniflora, 12 sprays	1 0-	2 0	Tuberoses, per doz.	1 0-	2 0
Gardenias, 12 blms.	9 0-	18 0	Tulips, 12 blooms	1 0-	1 6
Heliotropes, 12 sp.	0 6-	1 0	Violets, 12 bun.	1 0-	1 6
Hyacinths, Roman, 12 sprays	1 0-	1 6	— French, bunch	1 6-	2 0
Lapageria, white, 12 blooms	2 0-	3 0	— Parme, French, per bunch	5 0-	7 0
— red, 12 blooms	1 0-	2 0	Wal flower, 12 bun.	4 0-	6 0
Lily-of-Valley, spray	0 6-	1 0	White jasmine, per bunch	0 6-	1 0
Marguerites, 12 bun.	3 0-	6 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	24 0	Ferns, in variety, per dozen	4 0-	18 0
Arbor-vitæ (golden), per dozen	6 0-	18 0	Ficus elastica, each	1 6-	7 0
— (common), dozen	6 0-	12 0	Foliage Plants, various, each	2 0-	10 0
Arum Lilies, dozen	9 0-	15 0	Hyacinths, Roman, each	1 0-	2 0
Begonias, per doz.	4 0-	12 0	Marguerite Daisy, per dozen	8 0-	15 0
Bouvardia, dozen	9 0-	18 0	Myrtles, per doz.	6 0-	12 0
Chrysanth., dozen	6 0-	12 0	Palms in variety, each	2 6-	21 0
Cyclamens, per doz.	9 0-	24 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
Cyperus, per dozen	4 0-	12 0	Poinsettia, per doz.	9 0-	15 0
Dracæna terminalis. per dozen	30 0-	60 0	Primula sinensis, per dozen	4 0-	6 0
— viridis, per doz.	12 0-	24 0	Solanums, dozen	9 0-	12 0
Epiphyllum, doz.	18 0-	24 0	Tulips, dozen pots	8 0-	10 0
Erica, various, doz.	9 0-	18 0			
Euonymus, various, per dozen	6 0-	18 0			
Evergreens, in var., per dozen	6 0-	24 0			

SEEDS.

LONDON: *Dec.* 10.—The seed markets have this week been well attended, owing to the presence in London of a large number of agriculturists up for the Cattle Show. The business passing has, however, been exceedingly small in extent. With regard to Clover seeds generally there is no quotable variation, the actual demand being as nearly *nil* as possible. For Canary and Hemp seed the tendency is downwards. Feeding Linseed is also cheaper. There is no change in either blue Peas or Haricot Beans. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

At Mark Lane on Monday the trade was dull. English Wheat was quoted the same as on the Monday previous, but not selling so readily. For New Zealand and Indian Wheats prices compared a little above this day week, but were barely as good as on Wednesday last, and business generally was more restricted. Country flour was fully as dear, but the trade very slow. In Barley there was rather more doing, and prices ruled firm. Beans and Peas were without quotable change. Oats maintained late value, but sold rather slowly. Maize was very scarce and dearer.—On Wednesday business in Wheat was almost at a standstill, so that rates were nominally unaltered. There was no quotable change in flour, but the market was very dull. Barley was firm in all positions. For arrival the market was strong at 19*s.* for Azoff on passage. Maize with scarcity in supply was again rather dearer. Beans and Peas were without alteration. Oats were held for steady value, but the market was slack. Average prices of corn for the week ending Dec. 6:—Wheat, 30*s.* 10*d.*; Barley, 31*s.* 2*d.*; Oats, 19*s.* 2*d.* For the corresponding period last year:—Wheat, 40*s.*; Barley, 32*s.* 3*d.*; Oats, 19*s.* 7*d.*

CATTLE.

At Copenhagen Fields on Monday an increased number of cattle, many very prime, came upon an extremely dull market, and the trade done was most disappointing. At 2*d.* per 8 lb. decline the best qualities were difficult to sell, and in many cases a larger reduction occurred on really good beasts, whilst middling and plain cattle were unsaleable. The sheep supplies were moderate, but quotations had to be lowered 2*d.* per 8 lb. to effect a slow clearance. Calves were nearly all of the rougher kinds. Quotations:—Beasts, 4*s.* to 5*s.*, and 5*s.* 4*d.* to 5*s.* 8*d.*; calves, 3*s.* 4*d.*; sheep, 4*s.* 8*d.* to 5*s.* 2*d.*, and 5*s.* 6*d.* to 6*s* 4*d.*; pigs, 3*s.* 8*d.* to 4*s.* 2*d.*—Thursday's trade was quiet. Beasts sold slowly, but ruled fairly steady. In sheep scarcely anything was done, and calves and pigs were dull.

HAY.

Tuesday's Whitechapel Market report states that supplies were large, and trade dull, in consequence of the wet weather. Quotations:—Clover, prime, 95*s.* to 107*s.*; inferior, 46*s.* to 73*s.*; prime second cut, 90*s.* to 107*s.*; hay, prime, 80*s.* to 90*s.*; inferior, 30*s.* to 65*s.*; and straw, 22*s.* to 34*s.* per load.—On Thursday there was a short supply, and the trade was dull at Tuesday's rates.—Cumberland Market quotations:—Clover, best, 95*s.* to 105*s.*; inferior, 50*s.* to 70*s.*; meadow hay, best, 76*s.* to 84*s.*; inferior, 50*s.* to 70*s.*; and straw, 24*s.* to 32*s.* per load. There was a fair supply with dull trade, owing to weather.

POTATOS.

The Borough and Spitalfields Markets reports state that supplies are fully adequate to the demand. Quotations:—Kent Regents, 76*s.* to 80*s.*; Scotch ditto, 86*s.* to 100*s.*; Essex Shaws, 65*s.*; Victorias, 70*s.* to 80*s.*; Magnum Bonums, 50*s.* to 70*s.*; Champions, 50*s.* to 60*s.*; and French, 40*s.* to 50*s.* per ton.—The imports into London last week consisted of 1715 sacks from Stettin.

COALS.

The following are the prices current at market during the week:—Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 18*s.*; Hetton Lyons, 16*s.*; Hulam, 16*s.* 3*d.*; East Hartlepool, 17*s.* 3*d.*; South Hartlepool, 16*s.* 3*d.*; Binchester, 16*s.*; Tees, 18*s.*

Government Stock.—Consols closed on Monday at 99¼ to 99⅜ for delivery, and 99⅜ to 99½ for the account. Tuesday's figures were 99⅜ to 99½ for delivery, and 99⅜ to 99 11/16 for the account. The final quotations of Wednesday were 99¼ to 99⅜ for delivery, and 99 11/16 to 99⅝ for the account. Thursday's closing figures were 99⅜ to 99⅝ for delivery, and 99⅝ to 99⅞ for the account These prices are all ex div.

GARDEN REQUISITES as supplied to the Royal Gardens.—Best Quality. Cocoa-Nut Fibre Refuse, 1*s.* per sack; 30 for 25*s.*—bags included. Trucks (containing 2 Tons) 25*s.*, free on Rail. Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 for 35*s.* Black Fibrous Peat, 3*s.* 6*d.* per sack; 10 for 30*s.* Coarse Bedford Sand, 1*s.* 3*d.* per bushel: 12*s.* per ½ ton; 22*s.* per ton. Loam, Leaf-Mould, and Peat-Mould, 1*s.* per bushel. Guano, Crushed Bones, &c. Finest Tobacco Cloth, 8*d.* per lb.; 28 lb. for 18*s.* Specialité Tobacco Paper, 10*d.* per lb.; 28 lb. for 21*s.*; 70*s.* per cwt. Second quality, 7*d.* per lb.; 28 lb for 16*s.* Archangel and Petersburgh Mats. Price LIST sent free. Special quotations to the Trade for cash.
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HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, S.E. (near London Bridge).

COCOA-NUT FIBRE REFUSE, newly made, same as supplied to the Royal Horticultural Society of England. Sacks, 1*s.* each; 15 sacks, 13*s.*; 20 sacks, 17*s.*; 30 sacks, 25*s.*; 40 sacks, 30*s.*, sacks included; truckload of 2 tons, loose, 25*s.* All goods free on to rail. Cash with all orders will oblige.—J. STEVENS AND CO., "Greyhound" Yard, and 153, High Street, Battersea, S.W.—Established 1872.

GISHURST COMPOUND, used by leading Gardeners since 1850 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

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PURE WOOD CHARCOAL
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VINE BORDERS, FRUIT TREES, STRAWBERRIES, ROSES, FLOWER BEDS, POTTING PURPOSES,
AND GENERAL HORTICULTURAL PURPOSES.
HIRST, BROOKE, AND HIRST, Manufacturers, Leeds, Yorkshire.

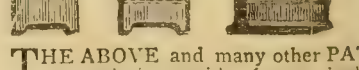
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ARCHANGEL MATS and PETERSBURG MATS, for covering, packing, &c., and RAFFIA FIBRE. For Wholesale Prices apply to
MARENDAZ AND FISHER, 9, James Street, Covent Garden, W.C.

RUSSIA MATS.
JAMES T. ANDERSON supplies every description of RUSSIA MATS for Covering, Tying, and Packing, at the very lowest possible prices. TOBACCO PAPER, RAFFIA, BROWN PEAT, SILVER SAND, COCOA FIBRE REFUSE (Best only), and other HORTICULTURAL REQUISITES. Full Descriptive Priced CATALOGUE post-free on application.
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ASTON CLINTON STRAW MATS.—The warmest covering for Pits and Frames. Sizes:—6 ft. 6 in. by 3 ft. 9 in. at 2*s.*; 6 ft. 6 in. by 4 ft. 6 in at 2*s.* 2*d.*; 6 ft. 6 in. by 7 ft., 3*s.* 2*d.* Apply to
Miss MOLIQUE, Aston Clinton, Tring.

Rosher's Garden Edging Tiles.

THE ABOVE and many other PATTERNS are made in materials of great durability. The plainer sorts are specially suited for KITCHEN GARDENS, as they harbour no Slugs or Insects, take up little room, and, once put down, incur no further labour or expense, as do "grown" Edgings, consequently being much cheaper.


GARDEN VASES, FOUNTAINS, &c., in Artificial Stone, very durable and of superior finish, and in great variety of design.
F. ROSHER AND CO., Manufacturers, Upper Ground Street, Blackfriars, S.E.; King's Road, Chelsea, S.W.; Kingsland Road, E.
Agents for LOOKER'S PATENT "ACME" FRAMES, PLANT COVERS, and PROPAGATING BOXES; also for FOXLEY'S PATENT BEADED GARDEN WALL BRICKS.
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KENT PEATS or LOAM supplied at lowest rates in any quantities.
F. ROSHER AND CO.—Addresses see above.
N.B.—Orders promptly executed by Rail or to Wharves.
A liberal Discount to the Trade.

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WILL CONTAIN A BEAUTIFULLY

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FROM AN ORIGINAL DESIGN.

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READY TO BE HUNG UP, AND ENCLOSED IN CASE,

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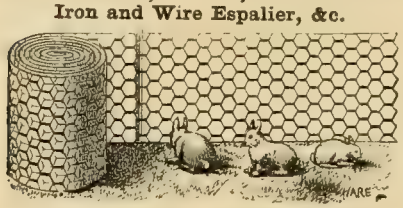
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ALL GALVANISED.

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As illustrated above, price 4*s.* per dozen.

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2 2½ 3 3½ inches.
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Terminal Holdfasts.

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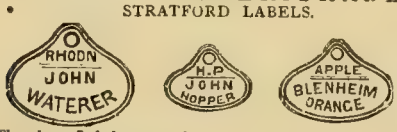
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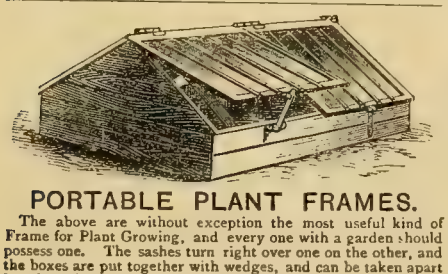
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The *Gardener's Magazine* says:—"We must give these the palm before all other plant labels, as the very first in merit."
Samples and Price Lists free.
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6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide,	,,	,,	,,	4	15	0
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The glass is nailed and puttied in.

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CASH PRICES, CARRIAGE PAID. Packing Cases.

No. 2, 8 ft. long, 6 ft. wide,	£3	7	6	3*s.* 6*d.*	Allowed for in full if returned at once.
No. 3, 12 ft. long, 6 ft. wide,	4	17	6	4*s.* 0*d.*	
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13 inches deep in front, and 24 inches at the back; lights 2 inches thick, with iron bar and handle to each light. All painted four coats of best oil colour, the lights glazed with 21-oz. English glass.
Catalogues and Lists post-free.

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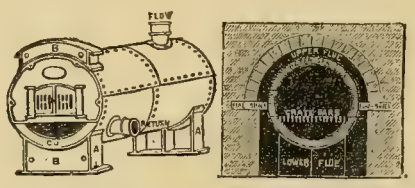
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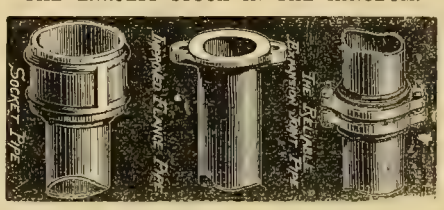
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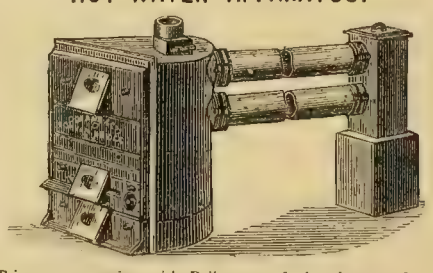
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Price, as engraving, with Boiler, open feed syphon, 12 ft. of 4 inch hot-water pipe, and patent joints complete, £4 4*s.*
Delivered free to any Station. Discount for cash.
This is the simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing. The Boiler stands in the Greenhouse, the front only being outside and flush with the outer wall, so that the whole of the heat from the boiler itself is utilised.
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"Loughborough" Boilers to heat up to 650 ft. of 4-in. pipe, with hot-water pipe, joints, &c., always in stock.

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The measurement of Greenhouse being given, every apparatus is delivered with pipes cut and fitted ready for fixing.

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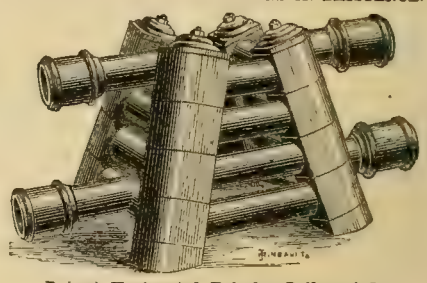
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Pure and ample Heat 24 hours or longer for about 1*d.*, without attention. For Greenhouses, Bedrooms, or almost any purpose. Pamphlet and authenticated Testimonials sent. In use daily at Patentee's—THOMAS ROBERTS,

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THE MOST POWERFUL BOILERS IN EXISTENCE.



Patent Horizontal Tubular Boilers A 1.

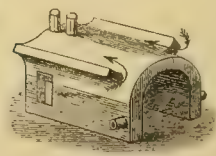
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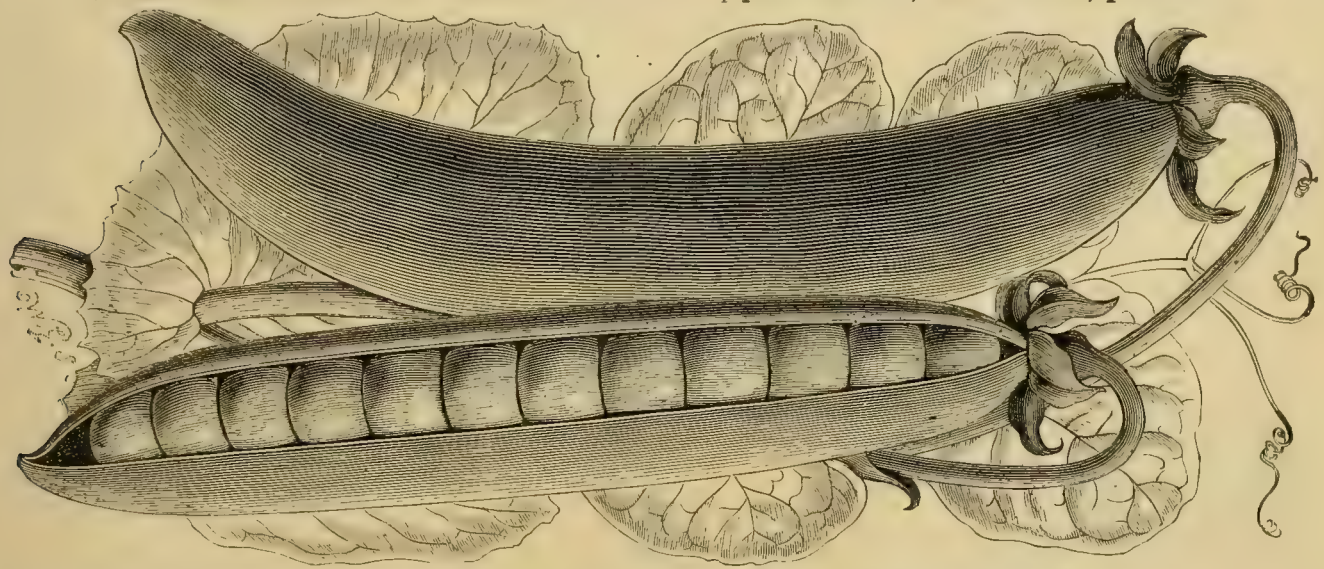
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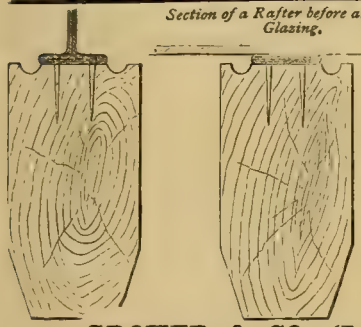
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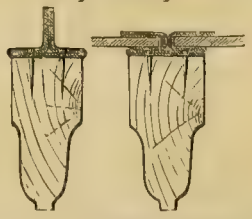
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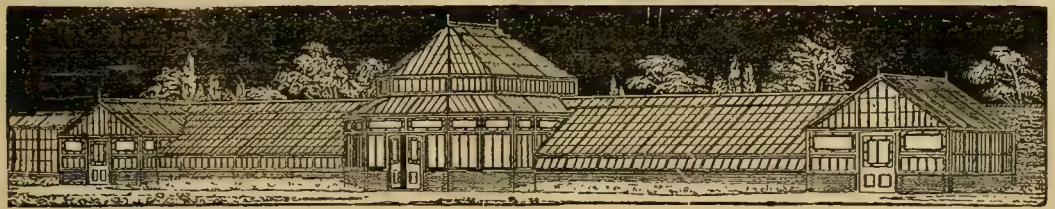
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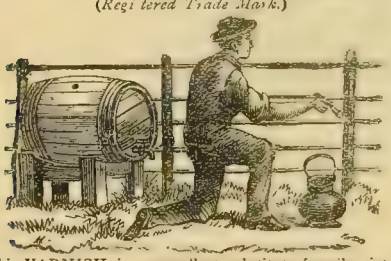
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SCOTCH GARDENERS.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh, has at present on his list a number of SCOTCH GARDENERS, waiting re-engagements, at wages ranging from £50 to £100 per annum, and he will be pleased to supply full particulars to any Nobleman or Gentleman requiring a trustworthy and competent Gardener.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St John's Nurseries, Worcester.

GARDENER (HEAD); age 29.—Mr. NICHOLAS, Gardener to Earl Fortescue, Castle Hill, South Molton, can with confidence recommend his principal Foreman, James Hill, to any Lady, Nobleman, or Gentleman requiring a good all-round Gardener.—Address as above.

GARDENER (HEAD).—£10 Bonus given to any one being the means of procuring the advertiser a situation as above. Character and abilities undoubted. Total abstainer.—N. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

GARDENER (HEAD); age 28.—Mr. BODDEY, Burwarton Hall, Bridgenorth, will be pleased to recommend his Foreman, J. Leese, to any Lady or Gentleman requiring the services of a thoroughly competent and trustworthy man.—Full particulars on application.

GARDENER (HEAD).—Mr. HARDWICK, of Hollanden, Tonbridge, wishes to highly recommend his Head Gardener (G. Goldsmith), who has lived with him eight years, and six years with previous proprietor. Leaving on account of family moving to Town.—For particulars apply to P. C. HARDWICK, Esq., address as above.

GARDENER (HEAD); age 31, married.—WILLIAM BESWICK, for nearly five years Head Gardener at Fynone Boncath R.S.O., Pembrokeshire, desires a re-engagement, as above. Highest testimonials from Mrs. Colby (present), and also from previous employers on application. Address, as above.

GARDENER (HEAD).—Age 36, married, no family; highly recommended as a thoroughly competent and energetic man in all branches of Gardening. Over twenty years' experience in large gardens, including seven years at Alnwick Castle.—LEACH, The Lodge, Fineshade, Stamford.

GARDENER (HEAD), to any Nobleman or Gentleman requiring a thoroughly practical man in the Cultivation of Vines, Pines, Peaches, Melons, Early and Late Forcing, Orchids, Stove and Greenhouse Plants, and Kitchen and Flower Gardening.—Age 38; twenty-two years' experience.—J. KEELAN, 133, Peel Street, Farnworth, near Bolton, Lancashire.

GARDENER (HEAD); age 40, married.—Mr. H. THORNBER, Head Gardener, the Winter Gardens, Blackpool, is now open to engage with any Lady or Gentleman requiring the services of a thorough practical Gardener in all branches. The highest testimonials from Noblemen and Gentlemen.—H. THORNBER, The Winter Gardens, Blackpool.

GARDENER (HEAD).—W. J. IRELAND, Gardener, Headfort House, would be happy to recommend to any Nobleman or Gentleman a thoroughly trustworthy and energetic man as above. Fourteen years' practical experience in some of the leading English Gardens, and now Foreman at Headfort House. Good character from past and present situations, and has also the honour of referring to the Marquis of Headfort, Headfort House, Kells, Co. Meath.

GARDENER (HEAD).—JAMES HEWETT PHILLIPS, Foreman with Mr. Hart, Gardener to the Earl of Ross, Birr Castle, Parsonstown, Ireland, is at liberty to engage with any Nobleman or Gentleman requiring his services. Experienced in the general routine of Gardening in large establishments. Can produce the highest testimonials, which will bear the strictest investigation.—Full particulars can be obtained on application, as above.

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GARDENER (HEAD WORKING).—Thoroughly acquainted with all branches. Highest references as to ability, &c.—JAMES RICHARDSON, Great Stanmore, Middlesex.

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GARDENER (HEAD WORKING), where two or three are kept.—Age 36; married. Can obtain first-class testimonials from previous and present employers, with whom he has lived eighteen years.—E. FORNACHON, Blackbrook, Pontrilas R.S.O., Herefordshire.

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GARDENER (good SECOND, or otherwise).—Married, no family; thoroughly understands his profession. Good Plantsman and Propagator. Can be thoroughly recommended.—E. WATERS, Pain's Hill, Cobham, Surrey.

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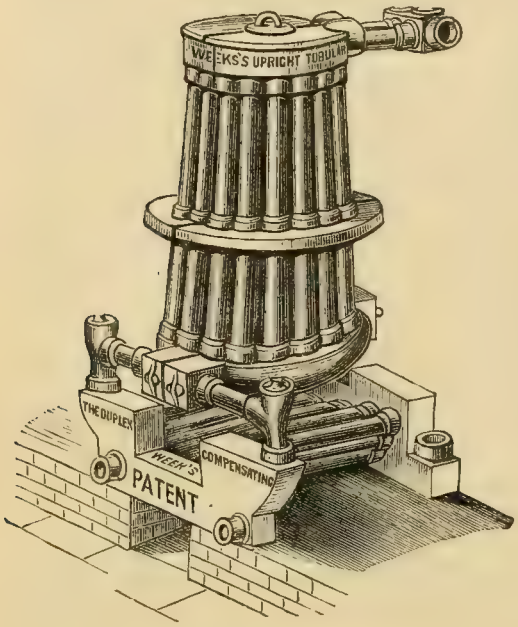
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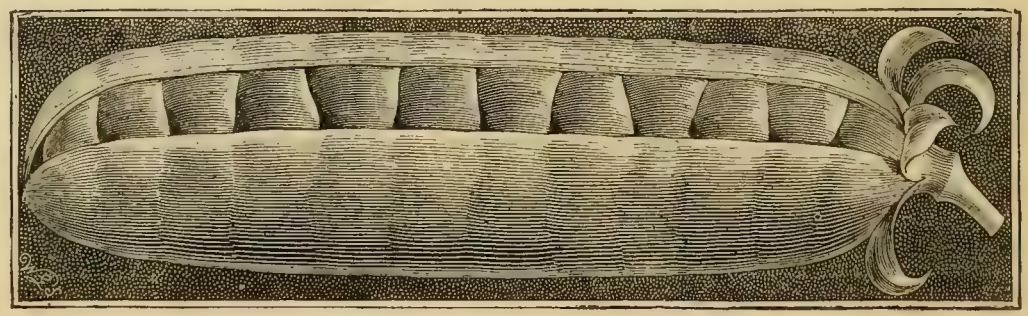
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THE EARLIEST WRINKLED MARROW.

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 13, 1884.
Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 573.—Vol. XXII. { New Series. } SATURDAY, DECEMBER 20, 1884. { Registered at the General Post-office as a Newspaper. } Price 5d. { Post-free, 5½d.

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IMPORTANT NOTICE.

TO ADVERTISERS.

In consequence of the Christmas Holidays, the GARDENERS' CHRONICLE for next Saturday, December 27, will be published on Wednesday the 24th inst. at 2 p.m. Advertisements for that Number must reach the Office not later than TUESDAY morning, the 23d inst.

NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

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THE GARDENERS' CHRONICLE,
Volume XXI., JANUARY to JUNE, 1884.
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ROYAL HORTICULTURAL SOCIETY,
South Kensington, S.W.
DATES of the MEETINGS of the SCIENTIFIC, FRUIT, and FLORAL COMMITTEES in 1885 :—

SCIENTIFIC COMMITTEE.

Tuesday, January 13	Tuesday, May 12 and 26
Tuesday, February 10	Tuesday, June 9 and 23
Tuesday, March 10 and 24	Tuesday, July 14 and 28
Tuesday, April 14 and 28	Tuesday, November 10
Tuesday, December 8	

FRUIT AND FLORAL COMMITTEES.

Tuesday, January 13	Tuesday, June 23
Tuesday, February 10	Tuesday, July 14
Tuesday, March 10	Tuesday, July 28
Tuesday, March 24	Tuesday, August 11
Tuesday, April 14	Tuesday, August 25
Tuesday, April 28	Tuesday, September 8
Tuesday, May 12	Tuesday, October 13
Tuesday, May 26	Tuesday, November 10
Tuesday, June 9	Tuesday, December 8

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RASPBERRY CANES.—An immense quantity of the choicest Carters' Prolific and Fastolf for disposal.
The Advertiser being the most extensive cultivator of Raspberries in England, special care will be taken to select Canes most suitable for a vigorous growth and an early fruiting. Lowest cash terms on application to
R. BATH, Crayford, Kent.

For Sale
RASPBERRY CANES, Red and Black CURRANT TREES, and Victoria RHUBARB SETS. Apply, R. BATH, Wansunt Farm, Crayford

SAGE PLANTS, 1s. 6d. per dozen. Order of R. BATH, Crayford, Kent.

SALES BY AUCTION.

Monday Next.

PLANTS in FLOWER, for CHRISTMAS DECORATION. SPECIAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, December 22, at half-past 11 o'Clock precisely, Without Reserve, about 200 lots of well-grown and splendidly furnished PLANTS in FLOWER, comprising large plants of Erica hyemalis and other Heaths, Gardenias, Cyclamen, Tree Carnations, Maidenhair Ferns, an assortment of Palms, and other Plants specially adapted for Christmas Decoration.

On view morning of Sale, and Catalogues had.

Monday Next

10,000 LILIUM AURATUM.—DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, December 22, at half-past 12 o'Clock precisely, 10,000 unusually fine Bulbs of LILIUM AURATUM, just received from Japan in splendid condition, and about 150 lots of HYACINTHS, TULIPS, CROCUSES, and other Dutch Bulbs.

On view morning of Sale and Catalogues.

Tuesday Next.—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, December 23, at half-past 12 o'Clock precisely, about 200 lots of ORCHIDS in FLOWER, from various collections, amongst which may be mentioned the rare Zygopetalum rostratum, Odontoglossum aspersum, fine varieties of Odontoglossum Alexandræ, Cattleya Wallisii, &c., together with about 300 lots of Imported ORCHIDS from Mexico.

On view morning of Sale, and Catalogues had.

Monday Next.—(Sale No. 6802.)

HARDY BULBS and ROOTS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on MONDAY NEXT, December 22, at half-past 12 o'Clock precisely, a COLLECTION of HARDY ROOTS, comprising Montbretia Pottsii, Ornithogalum gracilis, Tigridias of sorts, Pancratiums, choice named Gladioli, Iris Robinsoniana, Milla biflora, Lilies in great variety, Spiræa japonica and S. palmata, Dielytra spectabilis, &c. Also first-class HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next—(Sale No. 6803.)

IMMENSE IMPORTATIONS FROM JAPAN.

15,000 LILIUM AURATUM.
2,500 LILIUM KRAMERI.
2,500 LILIUM LONGIFLORUM.
1,500 LILIUM THUNBERGIANUM.
1,000 LILIUM SPECIOSUM ROSEUM.
1,000 LILIUM SPECIOSUM ALBUM.

Also Fifty Cases, each containing a COLLECTION of LILIES, as follows:—Six Lilium speciosum roseum, six ditto album, twelve L. auratum, six L. species, six L. tigrinum, twelve ditto (double); twenty-four L. Thunbergianum, twelve L. longiflorum, and four L. Leichtlini.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY, December 23, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Tuesday Next.—(Sale No. 6803.)

5000 fine TUBEROSES from GENOA.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, December 23.

On view morning of Sale, and Catalogues had.

Wednesday Next—(Sale No 6804.)

ROSES, HARDY PLANTS and BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 24, at half-past 12 o'Clock precisely, an assortment of first-class Standard, Dwarf, Climbing, and Pot ROSES, in variety; choice named CARNATIONS, PICOTEES, PINKS, PHLOXES, DELPHINIUMS, and other BORDER PLANTS; also several hundred lots of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, LILIES, GLADIOLI, and other DUTCH BULBS, LILY of the VALLEY, SPIRÆAS, &c.

On view morning of Sale, and Catalogues had.

WANTED, a Glass Market NURSERY, with Dwelling-house, within 40 miles of London. Suitable for Grape, Cucumber, and Tomato Growing.
H., The Vineries, Nightingale Road, Wood Green, N.

To Nurserymen, Florists, Gardeners and Others.
FLORIST'S BUSINESS.

FOR SALE, by Private Treaty, as a going concern, all that well-known and remunerative FREEHOLD BUSINESS PREMISES, called Guildford Street Nurseries, within two minutes' walk of the Barton Railway Station, Hereford, the property of Urial Hain, Florist, who is relinquishing business on account of declining years. The Property comprises a modern and substantially brick built Residence, called Blenheim House, with several Perches of Freehold Garden Ground, a number of Span-roof and Lean-to Glass Houses, with Hot-water and other Heating Apparatus, Hot and Cold Pits, and Potting Sheds; together with the Stock-in-trade, consisting of a well-grown and healthy lot of Bedding, miscellaneous assortment of useful Greenhouse and Hardy Out-door Plants, in popular demand; small collection of useful Nursery Stock, Horticultural Requisites, Tools, and absolute Goodwill. A splendid opportunity for an enterprising young man or gentleman's gardener with small capital desirous of retiring from service. One-half or so of purchase-money can remain on mortgage if required. For further particulars, apply to
GEO. H. BARLOW, Estate and Property Agent, Hereford.

TO BE SOLD, a FREEHOLD FARM, comprising House, Barn, Stables, and other Outbuildings and 8 Closes, containing about 20 acres of good Land, suitable for a Fancy Farm, Hunting Stables, Nursery Grounds, or Building Sites for good Villas. Prettily situated on the south side of Rugby, and about a mile from Rugby School. A bargain for a practical Market Gardener. Apply to the owners,
Messrs. ABEL AND SON, Alexandra House, Harrogate.

A Rare Opportunity for Nurserymen.

TO BE SOLD, by Private Treaty, owing to the death of the owner, ELM GROVE NURSERIES, Newry, Ireland. These well known Nurseries are at present well stocked, and for nearly fifty years the proprietors (Messrs. M. Grant & Co.) carried on a splendid business.

For particulars apply to THOS. J. MARRON, Solicitor, Newry, Co. Down.

To Florists, Nurserymen, &c.

TO LET or SELL, LAND in any quantity, well adapted for the above, and within a few minutes of Hampton Station; also a 6-roomed COTTAGE to LET, with Land.
J. EMBLETON, Suffolk House, New Hampton; Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

TO BE LET, at Isleworth and Heston, MARKET GARDEN and FRUIT PLANTATION, with good Residences and Buildings in first-class order and condition: from 4 to 20 acres.
Apply to E. P. NEWMAN, Market Gardener's Agent, Uxbridge, Middlesex.

To Cut Flower and Fruit Growers, and Florists.

Surrey, 37 miles from London, and within easy distance of Two Important Towns.

TO BE LET on LEASE, a compact and well established NURSERY, comprising 5 Acres of Land, seven well built Greenhouses, detached Cottage and Sheds. Lease 19½ years, rent only £30. The houses are fully stocked with good saleable plants, and to effect a speedy sale the low price of £200 will be accepted for the Stock and Lease.
Apply to PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

TO LET, in the South of England, Seven large GREENHOUSES, built expressly for Tomato, Cucumbers, and Mushroom Growing. Stock will be sold a great Bargain. For particulars address
H. E., Messrs. Barr & Son, King Street, Covent Garden, W.C.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

Hyacinths in Pots.

POTS made expressly for HYACINTHS can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Rhubarb and Seakale Forcing

STRONG well-made POTS for the above can be supplied by
J. MATTHEWS, The Royal Pottery, Weston-super-Mare.
Price List free.

Continental Seeds.

O. KNOPFF AND CO., Erfurt (Established 1832), offer their well known FLOWER SEEDS to the Trade. For CATALOGUES, &c., apply to
BECK AND POLLITZER, 211, Upper Thames Street, E.C.

Plants in Flower.—To the Trade.

HUGH LOW AND CO. offer ERICA HYEMALIS, in 48's, 60s. and 75s. per 100. BOUVARDIAS, White and double Pink, 12s. per dozen. CYCLAMEN PERSICUM, varied in colour, 50s., 75s., 100s. per 100
Clapton Nursery, London, E.

CLEMATIS INDIVISA LOBATA, showing flower, good plants, 18s. per dozen. Also a large and fine stock of Dr. Orton and Henry Jacoby GERANIUMS, price per 100 on application.
W. AND J. BROWN, Stamford.

LOVELY LILIES and IRIS.—WM. GORDON has still the finest collection of these. Buy of the Importer. The three lovely Lilies, Lilium album Kraetzeri, Lilium Melpomene, Lilium Brownii, for 5s. 6d., six for 9s., post-free. Over thirty varieties of Japanese Iris, all hybrids, in all hues and beautifully marked, perfectly hardy; the admiration last season of all who saw them. Six varieties for 9s., twelve for 15s., the thirty varieties for 30s. Lilium Humboldtii, each 1s., 1s. 6d., 2s. 6d. Lilium auratum—these surprise all my customers—specially imported bulbs, 6d., 9d., 1s., and 1s. 6d. each. Special terms to the Trade.—WM. GORDON, Nurseries, Twickenham, Middlesex. See previous Advertisements.

SEAKALE and ASPARAGUS. Crowns for Forcing. Apply to
WILLIAM BAGLEY, Millshot Farm, Fulham, S.W.

LILIUM AURATUM.—Special Offer.—Good sound dry BULBS, about 4 inches in circumference, 4s. per dozen, 28s. per 100. Cheapest for quality ever offered. Samples twelve stamps.
Messrs. MORLE AND CO., 1 and 2, and 162, Fenchurch Street, E.C.

Roses.

H. LANE AND SON have a fine stock of extra strong Standards to offer, at 15s. per dozen, or purchaser's selection at 18s. per dozen; Half-Standards at 12s. per dozen; Dwarfs, 5s. and 10s. per dozen. Descriptive CATALOGUE free.
The Nurseries, Berkhamstead, Herts.

NEW CHRYSANTHEMUMS.—Orders are now being booked for the New Varieties of 1884 at 10s. per doz: Cuttings, 1883 Varieties, 4s. per doz; best Old Varieties, 1s. 6d. per doz, my selection. Post-free for P.O.
R. OWEN, Floral Nurseries, Maidenhead.

Autumn Planting

THE LAWSON SEED and NURSERY COMPANY (Limited), Edinburgh, have, as usual, an extensive Stock of healthy, well grown seedling and transplanted FOREST and ORNAMENTAL TREES and SHRUBS, FRUIT TREES, ROSES, &c., special offers of which will be made on application.

PAUL AND SON, The "Old" Nurseries, Cheshunt, hold very fine stocks of the undermentioned:—
STANDARD TEA ROSES, best kinds.
STANDARD HYBRID PERPETUAL ROSES, vigorous kinds.
DWARF TEA ROSES on Brier only
STRONG CLIMBING ROSES, very large plants
STRONG CLIMBING ROSES, in pots, 8 to 9 feet high.
STRONG DWARF ROSES for hedges.
STRONG DWARF ROSES for beds.
POT ROSES, of all sorts and sizes
STRONG STANDARD APPLES, 5 to 6 feet stems.
STRONG STANDARD PEARS, extra fine heads.
STRONG STANDARD PLUMS, including Victories.
EXTRA FINE HORIZONTAL TRAINED APPLES and PEARS.
EXTRA FINE FAN TRAINED PLUMS and CHERRIES.
STRAWBERRIES, in large and small pots.
GOOSEBERRIES, fine, on 1 foot stems.
CURRANTS, particularly fine Red and White.
CONIFERS, EVERGREENS, and AVENUE PLANTS.
HOLLIES, Green and Variegated, 10 acres at High Beach.
CATALOGUES post-free.

FRUIT TREES for SALE.—Favourite Cluster DAMSON, Victoria Bush and New Orleans PLUMS, 10,000 Lad and Bob GOOSEBERRIES, Black and Red CURRANTS, COB TREES, 20,000 true DAMSON SPAWN, 3 to 4 feet
A. SEAR, Mr. Skinner, East Farleigh, Kent.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

"GLOIRE DE NANCY" CARNATION, the best white Clove in cultivation, 60s. per 100, 8s. per dozen. MRS. SINKINS, the best white Clove Pink, 30s. per 100, 4s. per dozen. OLD CRIMSON CLOVE, 30s. per 100, 4s. per dozen. All strong plants, established in pots.
POUNCE'S Nursery, Hendon, near London, N.W.

To the Trade.

NEW EARLY RHUBARB—KERSHAW'S PARAGON.

WM. KERSHAW, NURSERYMAN, Brighouse, has pleasure in offering this fine variety, in strong Roots, 6s. per dozen, 40s per 100. The roots supplied by him last season gave unqualified satisfaction. Please oblige by addressing all Orders to
Ainsdale Nursery, Bingley.

ASH, common, 2 to 3 feet, clean, 17s. per 1000; 3 to 4 feet, 20s. per 1000. ELMS, 1½ to 2 feet, 14s. per 1000; 2 to 3 feet, 17s. per 1000; English, 3 feet, 25s. per 1000. CHESTNUT, Spanish, 2 to 3 feet, 22s. per 1000; 15 to 20 inches, 16s. per 1000. LARCH, 14 to 24 inches, 12s 6d per 1000; 2 to 2½ feet, 16s. per 1000; 3 to 4 feet, 18s. per 1000; 4 to 5 feet, 24s. per 1000. SPRUCE FIR, 1 to 1½ foot, 12s per 10 0; 1½ to 2 feet, 13s. per 1000; 2 to 2½ feet, bushy, 16s. per 1000. SCOTCH FIR, 1-yr, 2 yr. transplanted, 12s. per 1000; 2 to 2½ and 3 feet, 15s. per 1000. SILVER FIR, 4 yr. transplanted, 22s. per 1000. HAZEL, 2 to 3 feet, 20s. per 1000. OAKS, 18 to 20 inches, 16s. per 1000; 2 feet, 20s per 1000. PRIVET, Evergreen, 2 feet, 15s. per 1000; 1 to 1½ foot, 12s. per 1000; OVALIFOLIUM, 2 to 2½ feet, 30s. per 1000; Oval, 1 foot, 20s. per 1000. SYCAMORE, 1½ to 2 feet, 14s. per 1000. THORNS, 1½ to 2 feet, 12s. 6d. per 1000; 2 to 2½ feet, 16s. per 1000; 3 to 3½ feet, 18s per 10.0.
CATALOGUES on application to
CARLIES MITCHELL, Nurseryman, Stranraer, N.B.

HARRISON AND SONS, Royal Nurseries, Leicester, have to offer:—
10,000 Strong GOOSEBERRIES, mostly Warringtons.
6,000 IVIES, mostly Irish.
7,000 POPLARS, 6 to 12 feet.
1,000 Standard Horse CHESTNUTS, fine
20,000 Bushy Evergreen PRIVET, 2 to 3 feet.
2,000 AMERICAN ARBOR-VITÆ.
2,000 Common LAURELS, 3 to 4 feet, extra.
1,000 Paul's Crimson THORNS, standards.
1,000 Pyramid APPLES, PEARS, and PLUMS.
1,000 Standard PEARS.
All well grown. Special quotations and samples free.

Roses and Fruit Trees.

IRELAND AND THOMSON beg to announce that their stock of the above is this year specially fine and now ready to send out. Descriptive CATALOGUE with prices on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

Extra Strong Fruiting Vines.

H. LANE AND SON have still some of the above to offer, equal in strength to those they have been so successful with for many years in taking the First Prizes at the leading Horticultural Shows.
The Nurseries, Berkhamstead, Herts.

RASPBERRY CANES.—A large number of the celebrated Carter's Prolific (see *Mark Lane Express*, August 1, 1881), to dispose of; also Naples Black CURRANTS, two and three years old, and Dutch Red.
Apply to
A. AND E. BATH, Colgates Farm, Sevenoaks, Kent.

To the Trade Only.

FERNS — FERNS — FERNS. Adiantum cuneatum, A. trapeziforme, A. gracillimum, Lomaria gibba, Lastrea aristata variegata, Pteris serrulata cristata Cowani, P. serrulata: nice plants in 60's, 20s. per 100.
Adiantum cuneatum, A. gracillimum, A. trapeziforme, in 4 and 4½ inch pots, 40s. to 50s. per 100, according to size; Adiantum Pacotti, in 60's, 30s. per 100; ditto, in 4 and 4½ inch pots, 50s. per 100.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

Forest Trees.

IRELAND AND THOMSON have an extensive and healthy stock of Seedling and Transplanted Forest Trees, including Ash, Alder, Birch, Elm, Austrian Pine, from 6 in. to 2½ ft.; Scotch Fir, Larch, Spruce, Black Spruce, Laricio, Beech, Thorns, Maple, Oak, Poplars, Thorn Quick, Chestnuts, Hazel, &c. Special offers on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to 10 feet high.
,, laurifolia, ditto.
,, Hodgins', 3, 4, 5 to 8 feet.
,, myrtifolia, ditto.
,, Scottica, 3 to 8 feet.
,, Yellow-berried, altaclarense and others.
,, Variegated, of sorts, 3, 4, 5, 6, 8 to 10 ft.
,, Waterer's splendid plants, 3, 4, 5, and 6 feet, 8 to 15 feet in circumference.
,, Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimens.
,, Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteen years' growth, hundreds.
,, new Golden Weeping, a large number of very beautiful plants.

} many thousands.

BOX, Green and Variegated, 3, 4, 5, 6 to 7 feet, many thousands.
YEWS, Common, 3, 4, 5, 6 to 10 feet, thousands.
,, Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.
,, Irish, 5 to 10 feet, hundreds. [thousands.
CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6 to 8 feet,
,, Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful specimens.
THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.
RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands.
JUNIPERS, Chinese, 7, 8, and 10 feet high.
,, Chinese Golden, 3 to 6 feet.
JUNIPERUS VIRGINIANA GLAUCA, 3 to 5 feet.
ABIES CANADENSIS, 4 to 7 feet, hundreds.
,, DOUGLASII, 3 to 5 feet, thousands.
,, ,, GLAUCA, 2 to 4 feet, hundreds.
,, ORIENTALIS, 4, 5, 6 to 10 feet, hundreds.
,, HOOKERIANA, 3 to 5 feet.
,, PARRYANA GLAUCA, 1½ to 2 feet, hundreds.
PICEA CONCOLOR, 2 to 4 feet, hundreds.
,, GRANDIS, 5 to 7 feet.
,, LASIOCARPA, 3 to 5 feet, hundreds.
,, MAGNIFICA, 2 to 3 feet, hundreds.
,, NOBILIS, 1½ to 3 feet, thousands.
,, NORDMANNIANA, 6, 7, to 10 feet.
,, PINSAPO, 6 to 10 feet, hundreds.
,, PUNGENS, 1½ to 2 feet, thousands.
PINUS CEMBRA, 6 to 8 feet
CEDRUS DEODARA, 6 to 9 feet, hundreds.
,, LIBANI (Cedar of Lebanon) 3 to 5 feet.
THUIA OCCIDENTALIS LUTEA, 3 to 6 feet, hundreds.
THUIOPSIS BOREALIS, 3 to 5 feet, hundreds.
RETINOSPORA OBTUSA AUREA, 3 to 6 feet, hundreds.
,, PISIFERA AUREA (true), 3 to 6 feet.
,, PLUMOSA AUREA, 3 to 5 feet.

Knap Hill Nursery, Woking Station, Surrey.

A SPECIALITY.

Rhododendrons and other American Plants, Grown in Sandy Loam.

A superb Collection of all the leading Varieties in Cultivation, also many thousands of RHODODENDRON PONTICUM and HYBRIDS for Plantations and Coverts.

A Sample Basket, containing Twelve Choice and Distinct Varieties, to name, for 30s.

These plants, being thus prepared, may be grown in any ordinary fibrous loam, without the expensive addition of peat soil or other composts.

Priced LIST on application to

JOHN CRANSTON,
KING'S ACRE, HEREFORD.

SPECIAL CULTURE OF

FRUIT TREES and ROSES.

A large and select stock is now offered for sale.

The Illustrated and Descriptive CATALOGUE of FRUITS post-free.

The Descriptive CATALOGUE of ROSES post-free.

THOMAS RIVERS & SON,
The Nurseries, Sawbridgeworth, Herts.

Forcing Asparagus.

R. AND G. NEAL beg to offer the above by the hundred or thousand (own growth, and transplanted last spring). Samples with Price on application. Also beg to call the attention of Nurserymen, Builders, and others to their exceptionally fine stock of FRUIT, FOREST, and ORNAMENTAL TREES and SHRUBS.

The Nurseries, Wandsworth Common, S.W.

CUT FLOWERS.—Buy of the Growers. The Advertisers are now offering Roman HYACINTHS, EUPHORBIAS, POINSETTIAS, for Christmas; LILY of the VALLEY and TULIPS in sorts. Write for price to TURNER BROS., Nurserymen and Florists, Green Hill Nursery, Allerton, Liverpool.

SPECIAL OFFER

OF

ORNAMENTAL TREES and SHRUBS,

ROSES and FRUIT TREES of all kinds,

FOREST TREES, &c.,

All well transplanted and strong, at reduced prices (free on application).

WALTER CHAS. SLOCOCK,
Goldworth "Old" Nursery,
WOKING, SURREY.

ONIONS,

A SPECIALITY AT

CORN HILL, BANBURY

Proved Varieties

OF STERLING EXCELLENCE.

DEVERILL'S NEW ONION,

THE ROUSHAM PARK HERO.

THE BEST ONION FOR EXHIBITION.

A magnificent new variety, the result of a cross between the White Globe and the famous Banbury Onion, and distinct from all other types of the White Spanish strains. It grows to an immense size, is of very robust constitution, handsome shape, and of a light straw colour, possessing great depth of bulb, very mild in flavour, and a capital keeper.

Awarded nearly 100 1st Prizes,

Including the 1st Prize at the Grand International Show at Dundee, Sept. 11, 12, and 13, 1884.

Per Packet, 1s., Post-free.

H. DEVERILL has supplied the true stock of the Rousham Park Hero Onion Seed, in Sealed Packets, to the following Seed Firms:—

Messrs. SUTTON AND SONS .. .. .. Reading.
,, JAS VEITCH AND SONS .. .. Chelsea.
,, WHEELER AND SON .. .. Gloucester.
,, CARTER AND CO. .. .. .. London.
,, F. AND A. DICKSON .. .. .. Chester.
,, HARRISON AND SON .. .. Leicester.
,, POPE AND SONS .. .. .. Birmingham.
,, JAS. BACKHOUSE AND SON .. York.
,, SANG AND SON .. .. .. Kirkcaldy.
Mr. J. DOWNIE .. .. Edinburgh.
,, C. COOPER .. .. Plymouth.
,, J. COCKER .. .. Aberdeen.
,, C. FIDLER .. .. Reading.
,, D. YOUNG .. .. Kirriemuir.
,, J. C. SHEPPARD .. .. Bedford.
,, W. W. JOHNSON .. .. Boston.
,, CHAS. TURNER .. .. Slough.

DEVERILL'S NEW ONION,

THE ANGLO WHITE SPANISH.

A cross between the Reading Onion and the Imported White Spanish variety, the result of fifteen years' careful selection by Mr. G. Neal, Head Gardener to P. Southby, Esq., from whom the stock has been purchased by H. Deverill.

New Seed of this magnificent Onion is now offered for the first time.

Per Packet, 2s. 6d., Post-free.

To be obtained *only* direct from Corn Hill, Banbury; or, from Messrs. JAS. VEITCH AND SON, Chelsea, S.W., to whom H. Deverill has supplied a quantity of Seed, in Sealed Packets.

FINLAY'S NEW ONION,

THE WROXTON.

A new and remarkably handsome egg shaped variety, the result of a cross between the Portugal Onion and the Magnum Bonum, by Mr. Finlay, late Gardener at Wroxton Abbey. It is strongly recommended for its very mild flavour and excellent keeping qualities, and is quite distinct from all other globe-shaped varieties. **Per Packet, 1s., Post-free.**

DEVERILL'S MAIN CROP ONION.

The Best Cropper. The Mildest Flavour. The Best Keeper.

The Best for Large or Small Gardens.

(See Deverill's Seed List.)

Per Ounce, 6d; per 3 Ounces, 1s 6d, Post-free; per 7 Ounces, 3s. 6d., Post-free.

IMPORTANT NOTICE.

Four Prizes, value £5, will be awarded at the Royal Horticultural Society's Show, South Kensington, in October, 1885, for Six Specimens of each of the above Onions. For further particulars send for SEED CATALOGUE, gratis and post-free, from

H. DEVERILL,

SEED STORES,

CORN HILL, BANBURY.

EXPIRATION OF LEASE.

Several Acres of Nursery, containing a valuable Stock, continue to be offered at a nominal price; the lease cannot be renewed.

	Ordinary Price.	Reduced to
RHODODENDRONS, Standard, 4000 to select from, of finest named kinds, perfect specimens, from 1½ to 5 feet through the head	10s/-	10/6 31/6 5/-
,, Bush, do., 5, 6, 7, and 8 feet high	42/-	21/- 15/- 10/6
,, Dwarf and Sweet-scented, 1 to 2½ feet high, consisting of R. fragrans, Wilsoni, Govenianum, &c.	2/6	.. 1/6 -/9
ANDROMEDA FLORIBUNDA; fine plants, well set with bloom, 1 to 3 feet high	10/6	7/0 5/- 3/-
AZALEAS, 1 to 3 feet high	2/6	.. 1/6 ..
A fine lot of P. NORDMANNIANA, T. LOBBII, WELLINGTONIA, CUPRESSUS, RETINOSPORAS, THUIOPSIS DOLABRATA, and many others in fine condition for removal	10/6	5/- 5/- 1/-
ORNAMENTAL TREES—Fine specimens of Limes, Laburnums in vars., Horse Chestnut, Scarlet Chestnut, Sorbus, Thorns of sorts, Maples, Fraxinus aucubæfolia, Scarlet Oak; also Weeping Birch, Elm, Ash, and Poplar, 6 to 15 feet high	10/6	3/6 5/- 1/6
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,, common, 1 to 2½ feet		
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ROSES, Dwarf, Moss, Teas, and Climbers		
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WELLINGTONIA GIGANTEA, 3 to 5 feet		
MAHONIA AQUIFOLIA, 12 to 18 inches		
COB NUT, Webb's, 3 to 6 feet		25s. per 100

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Extra large Fruiting APPLES, PEARS, and CHERRIES, to clear, 1s. each.

SPIRÆA PALMATA, fine forcing clumps. The largest stock in Europe, 15s and 10s 6d. per 100.

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CHICHESTER ELMS.—50 splendid, for Parks, 18 to 20 feet.

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Handsome specimens and fine roots.

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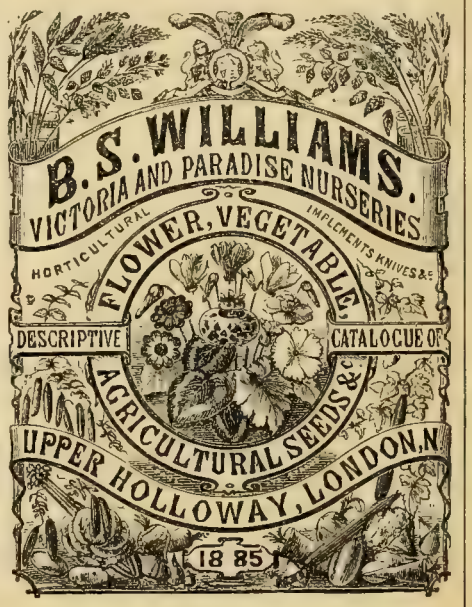
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The Earliest and Best in Cultivation.

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"I sowed your Gem of the Season Pea March 29, and gathered them June 13, and sowed Laxton's Earliest of All March 15, and did not gather till June 29. This new Pea has proved what its name implies for earliness, productiveness, and flavour."

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"The Pea, Gem of the Season, has proved itself a good one. I planted at the same time and by the side of Day's Early Sunrise. I gathered from Gem of the Season ten days earlier, the pods were also full, averaging from seven to nine good sized Peas in each."

Height 2 feet, and very prolific.

Price, 3s. 6d. per quart, 2s. per pint, 1s. 3d. per half-pint. Free by Parcels Post to any address.

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The Earliest Blue Wrinkled Marrow in Cultivation.

Height 1½ to 2 feet. Splendid cropper and quality. Should be sown now.

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First-class Novelty.

GLOXINIA GESNERIOIDES.

I have the gratification to offer my respected brethren in the Trade a novelty, which cannot be too well recommended, and that fulfils the long-expressed wishes of the Gardener.

The Gloxinia gesnerioides is the result of a cross between Gesnera Donckelaari and Gloxinia hybrida, and unites completely the best characteristics of these two species. The variety comes quite constant from seed. For Seeds and Tubers, please apply to

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ROSES (20 acres) BUSHES, 8s. per dozen, 60s. per 100; STANDARDS, 15s. per dozen, 105s. per 100. Packing and Carriage Free for Cash with Order.

FRUITS (74 acres) Best varieties of every form and kind of tree at low prices.

SHRUBS, &c. (91 acres) CONIFERS, AVENUE TREES, FLOWERING PLANTS (8s per dozen, 50s. per 100), FOREST TREES.

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Three Acres of Glass for Stove and Greenhouse Plants.

FAMOUS PLANTING AND FORCING ASPARAGUS AND SEAKALE.

VEGETABLE, FLOWER, and FARM SEEDS.

DESCRIPTIVE LISTS, containing an immense amount of useful information, free on application.

IMPORTANT NOTICE.

TO ADVERTISERS.

In consequence of the Christmas Holidays, the GARDENERS' CHRONICLE for next Saturday, December 27, will be published on Wednesday the 24th inst. at 2 p.m. Advertisements for that Number must reach the Office not later than TUESDAY morning, the 23d inst.

LIMES, Standard, transplanted last spring, 5 to 6 feet, 25s. per to 30s. 100; 7 to 9 feet, 35s. to 40s. per 100, cash. A sample dozen of each size, to be prepaid, 4s. and 6s. per dozen.
J. D. GOODWIN, Nurseryman and Florist, Market Place, Ashbourne.

MARTIN'S PRESIDENT CAULIFLOWER

A very early and distinct variety, which has been grown in the East Riding of Yorkshire for the past six years, where it is held in great reputation.

It comes into use in May, and continues until the late summer varieties are ready for cutting. The heads are medium sized, beautifully close and white, and well protected by the foliage, which enables it to stand the dry hot weather, such as we experienced last summer.

The plant is dwarf and very compact, and can be planted three or four inches closer than any other variety.

Retail Price, 1s 6d. per packet.

Mr. R. GILBERT, *Gardener to the* Most Noble the Marquis of Exeter, *writes as follows:*—

"Mr. Martin, Sir,—Your 'President' Cauliflower sent me for trial has turned out *the very best of all* I have grown this season: four heads in my first collection of vegetables at the Stamford Show were the admiration of all and very far above any in the show." Signed, R. GILBERT, *Burghley, September* 4, 1884.

And then, to publish its merits to the gardening world, Mr. GILBERT writes to *The Garden*, September 20, 1884:—

"MARTIN'S PRESILENT CAULIFLOWER."—"After giving this sort a good trial, I am now enabled to give my opinion respecting its merits. Amongst the varieties I am growing are Best of All, Snowball, Early Erfurt, Veitch's Giant, Walcheren, and the one in question. On September 2, I wanted a dish of Cauliflowers for a collection of vegetables. I have a large quarter of Cauliflowers planted, and I carefully searched for the best, this I found in Martin's President, which, to take into consideration the dry weather, was certainly an admirable production, being close and well protected by the foliage and perfectly white; in fact I look upon this Cauliflower in such seasons as we have just gone through, as a gardener's friend."—R. GILBERT, Burghley.

Many other Testimonials could be published, but the above will suffice to prove the superiority of my "President" Cauliflower over other varieties.

Trade Price on application to

WILLIAM E. MARTIN,
THE OLD ESTABLISHED SEED AND BULB WAREHOUSE,
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PETUNIA GRANDIFLORA.

DOUBLE, FRINGED, producing a good percentage of very full and finely fringed flowers, 3s. 6d. per packet.

SINGLE, STRIPED and MOTTLED, flowers very large, 2s. per packet.

SINGLE, FRINGED, now offered for the first time; seed saved from splendidly fringed flowers of the richest colours possible. We especially recommend this. 2s. 6d. per packet.

BALSAMS.

The finest strain offered. Saved only from plants producing very double flowers. Eight varieties, separate, 2s. 6d.

Trade Travellers who visit our Nursery pronounce the above strains to be the finest they meet with.

W. HENDER & SONS, Nursery, Plymouth.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

AUGMENTATION OF PENSION FUND,

The object of which is to increase the Amount of the Pensions. Only £420 are now required.

This amount (£420) must be collected before December 31, or the Institution will lose the £500 promised on these conditions by an anonymous donor. An earnest appeal is therefore made to all those interested in horticultural pursuits to send their donations **at once.**

GARDENERS, do not be afraid to send your shillings (or your guineas); every little will help, and the smallest donations will be thankfully received by

Dr. MASTERS, or W. RICHARDS,
41, WELLINGTON STREET, STRAND, W.C.

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Mr. SHERWOOD (Hurst & Son)	5	5	0
Mr. W. RICHARDS	1	1	0
Dr. MASTERS	2	2	0
A. G. E.	2	0	0
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Mr. T. WYNNE, Wroxham Hall Gardens	0	10	6
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Mr. J. BURDEN, Gardener, Barlboro' Hall, Chesterfield	0	10	6
Mr. W. HUNTER, Foreman, Barlboro' Hall, Chesterfield	0	5	0
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YOUNG MEN in The Gardens, Dover House, Roehampton, *per* Mr. FORBES	0	17	6
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Mr. JNO. GARDNER, Elsham Hall Gardens, Brigg	0	5	0
A. SMITH and A. TURNER, The Bothy, Hendre Gardens, Monmouth	0	5	0
J. J.	1	0	0
T. LESLIE, The Gardens, Ardarroch, Dumbartonshire	0	5	0
THE BOTHY MEN, The Gardens, Ardarroch, Dumbartonshire	0	5	0
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THE BOTHY MEN, The Gardens, Cannon Hall, Barnsley	0	7	6
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	£37	19	6

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Brought forward	£37	19	6
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C. TEA, The Gardens, Haverholme Priory, Sleaford	0	10	0
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Miss SIMS, Hubbard's Hall	0	5	0
J. and S. PROUT, Roselands	1	1	0
W. BARNARD, Esq., Sawbridgeworth	1	1	0
The Misses WRIGHT, Harlow	0	2	6
Dr. BRICKWELL, Sen., Sawbridgeworth	0	2	6
F. CLARKE, *10s.*, FIVE YOUNG MEN; *5s.*, Lowther Castle Gardens	0	15	0
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H. E. WATSON, Esq., Shirecliffe Hall	1	1	0
Mr. T. B. HAGUE, Upperthorpe	0	2	6
Mr. NEWSHAM, Heeley	0	2	0
Mr. BLACKBURN	0	2	0
J. D.	0	2	6
W. B. ESAM, Broom Hall	0	10	0
J. BARBER	0	5	0
THOS. BAKER	0	5	0
H. D.	0	2	6
F. LOMAS, Shirecliffe Hall Gardens	0	2	0
J. RANSFORD ,, ,,	0	2	0
T. METCALFE ,, ,,	0	2	0
T. M. ,, ,,	0	1	0
W. P.	0	1	0
T. W.	0	1	0
A FRIEND	0	2	6
W. A. PORTER, Luchie Gardens, North Berwick	1	1	0
J. W., Gorden Castle Gardens	1	1	0
Mr. A. LANE, Ford Place, Thetford	0	2	6
Mr. J. MULLINS, Paverham, Beaminster, Dorset	0	2	6
The Garden Committee of the Clifton Zoological Gardens, *per* JOSHUA SAUNDERS, Esq.	1	1	0
	£133	8	0

The above sum, **£133 8s.**, has been handed over to the Secretary of the Institution; all further sums subscribed will come into next year's list. No Donations can be published in this List excepting those sent direct to Dr. MASTERS or W. RICHARDS. The last List will be published next week, December 27, after which all Donations will be acknowledged in the usual way.

The following Donations have been received since December 16 :—

	£	s.	d.
Per Mr. W. OSBORN, Fota Island, Queenstown :—			
WM. BAYLOR HARTLAND, Esq., Cork	£0	10	0
Mr. W. OSBORN, Fota Island	0	10	0
Mr. W. SMITH, do.	0	2	6
Mr. J. O'CALLAGHAN, do.	0	1	0
Mr. E. BARRY, do.	0	1	0
Mr. C. BENNETT, Beckbrough	0	5	0
Per Mr. JOHN H. MASON, Princes Park, Liverpool :—			
FOREMAN and UNDER GARDENERS, do.	0	7	0
Mr. C. BURTON, Gardener, do.	0	5	0
Mr. J. H. MASON, do.	0	10	6
Per Mr. J. FOWLER, The Gardens, Harewood House, Leeds :—			
Mr. J. FOWLER, do.	0	10	0
Mr. HORNE, do.	0	5	0
Mr. CRUICKSHANK, do.	0	5	0
Mr. BLEARS, The Gardens, Harewood House	£0	3	0
Mr. THOMSON, do.	0	2	6
Mr. FORD, do.	0	2	6
Mr CAMM, do.	0	2	0
Mr. WOOD, do.	0	2	0
Mr. C. DUMPER, The Gardens, Worksop Manor, Notts	0	2	6
Mr. A. BEST, do.	0	2	6
Mr. C. TURNER, Mostyn Hall Gardens, Mostyn Quay, Flintshire	0	2	6
The UNDER GARDENERS, do.	0	5	0
Mr. J. SQUIBBS, Rooksnest, Godstone	0	10	0
Mr. J. BROWN, Bentworth, Alton	0	10	0
Professor CHARLES BABINGTON, Cambridge	10	10	0
Per R. B. LOWE, Ashridge Park Gardens, Great Berkhampstead :—			
Mr. R. B. LOWE, do.	0	10	
Mr. J HAINSWORTH, Frithsden Gardens	0	10	
BOTHY MEN, Ashridge Gardens	£0	6	6
BOTHY MEN, Frithsden Gardens	0	2	0
Mr. E. EAST, Little Gaddesden House Gardens	0	5	0
Hon. A. TALBOT, Little Gaddesden House	2	10	0
Miss HALSEY, Little Gaddesden	0	5	0
Mr. P. KINGSWOOD, Marian Lodge Gardens	0	1	6
Mrs. DENNISON, Marian Lodge	0	10	0
W. B. GREENFIELD, Esq., Beechwood	1	1	0
THE GARDENERS, Beechwood	0	5	0
Mr. H. FOLKES, Gaddesden Place Gardens	0	2	6
Mr. D. KEEN, Stocks Gardens, Aldbury	0	2	6
THREE BOTHY MEN at The Gardens, Shorcham Place, Sevenoaks	0	6	0
Per Mr. W. EDWARDS, Babraham Hall :—			
Mr. W. HOOPER, Gardener, Dullingham House, Newmarket	0	5	0
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THE
Gardeners' Chronicle.

SATURDAY, DECEMBER 20, 1884.

BITTON.

A RUN to Clifton and Bristol in the late autumn for purposes other than horticultural gave me a day to dispose of which I thought I could not turn to better account than by spending it with my old friend, Canon Ellacombe, and by visiting his garden. The garden at Bitton stands quite alone in one respect. I refer to the great length of time during which it has been watched over and loved. And perhaps nothing more tells upon a garden than this does. There is nothing there which has not been fully put to the test, and plants and trees and shrubs are established in a way which admits of no doubt at all. This gives a great value to every specimen that is met with there, and confers a great beauty on the place. The aged and honoured gardener, who still presides over a parish in Devonshire, came first of all to Bitton in the year 1817, and there he lived and worked till the year 1850. He laid down the lines on which his son has gone ever since, and the impress of his devotion to horticulture is still plainly visible. Funkias, Irises, Yuccas, Saxifrages, Roses, and many other things, are either the identical plants which he brought to Bitton many years ago, or their lineal descendants. A Cedar tree overshadows the lawn which Mr. Ellacombe, sen., handled and planted himself, and a splendid Salisburia and Fern-leaved Beech have kept company with it, and have grown up together in constant reminder of him.

The Vicarage garden at Bitton is very largely helped by the most pleasant accessories. The church stands just where it ought to stand to be seen to the best advantage, and it seems to bind the garden to it and itself to the garden. The tower of Bitton Church cannot fail to be admired. The foundation of the church was, I believe, laid in pre-Norman times, and it has been altered and added to over and over again, so that now it partakes of several different styles. The great length of the nave is at present one of its distinguishing features. Canon Ellacombe, as all your readers know, has largely entered into all his father's interests and work. I was once told by a leading nurseryman near London, that his best customers by far are country clergymen, and the impolite reason which he gave for it, "He supposed they had nothing else to do but to attend to their gardens." I don't think he would say that if he were to pay a visit to Bitton; but be this as it may the present vicar has all sorts of irons in the fire—while his garden does not hold the last place in his affections. What I should venture to say about his proceedings, first of all, is that he knows exactly what not to do, and there is nothing more important than this for a gardener to hit upon.

Not a few of the devotees of Flora would drive away at Bitton in all sorts of directions. Some would insist on growing Cape bulbs there to a large extent, and break their hearts over innumerable failures. Others would

go in specially for alpine plants, and then, because of the comparatively low level of the garden and its dampness in winter, they would be surprised with the smallness of the results they arrive at. Canon Ellacombe has not spent his strength on either one or the other of these two courses. Some few Cape bulbs he has tried and succeeded with, *e.g.*, Sparaxis pulcherima had its waving arch there last year in extraordinary beauty; some alpine plants have come to his hands, and they seem to be contented with their lot, *e.g.*, that gem of all gems, Omphalodes Luciliæ, has often done well with him, and it lives for a long time if it is left alone by the slugs: but as a rule the Vicarage garden at Bitton is famous for a splendid collection of shrubs and herbaceous plants more than anything else, and these have all that they can desire there given to them in excess. The soil is a deep alluvial loam, with a gravel foundation; it never dries up in the summer, and there is depth enough in it for roots to go deeply down and to take a vigorous hold. Here shrubs are to be met with which, save in the nursery grounds of Messrs. Veitch at Coombe Wood, I have never seen anywhere else, and they show that years have passed over them—they are happy and strong. A specimen of Abutilon vitifolium is, I expect, one of the best in the country; it grows against the side of the house, and, from Mr. Ellacombe's account of it, when it is covered all over with its innumerable pale blue blossoms, it must be very attractive indeed. Mahonia trifoliata is also one of his favourites. Parrottia persica was splendid when I saw it the other day—no garden that can hold it should ever be without this shrub—the yellow and vermilion of its leaves in the autumn are unlike anything else. Their charm is in dying. Exochorda grandiflora, on the other hand, is beautiful in the early spring; and Choisya ternata (which I esteem to be the best shrub of all we have) keeps pace with it, and Ceanothus of different sorts soon follow on. Magnolias flourish well in this garden. Forsythia suspensa covers the wall of the house with its starry blossoms of gold; and Heaths and Bamboos are to be met with in this garden of many varying kinds. But the list would be far too long for me to give. Rhododendrons, Azaleas and Kalmias are conspicuous by their absence because the soil does not suit them. Trees and shrubs have been brought together here with amazing assiduity and skill, and well do they repay the owner for his trouble.

On a kind of border line between shrubs and plants may be placed a very fine collection of the different species of Roses. Mr. G Paul is working at this, and he has great facilities for it at Broxbourne; but with that exception, Dr. Lindley's *Monograph of Roses* is, so far as I know, better illustrated at Bitton than anywhere else. Canon Ellacombe's list includes Rosa Brunoniana, Macartney, lucida, macrophylla, rubrifolia, anemonæflora, simplicifolia, multiflora, rugosa, nivea, York and Lancaster, and many others. He has not yet succeeded with Rosa berberifolia, but he has not given up the hope of being able to manage it.

Herbaceous plants have been for years at home in this garden in large numbers, and it is scarcely necessary to give the names of many which may be taken for granted. Cyclamen hederæfolium album is one of Mr. Ellacombe's favourites in the autumn months, and it would be difficult to name a much prettier little flower than it is at that time of the year. Oxalis lobata is a glittering little thing in August and September, but the pride of the whole place for several years last past has been Exogonium purga. This beautiful climber is grown over a trellis, which spreads out at the top fan-wise, and it is suited exactly. Senecio pulcher and Hedychium Gardnerianum were a short time ago in close proximity to it, and all three plants were in blossom together. Doubtless, however, if Bitton is to be seen at its best, it should be visited in the spring. Countless Narcissi, and some very rare ones, such as N. cernuus fl.-pl., load the air with their fragrance, and Fritillarias, Trilliums, Anemones, Scillas, and such-like may be counted by hundreds. A little later on in the year the American Cypripediums and Irises come to the front, and so the circle goes round. I saw two things the other day which may, perhaps, be worth just a passing notice—one of them amused me exceedingly, and I was amazed with the other. The amusement was this:—For many years last past Mr. Ellacombe has carefully noticed that birds do not build in his fine Wellingtonia. He has looked into it and taken notice of it times without number, and so at last he gave his experience to his friends and his comments upon it. The rule was considered absolute, and one and another of them at once expressed opinions about it, and accounted for the dislike which birds have to the tree, but no sooner was this done, and treasures of wisdom were poured over a matter which was regarded as proven, than a pair of thrushes, in search for a place where they could build their nest, pitched on this identical tree; twig was added to twig, the nest was successfully made, and not only so, but the eggs were laid in it, and their young were reared in it, in utter despite of everything that had been strongly said to the contrary. When I saw the empty nest which had been used to such good purpose, it seemed to me to furnish a kind of parable in Nature of which the moral would be this—we ought to be perfectly sure that our generalisations are not incomplete before a conclusion is drawn from them. Because Mr. Ellacombe had noticed for twenty-five years running that no birds ever built in his fine Wellingtonia neither he nor any one else was at liberty to declare that they would not build in it in the twenty-sixth year. It was some such thing as this which really took place. But if this was amusing something else was amazing. I have often heard of mimicry both in things animate and inanimate, and the moth which hides the colour on its wings and rolls itself up so as to look like a brown clod upon the ground seems to be gifted with reason, but never before I went to Bitton this year could I have believed that a Violet could so lose sight of its distinguishing characteristics as to emulate the appearance of a crested Fern: and yet this I saw, or thought that I saw, with my own eyes. All sense of modesty had disappeared from the Violet. It was growing amidst Ferns that were crested, and so it became crested as well. I told this to a friend who takes an interest in such things, and he said politely, at once, that he was quite unable to believe it. In his eyes a sort of miniature miracle was so impossible that no amount of testimony could make him receive it. I can only say I do believe it because I saw it, or, if it must be so, I thought that I saw it, with my own eyes.

I will not trouble you with much more about Bitton just now, though much more might be said about it. A pleasant custom has prevailed there, such as is seen at Osborne to a large extent, of planting memorial trees and shrubs when any event of importance has happened; and many of them which are now of some interest are dotted about all over the place. Suffice it to say that the work, which was began by the father, has been most worthily carried on by the son; and it is only to be hoped that in the future which is before us all the Vicarage garden at Bitton will never fall into the hands of some Philistine who will not know how to set a value on the treasures it contains, but that it will always receive in some measure the attention which it deserves, and continue to be from generation to generation a household word with those who have a love for what is beautiful, at least. *A Wanderer.*

New Garden Plants.

CYPRIPEDIUM SPICERIANUM.

I WAS most agreeably surprised on seeing two fine inflorescences of Cypripedium Spicerianum bearing two flowers each, the flowers belonging to the best and finest coloured strain. They were kindly forwarded by Mr. E. H. Adcock, Mount Adore Park, Lordship Lane, Dulwich. It is to be hoped that the plant may continue to produce double-flowered inflorescences, as Cypripedium barbatum does generally. There were three twin inflorescences on this plant, and no one-flowered ones, as I hear from Mr. Adcock's letter. *H. G. Rchb. f.*

CALANTHE REGNERIANA FAUSTA, *n. var.*

A very fine variety, boasting the darkest warmest purple colour, both for the column (except the back) and base of the lip, where it forms a three-lobed fine blotch. It is excellent, and all flowers of Calanthe Regneriana I obtained being constant in the very abbreviate mid-lacinia. I regard it now as a species near, but distinct from, Calanthe Turneri. I am indebted for this novel beauty to Mr. B. S. Williams, our Orchid patriarch. *H. G. Rchb. f.*

ODONTOGLOSSUM MIRANDUM BREVE, *n. var.*

A fresh variety with unusually short flowers and fine colour. The purple-brown continuous blotches on sepals and petals are very conspicuous. The disc of the anterior part of the lip has a certain flush of sepia on the just noted brown. I had this novelty from Dr. Wallace, New Bulb Company, Colchester. *H. G. Rchb. f.*

A TROPICAL WILD GARDEN.

(*Continued from p.* 755)

COKERITES AND CLUSIAS.—The great features of the place are the Cokerite Palms (Maximiliana Martiana, Karst.), and these are, as far as my experience goes, the most magnificently stately plants in the world. Other Palms and other plants are exquisitely beautiful—some in one, some in other of a thousand ways; but none, it seems to me, equals the Cokerite in its stately grandeur. Even in its young state the splendid mark of its nobleness is upon it, as is apparent in the group of three young examples, as yet unstemmed, but standing 30 feet high; and in their old age they are yet more magnificent. Then their splendid crowns of plumed leafage surmount stems which stand either bare and unclothed in their massive strength, or are densely clothed throughout their length with the persistent leaf-stalks. And when the leaf-stalks are thus persistent they afford roothold for innumerable Ferns, Figs, and other such growths, which add a further grace to the stately beauty of the Palms. In this same avenue the example in the centre affords quite the best illustration known to me of the regular arrangement of the leaves on the Palm stems.

One notable day I saw this same avenue in most unusual and undesirable grandeur. Fire had spread from some weed-heaps, had spread up the trash clothing the stems of the Cokerites, and was sending up its flames, when the roaring sound attracted me from a distance, rushing wildly along over the tops of my tallest Palms. A curious sort of comedy was woven into the tragedy of the incident. It happened that at the time, as a Justice of the Peace, I was taking depositions in a case of murder, but the avenue being in flames, prisoner, constables, witnesses, and all others were pressed into the service of arrest, as far as might be, of the threatened destruction. By cutting down, not without danger, all flaming as it was, one of the tallest Palms, a gap was made, beyond which the flames did not pass. The vitality of these Palms was well illustrated on this occasion, for though many of the Cokerites had all the trash clothing their stems burned to charcoal they soon recovered, and now no longer show any signs of the fire.

In another way the Cokerites, and, indeed, most of the other Palms, gain a new and beautiful aspect, by the growth over them of Clusias and Figs. A group of Maximiliana is made very beautiful in this way. The Clusia in this case (for there are

innumerable different species about the place) is one with a leaf about the size of that of a Laurel, but very dark in colour and much more round, and has a waxy-white flower, just touched with palest pink, of the size, and, to write very roughly, the appearance of a large single white Poet's Narcissus. It is very beautiful and useful as a cut flower, if only care be taken not to touch the petals, as you gather, either with fingers or anything else, for each spot touched turns almost at once to an ugly brown colour.

In one of the photographs sent the stem of a Cokerite is shown, surrounded, and now almost choked, by the encircling root-like stems of the Clusia. Many a stately Palm has affixed to it—high up, perhaps, and near its crown—a tiny sticky Clusia seed (birds are very fond of them and carry them far and wide), which presently becomes a small plant, then grows larger, and in time sends its treacherous root-stems creeping down along the trunk of the Palm, till they reach the earth and their take root. When once the as yet insignificant Clusia has struck its roots into the ground it increases rapidly, and swells its stem-roots, which encircle the Palm-trunk and hug this closely and closer until they choke and kill the Palm. In such a case, people in this colony say, it is a Scotchman choking a Creole, or an attorney choking his client; for Scotchmen and attornies here, as elsewhere, are reported to be good business men—in their own businesses. To turn to a more practical point in the history of this beautiful but murderous Clusia, I have never been able to ascertain whether or not the Clusia, having encircled and crushed to death its Palm, necessarily falls and dies with its former host and support; at least, I cannot recall a single instance in which I have seen a Clusia remain erect and living long after the death of its Palm.

Also in this photograph it is worth noticing, half seen on the extreme left, an enormous clump, 8 feet high, of an Orchid, an Oncidium, of which I have never been able to identify the species. I found it forming, as it were, an island of itself in the waters of a lake not far from here; and cut it (of course it was really established on the remains of a tree-stump), and brought it home, not without considerable trouble. In April in each year it bears some forty or fifty spikes, each 5 feet long, of innumerable buff-coloured flowers (somewhat in the habit of O. altissimum), with most delicate and delicious Hawthorn-like scent.

On the right in this picture too, is a turtle-pen in which, with a very small amount of trouble, a constant supply of turtles—or rather tortoises (Testudo tabulata), are kept as a most useful supply for the table.

Prickly Palms.—After the Maximilianas the most striking plants here are the Astrocaryums of various species, all impressively marked by their savage armature of prickles. In the second picture of this series the stem of one, an Acqueeroo (Astrocaryum tucuma, Martius) was well shown. In this the prickles, or rather spines, are often 3 or 4 inches long, flat, and terribly sharp. A story is told of a missionary's wife who, for pure economy, used these spines in place of pins for her dress; and it is a fact that in some of the West Indian islands these spines are used as the most apt needles for sowing matrasses. In one of the photographs is shown a beautiful group of another species, the Awarra (A. tucumoides, Drude), on the dense dark leaves of which the many wild doves about here love to make their nests. The fruits of all the species of this section of the genus Astrocaryum are much relished by Indians, who come from afar and ask to be allowed to pick up the fruits on this hill, famous for their production. In this I am more lucky than a not very distant neighbour of mine, who, having but one Astrocaryum growing on his hill, bought a basket of the fruit for his birds, and then found that the fruit was from his own tree, which had been cut down to bring the bearing within reach.

Lastly, not that it is a prickly Palm, but because there has been no other opportunity of introducing it, there is shown my finest group of Æta Palms (Mauritia flexuosa, Linn.) growing among the Bamboos at the river-side. It is, almost, an only native fan-leaved Palms, and is distinguishable as probably of as varied uses as any plant in existence. In proof of this last assertion, I venture to quote from elsewhere some words of my own:—

"The leaves of the Æta are occasionally, but not very frequently used as thatch; but this only, as far as I know, by the Macoosis. The young leaves, just before they expand from the early spike-like form in which they develope, are shaken till the leaflets fall apart; these leaflets are then cut off from the leaf-stalks, gathered into small bundles. and laid on, as thickly as possible, much as straw is used for thatching in England.

"A more important product is the fibre, which is also obtained from the young, spike-like leaves. Each leaflet is detached and treated simply. A sharp dextrous rub with the fingers at the top detaches the outer skin, which is then entirely torn away. This outer skin forms the fibre; the rest is waste. The fibre is boiled, dried in the sun, and twisted, on the naked thigh, into string. Leaves from the younger plants are preferred for this purpose, those from older examples giving, it is said, a a fibre wanting in durability. The string is used chiefly for making those most necessary of all Indian properties, hammocks, and is used for this purpose by the Arawaks and Warraus, who, however, make their hammocks in two different ways. Eleven or twelve full-sized leaves yield an amount of fibre sufficient for the largest hammock. The string, called *tibiseri* by the Arawaks, is occasionally, but seldom, used for other purposes also,

"I have elsewhere pointed out that the preparation of string or thread, by thigh-twisting, from the fibre of the Æta Palm seems to have been the characteristic of the Arawaks, Warraus, and possibly of other 'native tribes' of Guiana, just as the preparation of string or thread by spinning, from cotton fibre, seems to have been characteristic of all the Carib or 'stranger' tribes.*

"As the leaflets, so the leaf-stalk, which, when dried, is extremely light and buoyant, is turned to a variety of uses. It is used by the Warraus and the few Creole squatters toward the mouth of the Orinoco for the shafts of the harpoons with which they capture fish, and especially manatees. The leaf-stalks are also placed side by side to form walls and partitions in houses by the Creoles of the colony. The Macoosis occasionally raise three or four of the parallel fibres from the outer skin for a distance of about 3 feet, their ends being left attached; those fibres are kept away from the main leaf-stalk by a bridge, like that of a violin, inserted under them at each end; and the whole is then fastened upright on the tops of the house, where the wind playing through the strings produces a very musical sound, like that from an Æolian harp. Sandals are cut by the Macoosis and Arecoonas, who have to walk much on the often stoney savannahs of their districts, from the tough outer part of the sheathing part of the leaf-stalk; and the strings which fasten these sandals on the feet are procured, as above described, from the leaflets of the same leaf. The pith of the leaf-stalk, tough and durable, is cut up and used in various ways; cut into long lath-like strips, which are then fastened side by side like the laths of a 'Venetian blind,' it is made into very effective canoe sails. Smaller strips are made by the Creoles into neat and often elaborate birdcages. Stoppers for bottles are cut from the same substance.

"The pith of the trunk itself is used by the Warraus as Farine or Sago, and a tree having been cut down for this last purpose, a liquor much appreciated by the Indians, and really very palatable, is obtained from it in the following way:—A hollow is scooped in the uppermost part of the stem as it lies prone, which hollow, having been protected from the sun by a covering of leaves, is found after a few hours to be full of sap, which presently ferments and forms a pleasant drink. It is said that sugar is occasionally prepared by the Indians from this sap. Moreover, when the felled tree begins to decay, the very large grubs of a beetle (Calandra) are found abundantly in the pith, and are greedily eaten by the Indians, and even regarded as a great delicacy by the older colonists.

"The 'Cabbage' of the Æta is perhaps superior to that of any other Palm.

"The ripe fruit is largely used as food by the Indians, who, after scraping off the Fir-cone like scales, place the whole remaining part of the fruit in water, where, after a few hours, the fairly abundant yellow pulp round the seed becomes soft, in which state it is readily detached. Pressed into small cakes, this pulp has somewhat the flavour of rather strong cheese. A drink is also prepared by the Indians from the ripe fruit, but I am not sure how this is done."

G. Everard Im Thurn, British Guiana. [This article, devoted to the description of a wild garden in British Guiana, was accompanied by a splendid series of photographs, one of which was reproduced in our last issue. Ed.]

A Double Lapageria rosea.—A fine double-petalled bloom of good substance was sent us by Mr. King, gardener, Waddon House, Croydon. The flower is merely a sport from the ordinary form of L. rosea, and has twelve well developed petals, in lieu of the normal number, six. Now that the culture of this plant is generally better understood, the growth of abnormal blooms is frequently being drawn attention to from all parts of the country. Great clusters of bloom and a reduplication of parts of the flowers is often to be traced to great vigour in the plant.

* *Among the Indians of British Guiana*, London, 1883.

HERALDIC SPRIGS AND SPRAYS.

A few of the sprigs and sprays in heraldry may not, perhaps, be out of place in a paper devoted to gardening. The Rev. Hilderic Friend has just published a work in two volumes, entitled *Flowers and Flower-lore*, which devotes due space to the use of plants in heraldry. Among several old stories retold, and very well told, by Mr. Friend, is that of the badges and emblems which have been derived from the plant world. He mentions the Red and White Roses, the badges of the rival houses of Lancaster and York, but he omits the story of the origin of these fatal emblems. The chiefs of the rival factions and some of their adherents were in the Temple Gardens disputing when Richard Plantagenet, Mortimer's heir and head of the house of York, plucked a White Rose, saying,

"Let him that is a true-born gentleman,
And stands upon the honour of his birth,
If he supposes that I have pleaded truth,
From off this Brier pluck a White Rose with me."

The Earl of Suffolk, the chief Lancastrian present, followed this example; and the same dramatist—Shakespeare, in *Henry VI.*—makes him say:—

"Let him that is no coward and no flatterer,
But dare maintain the party of the truth,
Pluck a Red Rose from off this Thorn with me."

Their followers imitate the chiefs; and the Earl of Warwick, foreseeing the Wars of the Roses, predicts that the feud thus commenced,

"Shall send between the Red Rose and the White
A thousand souls to death and deadly night."

Another story of the Rose relates to an old variety known as the Crimson Perpetual, which made its appearance in the reign of Louis XVIII., and was accordingly named the King's Rose (Rose du Roi); but at the advent of Buonaparte the proprietor of the flower renamed it, from policy, the Emperor's Rose (Rose de l'Empereur); outliving the Empire, he again named it Rose du Roi. The Rose, of course, is one of the badges of England, the Lily of France, the Thistle and Shamrock of Scotland and Ireland, the Leek is the odorous badge of Wales. On a first of March, at a Drawing-room held by the Queen, the Princess of Wales wore a bunch of Shamrock leaves, and as the first of March is St. David's day, Her Royal Highness also wore the Leek. The origin of this highly flavoured badge is as ancient as the year 640, when King Cadwallader led the Britons to victory — St. David having contributed to their success by his prayers and by the Leeks which the Britons wore by his advice in their caps, enabling them to distinguish each other in action, whereas their enemies slew each other for want of such a distinguishing mark. The history of Scottish plant-badges would probably unfold a wonderful record of public and private feuds, since we may be sure that many chieftains of clans assumed their badges much after the fashion of Geoffrey, Duke of Anjou, father of Henry II., who plucked a spray of the Broom-plant, Planta genista, on the heath where he encamped before the battle. and wore the spray of yellow blossoms in his helmet, bequeathing to his descendants a badge and a family name.

The Violet became the badge of the Napoleons from the accident of the Emperor remarking on his banishment to Elba that he would return in the Violet season. The sweetest of humble flowers thus became the secret symbol of his friends and followers. In the villages about Paris and elsewhere people would ask, "Do you love the Violet?" If the reply was "Yes" (*oui*), the answerer could hardly be looked on as a confederate; but if it was "Well" (*Eh, bien!*), then the questioner would complete his sentence, "It will appear again in spring," referring, of course, to the Emperor. The great man, Corporal Violet as he was sometimes called in his absence, was as good as his word. He re-entered the Tuileries March 20, 1815, and his friends offered him the flower of the season, Violets, in token of their joy. Louis XVIII. was replaced, and it became at

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once dangerous and seditious to sport Violets even in the button-hole. Byron wrote :—

"Farewell to thee, France! but when liberty rallies
Once more in thy regions, remember me then;
The Violet still grows in the depths of thy valleys,
Though withered, thy tears will unfold it again!"

It was a poetic fancy that linked the Violet with the name of Napoleon. He who rose from the rank of a soldier of Corsica to the throne of the Lilies, whose name remained a potent spell in his country long after his death, found a fit emblem in a flower which springs in obscurity and long retains its perfume when plucked. Since 1815 the Violet dynasty has again ruled France, and on entering the little chapel at Chislehurst one recognises the humble flower thickly sewn in the wreaths and among the "sprigs and sprays" that rest on the coffins of Napoleon III. and his gallant son.

In Lord Beaconsfield's eloquent tribute to Paris after the siege and the war which banished the Violets for the second time as the emblem of the reigning family, he contrasted her with the "Violet City." The Violet was the badge of Athens. A golden Violet was one of the prizes of the floral games, and orators would flatter the people by addressing them as "Athenians, crowned with Violets!" It is not strictly an heraldic flower, since it does not appear, I believe, upon any escutcheon; but the Athenians and French, it seems, have worn it on their hearts. *H. E.*

MESSRS. VEITCH & SON'S NURSERY, CHELSEA.

IN a house set apart for Sarracenias and plants allied to them were a few very interesting plants. These hardy and half-hardy Pitcher-plants are not so noble in appearance as the Nepenthes, but they are certainly interesting and very quaint. Cephalotus follicularis seems to thrive with rare vigour. The curious and prettily marked little pitchers, attached to short foot-stalks, are piled up over each other to the number of a hundred on some of the plants. Sarracenia Wrigleyana × is a very handsome hybrid form, raised by crossing S. psittacina with S. Drummondii alba; the pitchers are deep red, distinctly veined with white, which gives the plant a very handsome appearance. S. Courtii × has also deep blood-red pitchers, deeply veined. The pitchers take a procumbent position, while those of the first-named variety are more erect. This is a hybrid raised in the nursery from S. psittacina crossed with S. purpurea. There are evidently other surprises in store for us in this interesting class of plants, if one may judge from the pans thickly studded with tiny seedlings. What a fund of pleasurable enjoyment there must be in watching the development of these from tiny babies to full-grown richly chased pitchers.

In one of the hothouses an old but seldom seen plant is now in flower—Ruellia macrantha; it has large Campanula-like flowers of a reddish-purple colour. This belongs to a class of plants easily propagated from cuttings, and it is not only distinct and pretty, but, flowering at this season, is valuable as giving variety amongst foliage plants. The most conspicuous plants at present in the Orchid department are the different forms and varieties of Cypripediums of the C. Sedeni type. C. Sedeni itself continues to flower during the entire year, and now that it has been crossed and recrossed with C. longifolium and others there are numerous pretty varieties to be obtained. C. albo-purpureum is not quite of the Sedeni type, but it possesses much distinctness, and is handsome. C. calurum is nearest the Sedeni habit and form, and of this some handsome varieties were observed. C. porphyreum should also be grouped with them. I think the finest of all is C. cardinale, which was in flower. I select these varieties of Cypripediums as showing distinct characteristics, and also because of their value in making hothouses interesting at this season. There are other fine hybrid Cypripediums in flower at the present time, as C. œnanthum, a sort beautifully spotted with maroon and shaded with rosy-purple on the dorsal sepal. It is only when one carefully explores house after house in these extensive nurseries that the full extent of the work that has been performed in raising hybrid Orchids of this genus alone is realised. The seedlings of some twenty-five distinct crosses have flowered; the largest proportion have also received First-class Certificates from various societies. Sometimes scores and hundreds of seedlings may be raised from one cross; at other times the entire stock may be counted on the fingers of one hand. With the exception of C. cardinale, which is scarce, the C. Sedeni forms are rather plentiful. Others are very scarce. C. Morganiæ is a fine variety, and certainly equal, if not superior, to C. Stonei platytænium. Another scarce and handsome kind is C. Schroederæ. *J. D.*

THE PANSY.

IT goes without dispute that everybody loves Roses, Carnations, Chrysanthemums, and Pansies. They form one of the most attractive quartettes in the floral world. What a blank would be left in our gardens by the removal of any one of them! In this little sketch we intend to speak of the Pansy, and particularly of the Belgian or fancy Pansy. It is to Mr. John Downie, of Edinburgh, that we are chiefly indebted for the introduction into this country of that class, which is so rapidly displacing the rare old show varieties, that florists find they must now propagate three or four times as many fancies as shows to keep up with the demand. Since Mr. Downie's initiatory movement, thirty years ago, thousands have entered with spirit into the work of improving the fancy Pansy, with the result that we have varieties to-day so perfect that it seems almost impossible to imagine on what lines future improvement will be run, unless it be increasing the size. Doubtless there are some colours which it would be desirable to obtain in the Pansy, as there are some it would be desirable to obtain in every other class of plants. The obtaining such will only be achieved by continued careful selection and cross-fertilisation, and even this may not bring about the desired result until we make some further progress in that most interesting of Nature's operations—the colouring of flowers. The fancy Pansy is a more vigorous grower than the show, and yet it has not so hardy a nature. This may seem contradictory, but it is nevertheless true. The show varieties are, as a rule, short-jointed and hard, and consequently stand a severe winter better than the fancies, which are much softer. From planting-out time, however, say, in the month of April on to September, all things being equal, the fancies will grow very much more luxuriantly than the shows; and doubtless this has something to do with their not keeping so well over winter.

Growers have yet something to learn about an ailment which very often affects Pansies about the month of June. A sickness seems to come over the plant, and in a very few days it droops and dies. Some hold it to be a disease which the Pansy is liable to at that season which cannot be cured; others again hold that it is the work of a very minute worm which attacks the main root of the plant. Both theories may be so far correct. It cannot be denied but that the small worms in question are to be found very often in dozens surrounding the roots of a plant that has succumbed; but whether they have been the first cause of the mischief, or only attracted to the plant because it was in a sickly condition, it is difficult to say. A fact which almost seems to prove that the work of destruction is the doings of vermin is the following :—Pansies are not, as a rule, affected with the so-called disease in new ground. This has been repeatedly proved, so that growers would do well to see to it that they plant their Pansies in the freshest piece of ground they have.

Pansies seem to be "clean feeders," and the more nearly we can approach the conditions in which they grow best naturally the more certain are we to succeed. Here comes in the question of shade. To get good blooms during the months of April and May it is not necessary that the plants be shaded, because during these months, though the sun be bright it is never scorching. Nature teaches us this lesson. We usually find wild Violets growing best at the root of hedges, and is it not during the early spring months, before the hedges get thick and green, that they are exposed to the full sun? Protection from very heavy rains is always necessary to save blooms from getting soiled when wanted for exhibition. As the season advances into June, July, and August, shading from the fierce noonday sun is essential, both for the purpose of improving the quality of the flower and maintaining the health of the plant. See to it, then, that a site is selected, if possible, with such surroundings as will bring about the desired result, otherwise artificial shading will have to be had recourse to if fine flowers are wanted. Shading is done by growers for competition in various ways. Some have light sashes covered with cotton for throwing over the beds, others believe in shading only the individual flowers, but this latter process entails much of labour which few can see their way to take in hand, although it is perhaps the most effectual when carefully carried out. Shaded, however, they must be, and the grower will just require to adopt the means best suited to attain that end in his particular circumstances, or else he will have inferior blooms, prematurely developed, bleached in colour, small in size, and utterly unfit for competition. One thing which takes any grower a long way on the road to success is to have good strong plants for planting-out in spring. When that season comes round we may recur to the subject.

A question with every one is, What are the best varieties? Subjoined is a list of the varieties shown in the fancy stands which were awarded 1st prizes at the International show held last September in Dundee, which speak for themselves :—Mr. M. Campbell of Blantyre, N.B., 1st prize, twenty-four blooms, nurserymen :—Evelyn Bruce, Bob Montgomery, Mrs. G. P. Frame, Earl of Beaconsfield, Mrs. Duncan, John Gold, Mrs. Russell, Wm. Cuthbertson, Mrs. Alexander Paisley, Mrs. Findlay, Mrs. McTaggart, Agnes Mitchell, Miss Bliss, Mrs. Weir, Catherine Agnes, Bessie Campbell, Mrs. Barrie, Wm. Wyndle, Mrs. Goodwin, Alexander Maxwell, E. M. Dalgleish, Chas. Stansell, Mrs. Storrie, and a seedling. Mr. Andrew Irvine, Tighnabruaich, 1st for twelve blooms, with Evelyn Bruce, Endymion, Donald McBean, Mrs. Jamieson, May Tate, Mrs. G. P. Frame, Mrs. J. Stewart, Mrs. Findlay, Miss Bliss, Perfection, Lizzie Irvine, Wm. Cuthbertson. Mr. John Stewart, Lennoxtown, Campsie, 1st for six blooms, with Mrs. G. P. Frame, Mrs. E. M. Dalgleish, Catherine Agnes, James Gardner, Mrs. John Downie, Mrs. Black.

Mr. Campbell and Mr. Irvine are comparatively new, though most successful, growers. Mr. Stewart is one of the leading amateurs in Scotland at the present moment; he was awarded both the 1st prizes for show Pansies at the exhibition referred to, but we deal with Fancies here, as we humbly believe them to be the "coming" flowers. *William Cuthbertson.*

GRAPES SHANKING.

YOUR correspondent, "H. J. H.," refers at p. 759 to a vinery which was planted with several varieties of Grape Vines, including four or five Vines of Muscat of Alexandria, at the warmest end of the house, and which it appears shanked so badly every year that they were cut down three or four years since and grafted with Gros Colmar, which has done well ever since; there being no shanking of the bunches, which fact your correspondent seems to think justifies the assumption that the influence of stock and scion has in some cases an influence on shanking. This inference may be correct in some cases, but the one under notice affords no grounds for arriving at such a conclusion, seeing that the Gros Colmar Grape does not bear the reputation of being a shanking variety. Had the result of the Gros Colmar and Muscat of Alexandria union been otherwise, there would have been evidence to support the inference drawn by your correspondent. The very fact of Grapes shanking is an indication that the conditions under which the Vines and Grapes are grown are not congenial to their requirements; and I do not look upon shanking as a disease, but simply as evidence of there being something in the border in which the Vines are growing, or the management of the same throughout their various stages of growth, or both combined, that they do not like. Moreover, I assert that if the Vines are planted in properly drained and well-made inside borders, the latter mulched with 3 inches thick of horse-droppings, and kept well supplied with tepid water, including frequent applications of liquid manure, during the interval from the time the Vines start into growth until they have perfected their crops, and the vineries are adequately supplied with hot-water pipes, together with skilful internal management, and the Vines being cropped light rather than otherwise, there will be no shanking in the bunches of Muscat of Alexandria, or any other variety of Grape to be noted. This statement is made upon the result of practical experience, and with a full sense of its importance. *H. W. Ward, Longford Castle.*

APPLE CULTURE.

The publication of *British Apples* at the present time is most opportune, and may be said to mark an era in the history of Apples, and it will probably be the means of greatly extending the cultivation of this valuable fruit. As it is, the book is valuable for reference, and will be treasured as a memento of the National Apple Congress. It would have been more interesting and permanently useful if it had been accompanied with a historical introduction and concise cultural directions, which Mr. Barron is so well able to give. The Apple is not only the most useful of our hardy fruits, but owing to its flowering later than any of the other kinds it is the most certain to produce good crops of fruit. In the form of the wild Crab the Apple itself is a native of this country. Whether the wild Crab was improved by culture in this country, before the invasion of the Romans is not known. At that time the Romans cultivated numerous varieties, and doubtless they introduced them into this country. It is not likely that these Apples would be lost during the dark ages; but there were other opportunities to introduce them, especially at the time of the Conquest, when they might have been introduced by the Normans. Indeed, Mr. McIntosh in his *Practical Gardener* suggests that "It is not improbable that many of the Apples introduced by the Romans were first planted in the neighbourhood of Hereford, where the Romans were long stationed." McIntosh gives further very interesting information on the history of the Apple as an introduction to his *Systematic Catalogue of Apples*. According to the information gleaned by Mr. McIntosh it was computed that some of the Herefordshire Apple trees were 1000 years old, and were still prolific (?). This statement was made with the knowledge that Mr. Knight considered 200 years to be the ordinary duration of that tree. Lord Scudamore, of Holme Lacey, who was also Ambassador at the Court of France in Charles I.'s time, collected grafts of cider Apples in Normandy, which were grafted and planted on his estate of Holme Lacey. The monks before the time of Henry VIII. were good gardeners, and generally established themselves in a situation favourable to the cultivation of good fruits, and wherever a monastery had been established there also the remains of fruit trees are to be found. Henry VIII., whatever may have been his shortcomings in other respects, was credited with promoting the science of pomology, many varieties of hardy fruits having been introduced to this country during his reign. In a walled-in garden at his palace of Nonsuch in Surrey it is said that he had under cultivation 212 fruit trees. It has also been alleged that during recent years the quality of our fruit is deteriorating, owing to the changes of climate. It may be that in some districts this change is taking place, but the question may well be asked—Are Apples really deteriorating in this country, or is it only certain varieties that had been under cultivation for ages? In England the Apple that stands first in the estimation of most people is Cox's Orange Pippin. In the new edition of the *Fruit Manual* Dr. Hogg states that "This excellent variety was raised at Colnbrook Lawn, near Slough, by a Mr. Cox, who was formerly a brewer at Bermondsey." "The Apple originated in 1830, and is said to have been from a pip of Ribston Pippin." It was sent out by Mr. Charles Turner, of Slough, I believe, nearly thirty years ago, and has been grown and fruited by him ever since. And yet Mr. Turner told me not two months ago that he had seen finer Orange Pippins this year than he had ever seen before. Evidently this variety is not degenerating. The theory held by Mr. Thomas Andrew Knight, of Downton, and later by Mr. McIntosh, that there is no such thing as a young Apple tree unless raised from seed must not be accepted without reservation. McIntosh evidently adopted Mr. Knight's theory, which is best given in the words of the former gentleman. He says:—"Every tree propagated by grafting is no more than a prolongation of a part of the parent tree. There is no such thing as a new or young tree, excepting those which are really raised from seeds. Every Ribston Pippin in the kingdom is no other than a part, a wing or branch, of the original Ribston discovered at Ribston Hall, in Yorkshire." Knight writes in a more positive manner even than this. He says that all plants "propagated from the same stock partake in some degree the properties of the same life, and which will attend the progress of that life in the habits of its youth, its maturity, and its decay, though they will not be in any way affected by any incidental injuries the parent tree may sustain after they are detached from it." That famous pomologist was as far out of his reckoning when he stated that "the Moil and its successful rival the Red Streak, the Musts and Golden Pippin are in the last stage of decay, and the Stire and Foxwhelp are hastening rapidly after them." "Do not prophesy till you know," might have been good advice in this case. In the present year Dr. Hogg says the Foxwhelp is one of the most valuable of the cider Apples of Hereford; and of the Golden Pippin it is further stated that "this is one of the oldest and one of the most highly esteemed of dessert Apples. The tree is a healthy grower, and it is an excellent bearer."

Some eight or ten years ago the Council of the Royal Horticultural Society offered prizes for Apples, special prizes being offered for such old sorts as Golden Pippin, Ribston Pippin, &c., which brought out some splendid examples. The Golden Pippins were large in size, clean, and clear in the skin, and perfectly ripened. Indeed, the evidence of recent years goes far to prove that a judicious selection of stocks and good cultivation from the first has more to do with the quality of the fruit than anything else.

How to Plant.—Whenever my advice has been asked about stocking a garden with fruit trees I have always placed in a prominent position the right preparation of the ground. This may be said to lay the foundation for future success or failure. Those who have but little experience of gardening cannot always be made to understand the importance of draining their gardens, but in many cases the success or failure of fruit culture would depend upon whether the ground is drained or not. The question may arise subsequently whether it would be best to drain 3 feet or 4 feet deep. We had to drain a part of the fruit garden here, and I decided to drain 3 feet only. The last season has been a very dry one, and water is scarce; but in many undrained gardens water will be found standing within a foot of the surface, if a test hole is dug. The next thing is the preparation of the ground. We trench it 2 feet deep, and this effects quite a revolution in some soils. For instance, a new garden may be formed on a field or meadow that has not been cultivated more than 8 or 9 inches deep for ages. In some cases, though not always, the substratum is poor, and when turned up to the top is quite unfit to grow any kind of crop. The way I have always done when planting such ground with fruit trees, has been to place about half a barrowloads of good loam round the roots of each tree. The trees form plenty of roots into this soil, and if it is thought desirable to remove them the following or two seasons after, they are sure to be furnished with plenty of roots. In trenching the ground, if it is poor, some decayed manure must be worked into it. I generally place a layer in the bottom of the trench, and another layer about 9 inches or a foot below the surface. The next year or perhaps two years after the trees are carefully lifted again and the ground re-trenched; this time it will not require any manure. We plant the trees, in the first place, 5 feet apart, and when they are replanted the second season the distance apart is 8½ feet. This will give a surplus stock of trees which may be planted in another part of the garden, which has the advantage of being trenched over twice and deeply dug several times. The trees ought to be carefully lifted, and if it is done during good weather in November, the removal is beneficial rather than otherwise.

Stocks.—The kind of stock on which the trees are worked is of very considerable importance, in fact for small gardens the use of the Crab stock for Apples is a mistake. Trees worked on the Paradise or dwarfing stock come into bearing the third year. All such trees have a tendency to form surface-roots; they ought to be planted so that the union of the scion with the stock is just covered, and in that case fibrous roots are formed, and continue to form, annually close to the surface of the ground. The formation of these roots should be encouraged, and this is done by placing some decayed manure round the roots of the trees, say in November—we are not very particular as to the time. It is generally done in our own garden when the first frost hardens the ground sufficiently to allow barrows to be easily wheeled over it. There are many different forms of trees. I prefer the pyramid form, or what is termed such by the trade. They are not really of a pyramid form when they are purchased at two years from the graft, but they are trees furnished from the base to 4 or 5 feet high with branches as wide at the top as at the base. We do not try to get them into a pyramid, but rather allow them to take a natural form of growth, cutting the young wood back scarcely at all, and always at an eye that will direct its growth outward.

Pruning.—Some varieties seldom require any thinning-out of the young wood, and grow into well-formed fruitful trees with the least possible use of the pruning-knife. Others, such as Waltham Abbey Seedling, would soon form a thicket of wood unless judiciously thinned-out. A great part of such pruning and thinning-out of the young wood as may be required should be done in the autumn, before the leaves fall; it is much easier to do it then, as the leaves give the pruner a better idea of the number of branches that should be removed. Then as to the presence of canker on fruit trees, I have had to do with gardens where the old trees on the Crab stock were almost eaten up by it, and young trees on the same stock cankered badly in a year or two, and by planting on the surface-rooting stock, trenching and retrenching the ground, lifting and replanting the trees once or twice in the early stages of their growth, and encouraging the roots upward by mulching, the trees did not canker at all. I am certain that any old worn-out garden may be renewed by planting young trees on the dwarfing, surface-rooting stocks, and following the above directions. *J. Douglas.*

THE CHRYSANTHEMUM.

The success this year of the autumn shows of Chrysanthemums has amply proved, if proof were necessary, how general both the cultivation and the appreciation of the Chrysanthemum have become in the South of England. As the primitive simplicity of Christianity, however, is said to have been destroyed when it became the religion of a Court, there is some fear that fashion will lead to degeneration in the standard of excellence for this beautiful flower. Who that appreciates the form, colour, and habit of some of the pompons and smaller incurved varieties, but has marked with a kind of awe the vast expanse of bloom developed in a prize specimen of the modern Japanese type? The Chrysanthemum, we all know, is a gross feeder, and much depends upon cultivation, but one might be tempted to ask, in amazement before one of these blooms, "Upon what meat does this our Cæsar feed that he has grown so great?" While each new variety is bred with the special object of being first of all bigger than its predecessor, and some ninety new varieties are produced each year, there is small doubt about the result as it will affect the future of the Chrysanthemum. For should the larger sorts only be cultivated, it will soon become utterly unfitted for any but decorations on a grand scale, and growers with small houses will be at a great disadvantage. We have always admired the Chrysanthemum from a higher standpoint than mere size, and would gladly see it saved from the fate alluded to. Why should we not adapt it as far as possible to decorate the table and the hall? The first step towards this end is at any rate within the bounds of the practical. As the prize list sets the fashion, let the promoters of next year's shows offer prizes for Chrysanthemums grown in pots of 32-size, on single stems, not trained, and tied only to a central stick. One class would be required for pompons, with which might be included the smaller hybrids, and a second for incurved or reflexed varieties. This would probably be welcomed as a novelty both by growers and the public; it would bring into notice many beautiful varieties now looked upon as useless, and having set up some other standard than size for which to grow, it would tend to a general improvement in the cultivation of the species. *Essex County Chronicle, December* 5. [The writer has overlooked the fact that any Chrysanthemum can be kept comparatively low in stature by pinching and stopping up to the beginning of July. The blooms will then be more numerous, and much smaller than the highly-fed giants seen on exhibition tables. Growing for that purpose demands quite other treatment to that required for plants intended for the greenhouse or the dwelling. If the one-stem fashion—which, by the way, is a straining of the habit of the plant, which naturally throws up many shoots from its roots—were adopted the plant would rise to a great height, and could only be tolerated by persons of taste to stand among tall greenhouse plants, so as to show its head only. Ed.]

Orchid Notes and Gleanings.

CATTLEYA WALKERIANA (*Gardner*), C. BULBOSA (*Lindl.*).—This lovely plant, of which fine varieties were exhibited both by Baron Schrœder and by Mr. James at the Royal Horticultural Society's Garden at the last meeting, having of late been sent about under so many different names, that a note on the facts of the case will not be out of place. The name C. Walkeriana is the correct one, by reason of its priority, it having been gathered in Brazil by Gardner, who gave it the name of his friend and companion, Edward Walker, and under that name it was described in Hook. *Lond. Jour. of Botany* in 1843. In May, 1847, it flowered with Mr. Rucker, and in August of that year it was named C. bulbosa by Dr. Lindley, and figured and described in the *Botanical Register*. Later on we also find a very fine figure of it in vol. xv. of Paxton's *Magazine of Botany*, where the name C. bulbosa is applied to it, the drawing having been taken from Mr. Rucker's plant; in fact, Dr. Lindley's name seems generally to have been adopted in gardens in this country. In 1879, pl. 17, *La Belgique Horticole* gave a figure of almost as fine a variety as those exhibited at Kensington, under its proper name, C. Walkeriana, and the whole of the representations of the plant being compared there is no difficulty in establishing the identity of C. Walkeriana and C. bulbosa. In growth C. Walkeriana is very distinct, those of its pseudobulbs which are not intended for flowering being short and thick, and bearing thick hard leaves, while for the purpose of bearing its flower-spike separate slender growth is produced, out of which the flower-spike proceeds. These flowering growths generally bear but rudimentary leaves, which fall away soon after flowering, although both the *Botanical Register* and Paxton's *Magazine of Botany* exhibit them with well developed leaves, and one of the plants exhibited at Kensington showed foliage on its flowering growth in an advanced stage. The special small flowering growth may be taken as a crucial test for determining C. Walkeriana, and examination of the plants will prove that most of those in collections under the names C. dolosa, C. Jongheana (to which it bears little resemblance), C. nobilior, C. sp. Minas Geraës, &c., are nothing but varieties of C. Walkeriana, and without any botanical distinction from that species. The true C. dolosa and C. Jongheana are well known, but importations of them have yet to come. C. Walkeriana thrives best on a block or in a basket, and suspended near the glass in the coolest part of the Cattleya-house. It should be copiously watered while growing, and should not be allowed to get quite dry, even in the resting season, unless it is kept in a very cool place. When well grown, like Baron Schrœder's plant, which was certificated, it is a very fine and desirable species. It should be distinctly noted that if grown on blocks or rafts they should be suspended horizontally, and not perpendicularly, as they often are, as that one item makes all the difference between success and failure sooner or later. The same applies to C. Acklandiæ, C. Schilleriana, and the varieties of Lælia pumila, which mostly slowly decline on blocks hanging perpendicularly. *James O'Brien.*

CYPRIPEDIUM INSIGNE.—This year I have some plants of this, standing outdoors several months without any protection save being under Lime trees; they were watered when there was not sufficient rain, and that was all the attention given them. They were brought into a cool house about a month since, and are now much more healthy in appearance and have more bloom than those kept in the cool house all summer. I quite think with other of your correspondents it is the best treatment for cool orchids; what few I have I shall stand outdoors at the beginning of June, and leave them out until the end of October, unless there should be severe weather. *Harrison Weir, Hinwick Lodge, Lansdown Road, Tunbridge Wells.*

EPIDENDRUM RADICANS.—Stems terete, leaves sessile oblong; flowers numerous, orange-scarlet, in terminal stalked spikes, each flower 1¾ inch diameter; perianth segments ovate lanceolate, lip stalked, stalk adherent to the column; disc deeply threee-lobed, lobes oblong, fringed. Native of Mexico and Guatemala. (*Orchid Album*, t. 161.) It requires the temperature of the East India-house, and should not be kept too dry, nor much shaded.

ANGRÆCUM BILOBUM KIRKII. — Leaves linear oblong, bilobed, lobes rounded; flowers racemose, each 2 inches across; segments and lip all pure white, lanceolate acuminate, lip with a long spur. Native of Zanzibar. This plant is best grown, says the *Orchid Album* (t. 162), in a small pan or basket suspended near the light, but shaded from the burning sun.

CYPRIPEDIUM HAYNALDIANUM. — There is a beautiful figure of this species in the *Botanical Magazine*, t. 6296, and a full description of it in the *Gardeners' Chronicle*, vol. vii., n.s., p. 272. It is a comparatively recent introduction from the Philippines, and bears considerable resemblance to the Bornean C. Lowii, but is distinct enough to merit specific value. The upper sepal is spotted at the base with pale brown on a greenish-yellow ground, suffused rose, and striped with darker veins on the middle, and white upwards. This, together with the narrowly spathulate petals, constitute the most attractive feature of the flower. The basal half of the latter is pale yellow, beautifully spotted with large pale brown blotches, while the upper half is suffused rose and white. The labellum is rather small, greenish-yellow, and not very conspicuous, but several flowers are produced in a raceme, and the plant is highly attractive and desirable. It is flowering in the East India-house at Kew. *J. F.*

ORCHID INFLORESCENCES.—Professor Reichenbach has obtained from an unnamed sender in the United States several inflorescences of Oncidium rupestre, Lindl., and one of Epidendrum variegatum, Hook. If all correspondents sent such rich specimens the work might be done in one-third of the required time. *H. G. Rchb. f.*

ODONTOGLOSSUM WILLIAMSIANUM. — Pseudobulbs oval, with two oblong acute ribbed leaves issuing from the top. Scape proceeding from the base of the pseudobulbs; flowers numerous, each 5 inches across; sepals lanceolate, greenish, with irregular transverse brown bands; petals spreading, shortly stalked, oblong, canary-yellow, the basal half rich brown, with a narrow sinuous yellow border; lip with two very small lateral lobes, and one large transversely oval one, yellow, with a few transverse brown bands. A native of Costa Rica, resembling O. grande. *Orchid Album*, t. 163.

MILTONIA SPECTABILIS RADICANS. — Rhizome creeping, scaly, rooting on the under-surface, and giving off ellipsoidal pseudobulbs from the upper surface. Flowers stalked, solitary, 4½ inches long, 3 inches broad, flat, segments white, oblong; lip stalked, roundish, 2¼ inches across, white with broad violet stripes radiating from the base. It flowers in July. Rough fibrous peat with plenty of pot-room and sufficient water when growing are required. Mr. Williams finds the shady side of the East India-house to suit the plant best. *Orchid Album*, t. 164.



FIG. 132.—CATTLEYA WALKERIANA, VAR.

ODONTOGLOSSUM CERVANTESII. — Pseudobulbs ovoid, with a single strap-shaped evergreen leaf; flower-stem from the base of the pseudobulb racemose; flowers each 2¼ inches across; sepals ovate lanceolate, petals roundish ovate, all white, with narrow, concentrically arranged, brownish bars at the base; lip cordate ovate acute, white. A native of Mexico. It requires the treatment of the other cool Odontoglossums. *Orchid Album*, t. 167.

DENDROBIUM MOSCHATUM CUPREUM.—This is the Dendrobe commonly but erroneously known as D. calceolus. The flowers are racemose, each 3 inches across by 2½ inches in length; sepals ovate lanceolate, petals of similar shape but broader; both apricot-yellow. Lip bag-shaped, dark coppery-orange. A native of Burmah. It is an evergreen species, blooming in summer. It requires plenty of light to ripen its growths well. *Orchid Album*, t. 165.

CATTLEYA CALUMMATA ×.—A cross between C. Aclandiæ and C. intermedia. It is of dwarf habit, and flowers two or three times in the year. Flowers 4½ inches, flat; segments oblong lanceolate, white,

with small violer spots ; lip three-lobed, lateral lobes upturned round the column, pale lilac, central lobe with a short broad stalk supporting a two-lobed disc ; lobes rounded ; rich magenta. [We are at a loss to know the meaning of the word calummata unless it be a corruption from κάλυμμα, a hood. ED]

JAPANESE VEGETABLE FOOD PRODUCTS.

THE Japanese Commission at the late International Health Exhibition have produced an excellent catalogue of their exhibits, which contains a great deal of valuable information on the production and uses of the specimens in question. In the first group, devoted to food products, a series of analyses is given of the principal grains and pulses, fungi, cucurbitaceous fruits, &c.

The fruit of the Maidenhair tree (Gingko biloba), under the name of Ginnan, is described as an acrid poison, so poisonous indeed that if the juice touches the body boils will immediately be produced ; any one eating the fruit raw is soon affected by the poison, but when roasted its poisonous properties disappear entirely, and there has never been a single case of poisoning known to arise from its use when roasted.

Lagenaria vulgaris—Kau-pio—dried fruit. — The method of preparing is as follows :—The first step is to cut off the extremities, then the seeds and pulp are taken out, the fruit is then cut into lengths or strips, which are dried by hanging it on sticks. It can thus be preserved for a long period if kept in proper vessels and closed tightly. To prepare it for food it is boiled with water, soy, sugar, sweet wine.

Agaricus campestris—Shii-take.—The following is given as the mode of growing Mushrooms. Various tall trees are cut down, marks are made by knives, and the trees left for two years upon the ground. On a winter day the timber is cut into pieces and the logs left inclining to a fence or made into square piles and left alone for from two to four years. Mushrooms then begin to grow in rainy seasons. They are afterwards covered over and the full-grown ones are picked. These are called "Spring Mushrooms," to distinguish them from those which grow in the autumn, and which are called "Autumn Mushrooms." The gathered Mushrooms are compressed with Bamboo sticks and dried by exposure to the open air or to fire.

Gelidium corneum—Agar agar, or Kanten.—The Gelidium is soaked in water and pounded well in a mortar until bubbles are formed and the colour becomes greyish ; it is then poured into a large basket, dipped in water, and stirred until turbid water arises. The mass is next spread upon a mat made of Bamboo or reeds, and after thus drying it is put into a mortar again and hot water poured upon it. It is then boiled at a gentle heat, and when the weed becomes pasty it is poured into a linen bag and squeezed into a vessel and left to coagulate. The jelly is cut into threads and frozen by exposing the pieces to intense cold in thin layers upon Bamboo mats. Kanten is used as a material in making confectionery and also as food. In summer it is prepared by pouring hot water upon it, and leaving it to coagulate. It is then cut into fine threads, mixed with water and seasoned with sugar or soy according to taste. It is also used for purifying turbid "sake" or Rice spirit.

Frozen Kouniaku is prepared from the tubers of Conophallus konjak, which is pounded and coagulated by the action of lime and then frozen by cutting the Kouniaku into thin slices, drying and afterwards freezing it by exposure to intense cold. It is used as food after soaking in warm water.

Katakuri Starch.—The bulb of Erythronium dens-canis is crushed, washed with water, and decanted. The precipitated starch is collected, spread upon mats, dried by exposure to the sun, and finally ground into a fine powder. It is made into a kind of vermicelli called Katakuri meu, and is chiefly used in making confectionery, or is made into a paste by adding hot water. It is served with sugar, and makes a very delicious food.

Kuzu Starch is prepared from the root of Pueraria Thunbergiana by pounding it, placing it in a tub with water, which is stirred, and afterwards filtered through a linen bag. The starch after settling is washed and decanted several times, and finally dried. It is principally used in confectionery and may also be served with sugar by making it into paste with the addition of hot water. It is not unfrequently used in cookery. It is remarkable that the stems of the plant yield a strong fibre which is used in Corea for making a textile fabric very strong and similar in appearance to an ordinary kind of coarse linen, Samples of this were exhibited at a recent meeting of the Linnean Society.

Warabi Starch is prepared from the root of the Brake Fern (Pteris aquilina), collected in the season when it is withered and no young shoots are to be seen. For this purpose the root is collected, cut into pieces, pounded, washed, decanted, and the settled starch is collected, and finally dried. It is mixed with Wheat-flour or Rice-meal, and made into cakes, or when made into paste by boiling with water mixed with the astringent juice of Persimmon, it is used for joining paper together, and the joint does not part even if exposed to rain ; hence it is widely used for this purpose.

Hijiki (Cyrtoseira sp.) — The seaweed which attaches to the rocks at the bottom of the sea in February and March is collected, boiled in an iron pan for about two hours, and when it has assumed the colour of lacquer the seaweed is taken out and dried in the sun. If it is protected from moisture it will keep for a number of years. It is boiled with water, and when it becomes soft it is strained, flavoured with soy, sugar, &c., and eaten.

Ogo (Gigartina sp.)—It grows upon the rocks at the bottom of the sea in the latter part of February. It is gathered during ebb-tide in June, and stored after drying it by exposure to the sun. By pouring hot water upon it just before use it becomes green, and appears quite fresh. It is used for garnishing, and plays the same part as Parsley in European cookery.

Wakame (Alaria pinnatifida).—It is gathered in



FIG. 133.—CATTLEYA WALKERIANA, VAR.

February during the ebb-tide by rolling it upon a rod. After gathering it is hung upon ropes stretched between posts and stored when dried by the heat of the sun. If it is washed with fresh water, several times the saline taste is removed, and it becomes very sweet. It is softened by soaking in hot water and is afterwards served steeped in vinegar, soy, or "mirin" for some time, or it is put into soup and served. It contains a large quantity of mannite, and its ash contains some iodine, but compared with Laminaria these are quite insignificant.

Tangre, Kombu (Laminaria japonica).—This grows in the Northern Sea, and is mown at the bottom of the sea by divers. When sun-dried it is called ordinary Khombu; various articles are made from it, and they are often coloured red, green, &c. It is used as a food by boiling with soy, sugar, mirin, &c., or served in soup.

Laver, dried—Asakusa-nori (Porphyra vulgaris).—The period for gathering Laver is the latter part of September. The twigs of the Hō (Magnolia hypoleuca), of the Oak, or of the Keyaki (Zelkowa keyaki), are made up into faggots, which are placed at the bottom of the sea at low tide, and after thirty or forty days the weeds grow around the faggots. After severing it from the faggots it is thoroughly washed several times, in order to remove the dirt clinging to it, and then it is put into tubs and cleaned with pure water. After it has been thoroughly cleansed it is dipped out of the tub, spread on a raised stand that has been previously covered with Bamboo screens, each screen surrounded with a rim, to prevent the substance from running over. The weed is left until the water has all drained away. The rim is then removed, and afterwards the screen, with the Porphyra vulgaris, is taken off, and the latter is picked off and exposed to the rays of the sun, after which it is stored. Recently the modes of procuring and of preserving this seaweed have been improved to some extent, there has also been an increase in the variety of ways of curing it, either in the green state or by drying and salting. To prepare the cured weed for table it is placed over a fire and dried, an then eaten with rice; it has a very delicious *bouquet* and flavour and is esteemed by every one.

Kori-tofu: Frozen Bean Curds.—It is made by freezing common Bean curd, which is made of Daidzu (Glycine [Soja] hispida), and contains a large quantity of vegetable albumen. This is one of the most frequent kinds of fruit of the middle and lower classes of the people of Japan; it contains an abundance of nourishment, and hygeists recommend its use. Bean curd is indigestible, but in passing through the process of freezing it undergoes a change. Owing to the Bean curd spoiling very readily, it is not suitable for carrying long distances. It is made by steeping Soy Beans in water and then grinding them, after which the refuse is removed by boiling and dissolving it in a little oil. The liquid remaining after taking away such refuse, is put into a kettle and again boiled. Upon the surface of the water a thin substance, like wet paper, forms, this is skimmed off and dried and known as "Yuba," the taste of which is very agreeable. When it begins to bubble up brine is sprinkled over it in order to stop the bubbles and it is put into a special wooden box and afterwards thrown into a cotton-cloth bag and coagulated into long square shapes, which is the Bean curd.

Bean curd is prepared for eating by boiling it, or holding it over a fire. It is usually eaten with soy and various condiments; it is easily digestible and is suitable food for adults, infants, or invalids, but it cannot be preserved for more than a day or two owing to its perishable nature, whereas frozen Bean curd can be preserved for a length of time, but it is indigestible and furnishes less nourishment than the kind first named. The "yuba" or skin of the Bean curd is used as a food-adjunct, with boiled Rice, by most persons, by boiling or warming over a fire and salting it.

Umiboshi: Salted and Dried Plums.—There are two ways of salting Plums, one to put three "go" of salt upon one "sho" of Plums into a tub, for about ten days. The Plums are turned over, and then again put away for a week, when the same process is again gone through. The other way is to fill a tub with Plums, and sprinkle over them eight "shos" or a "to" of salt. In both of these modes of preparation the plums, after being kept in the brine thirty days, are arranged upon straw mats, and exposed to the rays of the sun for seven days. Then Shiso (Perilla arguta) is dipped into the juice produced by the mixture of salt and Plums, and is exposed to the rays of the sun, and set aside again for several days. When the colour changes to a beautiful red, it is then exposed to the open air for two nights, during which time the sourness somewhat disappears, and a very delicious flavour is produced.

Preserved in an earthen jar, and closely sealed with a thick paper cover, this preparation will keep for over ten years. It is very valuable as a provision in campaigns and on voyages. Moreover, the taste remains unchanged, even to the palates of those suffering from high fever, or of those whose sense of taste from the same cause has been much impaired; therefore, it is kept in almost every house, and is especially used for invalids.

(To be continued.)

Plants and their Culture.

STOVES: FLOWERING PLANTS.—With a good selection of the winter blooming varieties of these there should now be a brilliant and gay display that will enhance the attractiveness of the garden at the coming festive season of the year. The Chrysanthemums for several weeks past will have been the showiest plants in the cool houses, and now these are nearly over it will afford a pleasing diversion to look to the stoves for some few weeks to come to yield attractive flowering and foliage plants that will bridge over the time till the forced plants and bulbs are obtainable. With a stock of Poinsettias of various heights a gay display can be made by interspersing them among the Palms, Ferns, and other foliage plants; for this purpose the single-stem plants will be preferable, and really will not take up much room in the arrangement. Up to the present my stock of this useful plant has been grown in a dry pit, with plenty of means for keeping up the requisite temperature and for giving ventilation; under this treatment they develope a quantity of fine bracts that will, on their removal to the stove, have a telling effect among the foliage plants. As a margin to the front of these I have several rather dwarf plants of Euphorbia jacquiniæflora with good racemes of flower on them. These, when interspersed with a few Begonia insignis and Calanthe vestita and C. Veitchii, will make the chief hothouse very cheerful for Christmas. With such additions to a house that is mainly devoted to foliage subjects it will be found necessary to modify the usual routine in the way of affording atmospheric moisture; we shall therefore now use both syringe and water-pot less freely, and thus endeavour to retain the flowering plants as long as possible in good condition. The temperature may be reduced a few degrees, 60° by night being found ample, guarding, as a matter of course, against a long continuance below that standard should a few frosty nights occur; a rise of 5°, 10°, or 15° during the daytime should be allowed, according to the state of the weather. Under this drier treatment a sharp watch must be kept on insect pests, as both green and black fly and thrips will increase apace. To remedy this frequent fumigation must be given, which will have the desired effect.

An excellent addition to the few things we have mentioned for this season of the year will be found in Aphelandra aurantiaca Roezlii and A. nitens, two most distinct plants, handsome alike in foliage and flower. We have not grown them of late, not having had an opportunity of procuring seed of either kind, plants thus raised being far away better than cuttings or old stools.

In order to make the stove still more interesting a few well grown Nepenthes should be introduced; they would endure the temperature above indicated if not kept in it too long. Of this genus Nepenthes Mastersiana is undoubtedly one of the best at present in cultivation, its massive pitchers, of a claret colour, being singularly effective, and they are also produced freely—a point which adds to its value considerably. N. Rafflesiana, N. Hookeriana, and N. Sedeni are each of them well tried kinds that will be found to give general satisfaction in even a limited collection. These plants are of easier growth than most cultivators imagine. The main thing to be on guard against is extremes both in temperature and in the application of water to the roots; nor should they on any account be allowed to suffer for the want of it, by providing for a free passage of water through the soil there should be no fear of their becoming sour or sodden.

Thyrsacanthus rutilans is showing numbers of its long panicles that will ere long help to make a good show. The stock that was struck last year are now 4 feet and even more in height, and advantage is being taken of the length of the stems to train the plants partly over the pathway, in which position the utmost can be made of them when in flower. They will look better trained in that manner than in any other that has been tried. Plumbago coccinea and P. rosea should also be useful subjects when trained in a similar manner. On the roof of the stove are quantities of the showy blossoms of Ipomœa Horsfalliæ, which, though of short duration, have fully made amends by their numbers. Jasminum gracillimum has also been flowering for some weeks past, and bids fair to continue. Those who possess an old plant of Ardisia crenulata may easily raise some seedlings when the berries are quite ripe and fit for removal. This makes an excellent plant for the dinner-table during the winter, when well grown and kept free from scale; its compact habit, and the freedom with which it produces its berries, making it a distinct and effective plant. The drawback to its more extended culture is, no doubt, caused by its slowness of growth, as it is two or three years before a plant can be grown; the return, we think, would, however, well repay the waiting.

In a COOL STOVE, or, more properly, a temperate-house, there are several useful things for the present season of the year. There are numbers of the blooms of Epiphyllum truncatum violaceum, and now that these are going off those of E. t. Russellianum are beginning to expand. Begonias of the winter-flowering section (B. insignis in particular) succeed well in the same house, the temperature by night for which varies from 50° to 55°. Linum trigynum does well in this temperature, so do the winter-flowering varieties of Amaryllis. A vinery that has been closed for a few weeks will be a very good place to open the first of the Roman Hyacinths and Narcissus. These will now come in useful for the conservatory, as it is rearranged; the later spikes will open in that structure without any difficulty, and will last for some time. Bouvardias in pots will succeed well in the vineries that are in their earlier stages; those that are planted out in a heated pit are flowering most profusely, and, being close to the glass, produce flowers of great durability.

CONSERVATORY.—A few of the latest Chrysanthemums are still fresh, and arrange well among the dark foliage of the Camellias. The buds of the latter are beginning to expand; Solanums are now in good form, with a fine crop of berries; Erica melantheia and E. hyemalis are both useful at this season; Primulas also commence to make a show; with these and other miscellaneous plants in bloom we hope now to make the conservatory look cheerful. With the thorough clean-out after the Chrysanthemum season, opportunity has been taken to overhaul the climbers, planting fresh ones where required, also top-dressing and cleansing others that needed this attention. *James Hudson, Gunnersbury House Gardens, Acton, Dec.* 16.

Fruits Under Glass.

PINES.—The first week in the year is an opportune time to start a house to yield fruit during the height of the London season. The Queen is still unrivalled for this purpose, its all-round good qualities being still unequalled; but where only a moderate amount of glass is at command, however, from which it is desirable to derive a lengthened supply of ripe fruits, a mixed house comprised of Queens, Smooth Cayennes, and Charlotte Rothschilds will be found the most serviceable, as the former ripens about a month before the other varieties, and Rothschilds keep longer in good condition after they are ripe than Cayennes. If it is found necessary to replunge the plants arrange the Queens at the warmest end of the house, and make firm the material around the pots, so that the roots may be kept with comparative ease in a uniform degree of warmth and moisture. To cause excitement an increase of the temperature and atmospheric humidity must be promoted, the night warmth

should range between 65° and 70°, and day 10° higher, the minimum figures being maintained when the external temperature is cold, and slight ventilation should be afforded when the sun causes the thermometer to reach 80°, while the bottom-heat should be frequently tested and kept at from 85° to 90°. The increase of atmospheric moisture should be moderate, as if freely created the plants will be liable to make a growth before showing fruit, and thus defeat the object for which they were started; their balls of soil having been preserved rather dry for several weeks should be moistened through with Peruvian guano-water at a temperature agreeing with the bottom-heat, and then be individually examined weekly, and maintained in a healthy medium. The weather continues favourable for fruiting plants, and the essential temperatures can be kept up without recourse to undue firing, which creates a parched, unhealthy atmosphere, very detrimental to the perfect development of the fruits. Keep all plants having fruits swelling, properly supplied with nutritious fluid, and surrounded by a sweet humidity. It is not advisable, however, to syringe overhead at this dull season. Withhold water from the roots when the colouring of the fruit commences, and after they are gathered resume watering, and gently syringe the stools over early every fine afternoon to encourage the suckers to strengthen. Such plants as were potted late in the autumn, and are intended for fruiting next winter, should be, unless they are very strong, still kept quietly moving, and assisted with mild stimulating liquid each time they require watering. Where the soil to be used for spring potting purposes is stacked in the open, it should be now moved into a shed where it can be aërated and sweetened before it is mixed with the necessary ingredients to form a suitable compost.

Strawberries.—In the forcing of these it is not unusual for beginners to err by employing too much fire-heat during the early stages of advancement; this is, however, a fatal course to pursue, for the Strawberry is, of all subjects, one of the most impatient of anything pertaining to high temperatures, especially those obtained by artificial means, until after the fruits are set and commence to swell, when few fruits, not even excepting tropical varieties, more fully enjoy warmth; I would therefore advise those who have placed plants in warmth not to exceed the temperature given on p. 655 under such conditions, accompanied with a buoyant circulating atmosphere, and the judicious application of tepid water at their roots. The plants, if they have been properly prepared, will make good progress. To plants that are weak some stimulating agent must be given, and for this purpose nothing is better than clarified liquid-manure derived from sheep and cow dung, which should be carefully diluted before being made use of. A very important item in the plants' management is to prevent them from becoming drawn, and to this end they should be kept up near the glass, which should be thoroughly cleansed—an all-important item during this season of short days. As has been previously remarked, early plants are forward in pits, and arranged on stages over beds of fermenting leaves, the humidity arising from which creates an invigorating atmosphere of great service to them, and dispenses with the need of fire-heat during mild weather. As successional plants are brought into warmth clear their soil of worms by applying lime water, and the drainage holes from soil or other material that impedes water from passing away freely.

Vines.—Late Grapes appear to possess the valuable quality of keeping well in a marked degree this year, and which the weather during the ripening period had considerable control over. Experience teaches us that this property is always more abundant in fruit that is grown and ripened during a dry sunny season than in a dull wet one, however skilfully artificial heat may be employed, and that those ripened late in the autumn rarely keep well. In order that the Vines of Alicantes, Lady Downe's, and other late varieties may have a proper period of rest before being pushed into fresh growth, their crops should be gathered, bottled, and placed in the most suitable room at command for the purpose not later than the first week in January; see that both the water and bottles are scrupulously clean, and that each of the latter contains some pieces of charcoal. Let no time be lost after the fruit is gathered in removing the litter, &c., from the surface of the inside borders, and giving them a thorough soaking of cold water. Outside borders, especially those formed of heavy soil and situated in wet districts, may still remain covered, to prevent them from becoming excessively cold by inclement weather, but they should be examined and watered if found to require it. The Vines should be at once pruned, have their wounds dressed with Thomson's Styptic, and be thoroughly cleansed in the manner previously described at p. 335, while the glass and woodwork of the houses should be washed clean, and the walls coated with whitewash newly made of quick-lime. This done, the inside borders should have the surface soil removed, and be firmly top-dressed with a compost of which about a fifth part should be sweet, fibrous, fairly heavy loam, the remaining portion being formed of bone-meal, old mortar, finely broken, and wood-ashes, or charcoal, in equal parts. The outside borders should have been similarly treated before being protected in the autumn. The temperature of the early house should be gradually increased as the growths develope, allowing a fluctuation of a few degrees in accordance with external conditions, the Vines be tied in their permanent quarters as soon as all their buds burst, and disbudding be proceeded with when the most fruitful shoots can be discerned. A successional-house may be now closed, and be treated in conformity with the directions previously given for the first house. *Thomas Coomber, Hendre Gardens, Monmouth.*

Florists' Flowers.

The Auricula.—I find at this season of the year, when the larger leaves are dying off rapidly at every spell of severe frost, that there is considerable danger of the wet decaying leaves causing the main stems to decay, if they are allowed to rest too long against them; the danger of this is greatest amongst the off-sets taken off and potted late in the summer. Some of these are very small indeed, with scarcely sufficient roothold to keep them steady, and it is necessary when removing the leaves to keep a thumb or finger pressed on the ground close to the plants to retain them in the pots. Some of these plants when in their winter growth are nearly lost to sight, but when they start into growth early in February, after a good winter's rest, it is marvellous to see the rapidity with which they develope fresh green leaves. The small seedlings raised from seeds sown as soon as they were ripe have now formed a mass of plants, a hundred or more in a 5-inch pot. These small seedlings do best on a shelf near the glass in a greenhouse; in that position the small plants can be pricked off as soon as they become large enough, and this I have done in every month during the winter. There is less danger of their damping off, after they are pricked out than there is while they are in the seedling pots. A dozen plants should be pricked out in a small 60 sized pot. The lower portion of the soil should be the ordinary Auricula compost; about half an inch on the surface of fine sandy soil is enough to prick the young plants into. It is interesting too, even now, to see the compact crowns and various shades on the foliage, pure white, as in Sapphire and other densely mealed types; the form of the foliage is also interesting to the fancier. The plants must be kept quite free from greenfly by fumigating. The right thing for a fancier to do is to begin the raising of seedlings as soon as he has two good varieties to work with. Silvia, now being sent out by Mr. Turner, of Slough, was raised by crossing Robert Trail and George Lightbody soon after I began to grow Auriculas.

Carnations and Picotees.—Growers of these would do well to observe the great amount of damage done to plants infested with greenfly in the winter. The pest does not increase much, if at all, but neither do the plants grow, and if the fly is not removed it sadly cripples the plants, besides smearing the leaves with a black sticky mass. At p. 622 instructions are given as to the amount of water required. See that the plants are carefully picked over and the surface of the soil slightly stirred up when it is necessary to do so. In less than a month a batch of cuttings of Tree Carnations may be put in. These early cuttings generally give the most valuable plants. They form by the end of the following autumn large bushy specimens in 8-inch pots. The new dwarf varieties will probably in a few years disestablish the tall-growing kinds. Mr. Turner exhibited a group of the dwarf kinds showing rich and varied colours. A large plum-purple kind seems a great acquisition, and another, with a distinct scarlet shade, is worthy of extensive cultivation. These have their "grass" or young growths round the base of the stems, and will be more readily propagated by layers. It is the small side growths that are formed on the stems of the tall-growing kinds that do best in the form of cuttings, and these form roots most readily with a gentle bottom-heat and a square of glass laid over them. The flowering plants still produce a succession of useful flowers for cutting. In the dry warm atmosphere, where the flowers open best, the growths, if not watched, soon become covered with greenfly. Sometimes we dip them, and at other times dust with tobacco-powder.

The Hollyhock.—Many persons seem to be enquiring after healthy plants of this grand autumn flower. It is certainly very trying to have to fight against the troublesome disease, which seems always lurking amongst the plants, ready to fasten on the leaves and to destroy them utterly whenever the weather is favourable to its development. I was told of one grower who buried his plants in a bed of leaves partially decayed, through which the growths came up clean from infested plants. Our own plants were free from the disease all through the summer and autumn; but it appeared on some of them very late, when the flowering season was quite over. This year the plants are all being left out in the open ground, where they flowered. I am anxious about the result of this experiment. A severe winter will doubtless destroy some; but if it also destroys the deadly fungoid growth we can spare a few of the delicate constitutioned sorts, and raise seedlings from a healthy strain. Seedling Hollyhocks saved from the best varieties will produce flowers as good if not better than the parents in at least 25 per cent. of the produce. *J. Douglas.*

The Hardy Fruit Garden.

Any alterations or repairs about the kitchen garden walls, where they have been up some years, and the nails driven into the bricks instead of the joints, should be seen to. They often present an unsightly appearance, and the holes in the walls become breeding and hiding places for insects. Where this is the case the most effectual plan is to cement the wall all over with Portland cement and sharp sand, in the proportion of one of the former to three of the latter. Studs with eyes can be driven into the wall before the cement sets—for Peaches and Morello Cherries every second course of bricks, but for Pears it is better every third course, which will be 9 inches apart; into these eyelets galvanised wire can be strained afterwards, taking care to have terminal holdfasts for straining the wire. A most important thing is good copings. Where wood is plentiful a temporary coping can be made a foot broad, to put up during the spring months; to this can be suspended curtains or netting to protect the blossom, and more especially to guard it from hail and sleet, which is invariably followed by frost, and it is then when the mischief is done; but the most perfect coping is a projecting one of iron and glass, which are weekly advertised in the *Gardeners' Chronicle*. They are made of various widths, from a foot to a yard, according to the height of the wall. Their advantages are many, and not the least is that they admit light, and during summer can be removed when the night dews are beneficial to the foliage of the trees. Where new walls are in contemplation the foundations can be got in, and the wall built to the surface of the soil, but there it must remain till March, because, were the wall built now, the frost will shake the mortar and render the walls anything but satisfactory. The trees could in a case of this kind be potted or planted in rough boxes or crates and transferred to the borders as soon as the walls are completed. In the case of old walls we have found it possible to secure horizontal trained Pear trees to the wall by driving in large clout nails and fastening the branches by rope yarn. Where the ground slopes down towards the fruit tree border a good drain should always be placed at the edge, at least a yard deep, and be provided with gratings to catch the surface-water off the walk. Push forward the pruning and nailing of all kinds of fruit trees. The extraordinary mild weather is favourable for this, and nailing is much better performed when one is not finger-cold. *J. Rust, Eridge Castle, Sussex.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Dec. 22	Sale of Dutch Bulbs, Plants in Flower, and Lilium auratum, at Protheroe & Morris' Rooms Sale of a Collection of Hardy Bulbs and Roots, at Stevens' Rooms.
TUESDAY,	Dec 23	Special Sale of Flowering and Imported Orchids, at Protheroe & Morris' Rooms
WEDNESDAY,	Dec 24	Sale of Border Plants and Dutch Bulbs, at Stevens' Rooms.

THOSE who complain of the UNLOVELINESS of LONDON STREETS do not do so wholly without cause, but if they are able to recall what they were some quarter of a century ago, and at the same time remember how vastly the town has increased since that time, they will not be disposed to despair. On the contrary, they will see much ground for hope. Twenty years ago there was no Thames Embankment, the squares, except in certain West-end districts, were mere cat gardens, surrounded by mouldering fences and old broom-like hedges; the parks were neglected, street planting was all but unknown, recreation grounds did not exist. At that time there was a very prevalent impression that it was of no use to plant anything in so smoke-laden an atmosphere—that if the attempt were made it would be sure to be frustrated by the mischievous depredations of urchins, or the wanton destruction exercised by the roughs. True, there were here and there, even in the most crowded streets of the City, isolated trees which were pointed to as something wonderful. These still exist for the most part, and, allowing for age, are no worse now than they were then. Even now they may be found in the most unlikely spots, and it is not long since a correspondent directed attention to a singular tree growing within a few strides of the *Times* office, and which we ascertained to be the Ptelea trifoliata, a tree more remarkable as a curiosity than for its beauty, though when bearing its Hop-like fruits, not entirely devoid of good looks. But since the time we speak of great advances have been made, the river bank from Westminster to Blackfriars, from Westminster to Lambeth, and on the other side at Chelsea, has been planted with, for their size, noble Planes; and here and there along these long lines open spaces and gardens have been provided. Northumberland Avenue, Trafalgar Square, Gray's Inn Road, and other thoroughfares, have been planted with trees. The lawyers of the Temple, not generally credited with over-abundance of sympathy, have belied their traducers by generously throwing open, at certain times, their quaint, reposeful gardens, to the infinite satisfaction of thousands of people of all classes. Further East, the Bow Road is lined with trees which for the most part are doing well. The Metropolitan Public Garden, Boulevard, and Playground Association, whose second annual report is now before us, has done good service in making attempts to secure large and small plots of available land, disused burial grounds, squares, and the like for the public use. Open spaces where nothing beyond can be obtained are of no little value, but where the space allows of a few trees being planted, or a few seats being placed, the boon is great beyond what our country friends can imagine. Any space where the young, the feeble, the merely wearied, can escape but for a few moments from the dust and din of our crowded thoroughfares is an almost unmixed benefit, and when the repose can be enhanced by the sight of verdant foliage and spreading trees an amount of good to mind and body is procured at an expenditure almost infinitesimal in proportion to the accruing advantages. The Society we have mentioned points out that there are within the metropolitan area no fewer than 404 burial grounds, of which forty-one are open to the public as gardens, twenty-seven are unbuilt over, eight are offered as building sites, twenty-one are still in use as burial grounds, ninety-seven have been built over, while 210 still remain closed for burial purposes, but inaccessible to the public, though still unbuilt over. It is now illegal to build over these disused burial grounds, and every effort should be made to utilise them for the benefit of the living.

Vast as is the task still to be accomplished before London streets and courts can be sweetened and beautified by foliage, resting-places found for the weary, and playgrounds for the children, enough has been done to shatter the old prejudice that trees will not grow in London. Given appropriate soil, free from contamination by gas-leakage, and assuming the selection of the right sort of tree, there is no physical reason why miles and miles of our streets, and acres and acres of courts and squares and open spaces may not be planted. It is not a case for elaborate ornamental gardening; that would often be out of place, and would be likely to result in failure. Let those who want that pay for it themselves. The simpler requirements of health, repose, and beauty can be met without lavish expenditure, and should be attended to by the local authorities and legal tribunals, already rightly jealous of selfish infringement upon GOD'S free gift of light and air.

The question of how to procure suitable soil is, indeed, often difficult of solution; the selection of appropriate trees is much more easy, and were it left to experts, who know what will do and what will not do in London, might easily be settled. The general belief seems to be that the Plane is practically the only tree for the purpose, but this is far from being the case, and the Plane, excellent as it is, is only available in large open spaces; to put it into narrow streets, where its roots have not room to spread, nor its boughs to stretch themselves out, is to court failure and induce ridicule. But there are Ailantus, Laburnums, Copper Beech, many species of Pyrus, Magnolia acuminata, the common Fig, Poplars, Ash, Tulip trees, Robinias, Willows, Maples, especially Acer dasycarpum, Naples Alder, and scores of others, that will succeed in London almost, if not quite as well as the Plane, and which, where not naturally of moderate stature, can easily be kept so. Limes, Elms, and Horse Chestnuts, so beautiful in the country, are not to be recommended as town trees in confined localities, nor can we recommend Thorns, though they are occasionally planted. Conifers are out of the question. Where shrubs are required thick-leaved plants like Hollies, Aucubas, Japan Privets, Skimmia, Osmanthus, Japanes Viburnum, Ligustrum coriaceum, and the beautiful but little-known Choisya ternata, all do well.

The choice in the most smoky and confined neighbourhoods is not such a very limited one as might be expected, but judgment is required to select the right tree for the right place. A knowledge of the size to which a tree is likely to attain, a sense of proportion and fitness of things, such as the average vestryman is not likely to possess, are imperative requirements. Moreover, supposing the trees to be planted, some care is necessary to protect them, to prevent their being blown over by wind or otherwise injured, and it is just this care and maintenance, really trifling in amount, which are so often wanting in our urban and suburban streets.

An enterprising builder with an eye to frontage runs up a lot of houses with forecourts; he sticks in trees at a considerable cost by the road-side; it is a question whether they are even staked; if they are, the ties become loosened, the guards, if ever used, fall to pieces, the trees are barked by the teeth of the butcher's horse, or slashed with the knife of the baker's boy; a breeze springs up, snap goes the tree, or it is blown out of the perpendicular, and there it is allowed to remain—a ghastly monument of carelessness and folly. This may be seen in almost any suburban road near London. Contrast this with some streets in the more densely populated parts of London, where private enterprise and judicious carefulness have produced quite other results. Take some parts of Chelsea, for instance—we do not allude to the recently planted Embankment, but to parts of Oakley Street, Margaretta Street, and other adjacent streets. Here, in spite of steam-rollers, which have in some cases crushed and bruised the roots, and caused the consequent death of some of the branches, yet the avenues of Robinias or False Acacias are doing remarkably well. Their size is not likely ever to be disproportionate; they will give shade where it is wanted and not shut out the light from the upper rooms. The graceful feathery foliage and pleasing green colour form a welcome contrast to the hard lines of the buildings and to the red bricks of which they are constructed. A similar avenue at Turnham Green, of course under more favourable circumstances, attracts much attention from those who see it.

On a large scale there may be a difficulty in procuring, at a moderate cost, appropriate trees in sufficient abundance, but where the numbers required are relatively small a visit to a good tree nursery would reveal scores of trees of moderate stature, power of endurance and fitting "habit" that would not encroach unduly on the footway or the roadway, which would not shut out light or induce unwholesome moisture, which should be of a form that should either harmonise or contrast with the adjacent buildings, according to circumstances and taste, and which might be had at a moderate cost. Where the space is large, and the means at command ample, of course the resourches available are proportionately larger. But in any case, with a really very moderate expense and judgment, and a minimum expenditure of subsequent care and attention, miles of unsightly streets might be rendered grateful to the senses and healthful to the inhabitants. If Planes must be used always—for which, as we have said, there is no real necessity—they might here and there be pruned to form delightful covered walks such as are so grateful in Italian cities. We are not advocates for topiary work of this character, as a rule, we have too much love and respect for the noble works of Nature to look on their mutilation with indifference, but there may be circumstances where, for the sake of pleasing shade and repose, we might be content to sacrifice something for the sake of comfort.

—— CHRISTMAS ARRANGEMENT.—Owing to the fact that Christmas day falls on Thursday next it will be necessary for us to publish the paper on Wednesday, December 24, instead of on Friday as usual. Correspondents are therefore requested to be so good as to send in any manuscript intended for publication that week not later than Monday next, December 22.

—— OUR CHRISTMAS NUMBER.—With the number for the following week we propose to issue as a special supplement a large double page engraving of the magnificent rock garden at Stancliffe, Derbyshire, the seat of Sir JOSEPH WHITWORTH, Bart.

—— SMILAX ASPERA.—The Smilax of which we publish an illustration (fig. 134) is a very beautiful half-hardy evergreen climber, well suited for conservatory decoration. It was sent to us by Mr. BURRIDGE under the name of Smilax tamnoides, but as we were unable to identify it with any species that has received this or a similar appellation, we applied to M. DE CANDOLLE, the monographer of the genus in question, who in reply to our enquiry says that it is one of the many forms of Smilax aspera allied to the forms genuina and mauritanica. If the plant is of considerable size (as we believe is the case), it is probably S. aspera var. mauritanica, but the gradations between the two forms are numerous. The group comprising S. aspera



FIG. 134.—SMILAX ASPERA, VAR.: FLOWERS GREENISH-YELLOW, FRAGRANT.

and S. pendulina is very distinct in having sessile fascicles of flowers arranged in long spikes. S. aspera is widely diffused in the Mediterranean region, Northern Africa, and India, and presents a well-marked swelling (in the dry state) at the apex of the leaf-stalk, while in S. pendulina, from Madeira, this swelling is not obvious, but the nerves of the leaf pass gradually into the stalk without the intervention of any swelling. The plant from which our figure was taken was grown in a cold greenhouse at Sutton, Co. Dublin, by Mrs. L. LAWRENSON. It is, we are informed, planted out in a shady corner of a cool peat bed, and is trained up the side wall and roof. Its leaves are useful in all seasons for cutting, and they endure fresh in water for many weeks. The species of Smilax bear their greenish male and female flowers respectively on different plants, the female flowers being succeeded by a roundish purplish berry.

—— "ZINCONIA."—In this material we have a translucent material very suitable for shading flowering plants and Ferns during the summer, or for making temporary roofs for Sikkim Rhododendrons that may be growing in beds in the open. It is ordinary perforated zinc plate, the holes being filled in with some kind of gum or varnish, which stands moisture well, but has not been tried in warm sunshine. It is much lighter than glass, and is easily fixed on wooden framing. The maker is W. KENNEDY, 7, Robertson Street, Glasgow.

—— WHAT IS AN AMATEUR?—We are informed that the National Rose Society has in its byelaws

defined an amateur as one who does not habitually sell plants or flowers. We are afraid this decision will lead to disputes as to the meaning to be attached to the word "habitually." An ordinary dealer does not wait till he receives an application for his produce; but he puts up a board on his gate, or a brass plate on his door, he advertises (that is, he ought to do!), he publishes his catalogue and he diffuses it broadcast, and he sells to all and any. An amateur proper does none of these things, though he may not be disposed to say No to an offer that is made to him by a friend. Still, if he would preserve his amateurship pure, we would advise him even under such circumstances not to say Yes too often, and to be particular not to employ "habitual" assistance.

—— THE "BOTANICAL MAGAZINE." — It is a matter of interest to note to whom the successive volumes of this publication are dedicated. This year the honour falls on Mr. JOHN BALL, a former President of the Alpine Club, and well known for his writings on the vegetation of the Alps and of Marocco.

—— KÖHLER'S "MEDICINAL PLANTS." — The coloured plates of this work, devoted to medicinal plants, are the best we know of—true to Nature and correct as to detail. The price is remarkably low.

—— THE "TECHNICAL JOURNAL." — Messrs. WARD & LOCK have issued the first part of what promises to be a very useful journal for workmen. Its aim is to place before the reader in clear and intelligible language, aided by all the fulness and completeness of graphic illustration, the practical details of the leading handicrafts and trades with which the industry of man is concerned. In subsequent numbers the landowner, the farmer, the gardener, and the market gardener, will find the principles and the practice of the general methods of making land profitable, while the land drainer, the irrigator, and the road maker, will also be catered for. One feature of the publication will be a "cyclopædic technical dictionary," in which the leading technical and trade terms will be fully explained, their derivation traced, and their equivalents in German and French noted. Such a publication can hardly fail to be of great value.

—— CHANGES INDUCED BY CULTIVATION. — Interesting examples of the leaves of Sagittaria montevidensis were exhibited by Mr. W. T. THISELTON DYER before the Linnean Society, on December 4. The small leaves were from a plant raised from seeds collected in Chili by Mr. JOHN BALL, F.R.S., and sent to Kew in 1883; these were grown in a pot half submerged in the Nymphæa tank. The enormously large leaf and spike were those of a plant raised from seeds ripened at Kew and sown in the spring of 1884. When strong enough the plant was planted in a bed of muddy soil, kept saturated by means of a pipe running from the bed to the Nymphæa tank. The changes thus induced were so great and remarkable as regards size and general facies, that without exaggeration, and if their history had not been known, they might have been deemed plants of widely separate genera.

—— MR. BOCKETT'S ORCHIDS.—Many of the cool Orchids formerly the property of the late J. S. BOCKETT, Esq., of The Hall, Stamford Hill, fetched high prices at the auction sale at Messrs. PROTHEROE & MORRIS' Rooms, on Tuesday and Wednesday last —a fine plant of Odontoglossum Andersonianum, £11 0s. 6d.; Cypripedium albo purpureum, £4 14s. 6d.; a Cœlogyne cristata, £4 14s. 6d.; C. Lemoiniana, £4 14s. 6d.; Odontoglossum Chestertoni, £8 18s. 6d.; a Masdevallia Harryana, £5 10s.; a yellow ground Odontoglossum, with the spotting of O. Pescatorei, fetched £53 11s.; another O. Alexandræ excellens, £11 1s.; O. mulus, Bockett's variety, £23 2s.; an O. Alexandræ in flower, bringing 13 guineas; and O. A. guttatum 10 guineas; two Epidendrums Imperator, a scarce, beautiful species, brought 7 guineas each. The total amount realised at the well attended sale was £1150.

—— GROWTH OF TREES AND PROTOPLASMIC CONTINUITY.—A communication on this subject by Mr. ALFRED TYLOR was read at the meeting of the Linnean Society on Dec. 4. Experiments were related concerning the curvature of branches, particularly those of the Horse Chestnut. The author pointed out that the terminal bud of the side branches is constantly directed upward, but is straightened out at a later stage of growth. Further, he found that terminal buds, when directed by being tied against a tree trunk, or plank, invariably turned away from the obstruction irrespective of the incidence of light. When the growing points of neighbouring branches were turned directly towards each other they mutually turned aside or one stopped growth. Mr. TYLOR conceives the necessity for some co-ordinating system to enable the parts to act in concert, and attributes this to a continuity of the threads of protoplasm. The paper was illustrated by diagrams and photographic slides shown by the oxyhydrogen light.

—— THE ROYAL BOTANIC SOCIETY OF LONDON: SPECIAL PRIZES FOR AMARYLLIS.—An amateur, anxious to encourage the cultivation of this fine race of plants, offers the following prizes to be competed for at the Royal Botanic Society's first spring show, on Wednesday, March 25, 1885. All these classes are open:—

A.—For the best seedling. 1st prize, £2; 2d prize, £1.

B.—For the best six Amaryllis, named. Preference will be given to the collection that contains the best proportions of light and dark varieties. 1st prize £2; 2d Prize £1.

C.—For the best variety selected from among the plants exhibited in Class B. For the best dark variety, £1; for the second best, 10s.; for the best light variety, £1; for the second best, 10s.

Fine form and substance are the points especially aimed at. Colour will not be regarded unless two flowers should, in other points, be considered equal in merit; the better coloured of the two would then receive the higher prize. These prizes will be awarded only on condition that the exhibits are considered to be of sufficient merit. All other conditions and regulations will be those of the Royal Botanic Society, and carried out by its officers.

—— FLOWER BOXES—The committee appointed by the Council of the Royal Botanic Society to award the Silver and Bronze Medals for boxes for carriage of cut flowers by Parcels Post, report that they advertised certain conditions to be complied with in competition for such medals. Eight manufacturers submitted sample boxes of cardboard, wood, and metal, both folding and rigid. The committee awarded the Silver Medal to Messrs. R. HALL & SON, of Hammet Street, Minories, E., for a tin box, 15 × 9 × 6 inches, costing 9s. 6d. per dozen, well made and strong, capable of holding about 2 lb. of cut flowers; and the Bronze Medal to Mr. J. W. HOFFMAN, of 54, Junction Road, N., for a small tin box with lifting frame, furnished with elastic bands to hold single flowers or sprays, the ends of the stalks dipping into damp moss at the bottom of the box.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have good reason to believe that the amount required to increase the pensions has been obtained, and it is a matter of no little satisfaction that this happy result has been brought about, to a large extent, through the exertions of the gardeners themselves. It has been particularly gratifying to find that the young gardeners and others, whose resources are not large, have shown their good-will by contributing according to their means. Some additional lists have been sent to us from various persons, but owing to the pressure on our space we are not able to print in detail any further lists of names of donors who have sent their contributions through some other source. It must suffice to say that Mr. OWEN THOMAS, of the Chatsworth Gardens, sends a fourth list of contributions, amounting to £14 7s. 6d.; and Mr. H. J. CLAYTON, of Grimston Park Gardens, a list amounting to £16 3s. 6d. Other sums received by ourselves are acknowledged in another column.

—— HONOUR TO AN EDINBURGH FIRM. — Messrs. THOMAS METHVEN & SONS, of Edinburgh, have just received a Royal warrant, appointing them nurserymen, seedsmen, and florists to Her Majesty the QUEEN at Edinburgh.

—— TAPEINOTES CAROLINÆ MAJOR. — There is a beautiful and characteristic figure of the typical plant in the *Botanical Magazine*, t. 5623, and the variety under consideration and flowering in the stove at Kew differs in no respect except the size, which seems more robust and vigorous. Whether this varietal difference is permanent or merely the result of favourable conditions in its cultivation, it is not unworthy of attention, seeing that such advances, if persevered in, may lead to some decided improvement. According to the most recent authorities the genus is now included in that of Sinningia, the members of which are exceedingly variable in minute particulars with regard to the shape of the corolla. It is white in this instance, very hairy, obliquely bent downwards and contracted near the mouth, and although not so conspicuous as a highly coloured one is at once striking and curious. The large and handsome leaves are red on the under-surface.

—— MEMECYLON RAMIFLORUM. — Few of these have been introduced to this country, although about 100 species are known to science, natives of several tropical countries, but abounding in Ceylon. The one under notice is a native of the latter island, as well as Mauritius. It forms a slow-growing, densely bushy evergreen, about 4 or 5 feet in height, and is accordingly well suited for stove cultivation. The intense green leathery leaves remind one of an Ixora, but the spreading branches are somewhat drooping in their habit, giving to the plant a more graceful appearance than Ixoras in general have. The flowers are freely produced in axillary clusters, and open successionally for months during the winter season. The rosy-pink globular calyxes resemble small berries, while the petals are of a deep violet. The young foliage is also beautifully tinged with violet. A specimen in flowering condition may be seen in the Victoria-house at Kew.

—— FATSIA JAPONICA.—Every one is familar with this plant as a first-class decorative subject that will withstand a great amount of bad usage to which plants used for this purpose are often subjected. But if we could acclimatise it so as to withstand the severity of our climate an immense gain for the outdoor garden would be the result. The great leathery palmately-lobed leaves would constitute it a fit subject to isolate as a specimen on the lawn. The effect of cultivation in a rich soil in the open air does not alter the size of the leaves to a tithe of the extent that it does in the case of its near ally, F. papyrifera. There can be no question, however, as to which will withstand the most cold. Plants of the former subjected to the severe winter of 1880—81 lost their leading buds, but broke freely afterwards. A fine specimen sheltered under the wall of the Orchid-house at Kew has stood out a number of winters, and has been flowering freely for some time. It is a much branched bush, about 4 feet high and a yard through. Only one other species is known inhabiting Japan and North-west America.

—— THE NEW DAHLIAS OF 1884. — It may be stated of the two firms to which florists look mainly for new varieties—viz., Mr. C. TURNER, Royal Nursery, Slough, and Messrs. KEYNES & Co., Castle Street Nursery, Salisbury—that while Mr. TURNER'S list of new show Dahlias was a very small one, consisting of only three varieties, Messrs. KEYNES & Co. had eight, about their usual number. But Mr. TURNER'S trio included undoubtedly the very best flower of the year—namely Hurst's Mrs. Gladstone. It is a floral honour of the highest value to be the raiser of this beautiful flower, so perfect in all the parts which go to constitute high-class quality, and of so deliciously soft and delicatea tint of colour! We saw it shown in not a few places, and always in its best character—it seemed so constant; it supplies a really constant delicate variety, much to the delight of exhibitors. Mr. TURNER describes it as of a delicate soft pink, but he admits it is a shade not easy to describe. No doubt the summer of 1884 suited it admirably, but with adequate protection it can be relied upon in any season. Mr. TURNER'S other new varieties were Muriel (FELLOWES), a clear yellow self, large in size and very constant, but inclined to coarseness. When in good form it makes a fine back-row flower in an exhibition stand. The third, Ruby Gem (HARRIS), has a ruby-crimson ground with a yellow tip, something in the way of a variety known as Stafford's Gem; close compact centre, fairly good outline; very pretty, but difficult to get in exhibition form. Of the nine show varieties sent out by Messrs. KEYNES & Co., eight of them were of their own raising, viz., Dewdrop, dark primrose, good petal and outline, but by no means attractive in colour; Lucy Berry, lilac, suffused with

white at the base of the petals—a fair flower, but wanting in size; Mrs. F. Foreman, a rich bright lilac self—a first-class exhibition variety, form excellent, centre high, large in size without coarseness, and in every respect a grand exhibition variety; Mrs. G. R. Jelford, deep yellow, rather above average size, fine centre, petal, and outline—a good useful variety; Mrs. W. Haskins, of a lovely shade of fawn, very pleasing in colour—fine form, distinct, and very pretty; Mrs. Staples, yellow, edged with crimson—a perfect model in point of form and finish, but too small for exhibition purposes; Statesman, rich bright crimson flushed with purple—a large and finely formed flower of the best properties, and very useful as a show variety; and Reporter, a deep crimson, or rich maroon self, of excellent properties, constant, and very useful. The ninth flower is Grand National (Eckford), a large yellow self, but certainly coarse; perhaps the season did not suit it. Of new fancy varieties Mr. Turner had but one to send out in May last, viz., Duchess of Albany, of his own raising—a charming striped variety, the ground colour pale orange, with rich crimson stripes; pretty, distinct, and of good form. Messrs. Keynes & Co. had two of their own raising, viz., Alderman, lilac, heavily striped and spotted with purple—a capital variety in all respects, and having a peculiarly dwarf habit of growth, certainly not exceeding 2 feet; and Goldfinch, yellow, striped with purple and tipped with white—very attractive in colour, but wanting in form, and therefore of little value for exhibition purposes. The remainder of the Salisbury trio is Lotty Eckford, white, beautifully striped with purple, charming in point of colour, good form, and very free. On the whole the new varieties of the year contribute some decided acquisitions. In the face of a formidable list of fine show and fancy varieties the improvement must of necessity be slower than it was formerly; but there is no lack of attempt, and in the long run this is bound to result in some substantial improvement. *R. D.*

—— Publications Received. — *Students' Elements of Geology.* By Sir Charles Lyell. Fourth edition. Revised by Dr. Martin Duncan.

—— The Weather.—Summary of temperature and duration of bright sunshine in the United Kingdom for agricultural and sanitary purposes for the week ending Monday, Dec. 15, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:—The weather has continued in a dull, unsettled, and rainy condition generally. Some hail or sleet showers were experienced at several of our westerly and northerly stations towards the close of the period, while in a few places lightning was observed. The temperature has been above the mean in all districts, the excess varying from 2° in "Scotland, N.," to as much as 5° or 6° over the greater part of England. The maxima, which were recorded in most places on the 13th, ranged from 58° in the "Midland Counties" (at Hereford), and 55° or 56° in nearly all other districts to 51° in "Scotland, N." The minima were generally registered on the 10th, and varied from 27° in "Ireland, S.," and 28° in "England, S.W.," to 34° in "Scotland, W.," and 38° in the "Channel Islands." The rainfall has been rather less than the mean over "E.," "Central," and "N.E. England," and about equal to its normal value in the "Channel Islands," but in all other parts of the kingdom a decided excess is shown. The bright sunshine has again been very deficient over the whole country. In most of the English and Scotch districts there has only been between 2 per cent. and 9 per cent. of the possible number of hours, and over Ireland between 12 per cent. and 16 per cent., while in "Scotland, N." the weather was again quite sunless. Depressions observed:—The distribution of barometric pressure has continued very similar to that of last week, pressure being highest over France, with rather deep depressions, travelling in a north-easterly direction outside or over our north-westerly and western coasts. Southerly to south-westerly winds have consequently been very general, and though moderate to fresh on most days, have at times blown fresh or strong gales on many of our coasts, while in the north of Scotland on the 14th the force of a whole gale was reached.

—— Gardening Appointment. — Mr. G. Wythes, as Head Gardener to Lord Hatherton, Geddesley Park, Penkridge, Staffordshire.

PLANT PORTRAITS.

Allium macranthum.—A tall East Himalayan species, with no bulbs, but with flat leaves and terminal umbels of lilac flowers. Introduced by Mr. Elwes from a height of 13,000 feet on the mountains of Sikkim, or Tibet. It is hence likely to be hardy, and to be one of the finest Alliums in cultivation. *Botanical Magazine*, t. 6789.

Begonia Madame Linden.—A new seedling raised by MM. Blancquaert & Vermeiren. The plant is of good habit, the flower-stalk short, stout, erect, with large, circular, reddish-scarlet flowers of large size and good substance, and showing a tendency to become double. Judging from the figure in the *Illustration Horticole*, t. 535, it is a fine variety.

Cereus Engelmanni. — A succulent, with an ovate, cylindrical, erect, unbranched stem, with thirteen prominent ribs, thickly beset with tufts of straight, spreading, whitish spines, and bearing medium-sized flowers of a rich rosy-lilac colour. The plant is figured in the last number of the *Gartenflora*, t. 1175.

Chamæladon metallicum.—An Aroid with tufted leaves, long reddish stalks, and ovate-acute, bronzy-green leaves, reddish on the under-surface. It is a native of Borneo, and is described by Mr. N. E. Brown in the *Illust. Hort.*, t. 589.

Dahlia Prof. Burvenich.—A show variety of good form and substance, and of a reddish-salmon colour. It was raised by M. Scalabre Delcour, of Tourcoing, and is figured in the *Revue de l'Hort. Belge.*

Dichotrichum ternatum.—A very remarkable climbing Gesnerad, emitting roots from the stem, and having leaves in pairs, the members of each pair very unequal—one toothed, broad, cordate ovate, the other very small, like a little ear. The peduncles are axillary, long, pendulous, bearing at the end a cymose umbel of upturned flowers, each with a small cup-like calyx and an irregularly funnel-shaped scarlet corolla, with a curved cylindrical tube about an inch long, and a flat 5-lobed limb. Native of Ternate, one of the Moluccas. *Botanical Magazine.*

Hydrangea petiolaris.—A Japanese species, of climbing habit, sending out adventitious roots from the stem. The leaves are opposite, on long hairy stalks, the flower-heads 8—10 inches across, with white conspicuous but neuter marginal flowers, and greenish fertile central ones, which present the peculiarity that the petals are coherent with a cap, as in the Vine. *Botanical Magazine*, t. 6788.

Kæmpferia ornata. — A tufted plant, with sheathing petioles, and linear lanceolate blades, 4—8 inches long, 1—1½ inch broad, deep green above, with a central silver stripe, and russety-brown on the under-surface. A highly ornamental stove foliage plant from Borneo, figured in the *Illustration Horticole*, t. 537.

Nidularium acanthocrater.—The spiny cup here indicated consists of a tuft of oblong-obtuse leaves, each about 18 inches long, with spiny teeth at the margin, and a strong spine at the tip, dark green with blackish spots. The flowers are inconspicuous, in dense clusters, surrounded by the leaves, the innermost, those nearest the flowers, being in some forms inky-black, at other times port-wine coloured; hence two varieties, the black, or bluish-black one called Proserpine, the rose-coloured one Pluto. The plant is figured in the *Belgique Horticole*, t. 9, 1884.

Phyllocactus crenata grandiflora×. — A hybrid between P. crenatus and Cereus grandiflorus. It is of dwarf habit, and with the stem of a Phyllocactus, while the flowers are more like those of Cereus grandiflorus. The latter is a night-flowering species, but the flowers of the hybrid remain open for two or three days and nights. *Gartenflora*, t. 1176.

Plectranthus fœtidus.—A tropical Australian Labiate, with coarse ovate crenate leaves, and ring-like clusters of lilac flowers in erect branching spikes, 2 feet long, "with a snowy coat of wool enlivened by the beautiful cobalt-blue of the corolla." *Botanical Magazine.*

Salvia paniculata.—A South African species with ovate toothed rough leaves and branching panicles of pale violet flowers. *Botanical Magazine*, t. 6790.

Tulipa Borszczowi.—One of the prettiest Tulips of the group to which T. oculus solis belongs, and which have the inner surface of their bulb-scales covered with hair. It is a Persian plant, with undulate leaves and crimson flowers, with acuminate segments. *Gartenflora*, t. 1176.

Vriesia Duvaliana.—Under this name M. Ed. Morren describes in a recent number of the *Belgique Horticole*, t. 78, a Brazilian species with small tufts of oblong-acuminate leaves, dilated at the base, and with a rosy-bronze shade, a tall, central, flat, elliptic flower-spike, with two rows of scarlet boat-shaped bracts and yellowish flowers with green tips.

ON POTATO DISEASES.

The disease which, by its dire destructive influence upon the Potato, has come to be universally designated "the Potato disease," is by no means the only affection to which Potatos are liable. Not only are the tubers liable to be destroyed by the fungus known to botanists as Phytophthora infestans, but several other causes operate to impair or destroy the value of this important food product, amongst which may be mentioned the following:—

A. Diseased conditions arising from causes affecting the growth of the plant itself:—1. Green tubers; 2. Hollow tubers; 3. Supertuberation.

B. Diseased conditions arising from causes external to the plant:—1. The Potato disease (Phytophthora infestans); 2. Wet rot (Bacillus amylobacter, Van Teighem); 3. Dry rot; 4. Scab; 5. Spotting or mottling.

This list might probably be much further extended, but for our present purpose it includes all the diseased conditions of the Potato to which allusion will be made in this communication.

Green Tubers.—The occurrence of green tubers needs no explanation beyond mentioning the fact that the earthing-up of the Potato plant, which is now the almost universal practice in this country, is commonly thought to be done, by those who trouble themselves to think at all about it, in order to prevent this greening of the tubers. In point of fact, it is a routine practice which has been found by experience to be the best mode of Potato culture. It is in reality the only means we possess of preventing the disease (Phytophthora) from attacking the tubers. I was much struck by the effectual manner in which Potatos are moulded in the gardens at Chiswick when I observed two rows so highly and neatly moulded last September that I mistook them for experimental rows grown on the Jensenian method, so carefully had the soil been patted down with the spade, until Mr. W. G. Smith assured me that this was the usual system of culture employed in the gardens.

Hollow Tubers.—This is another condition which need not detain us long. It commonly occurs in the largest tubers, and is simply a reversion on the part of the tuber to the hollow which normally exists in the other parts of the stem. If the cells forming the walls of the hollow be examined microscopically they will be found to be empty of starch, and present the appearance known as cork formation. If a tuber be cut across in which the hollow is beginning to form, it will very often be found that the centre of the tuber is brown in colour. This central browning has been mistaken for the true Potato disease (Phytophthora), but no mycelium of this fungus can be found in the cells of the brown spot; neither if tubers thus affected be sliced and placed under a bell-glass does any development of conidia take place. Moreover, if one of these tubers be kept for a few weeks no extension of the brown centre takes place. Although no conidia are developed from the brown centre when a section of an affected tuber is placed under a bell-glass, yet a growth of various moulds sometimes occurs, as has been observed by Dr. Masters. In some of the Adirondack tubers grown this year in the experimental plot at Chiswick Mr. E. Rostrup observed that a Ramularia had been developed upon the brown centre. Although Ramularia is a truly parasitic genus of fungi, yet it is obvious that much might have happened in the way of extraneous infection during the three or four weeks which elapsed between the time the tubers were bisected at Chiswick, and when Mr. Rostrup examined them in Denmark. The characteristic appearance of a Ramularia may be simulated by various non-parasitic species of mucedines, and hence I incline to the belief that the Ramularia noticed by Mr. Rostrup was an accidental growth, not in any way connected with the formation of the central brown discoloration.

DISEASED TUBERS (PHYTOPHTHORA).—Tubers affected with the mycelium of Phytophthora infestans present certain characteristics which it is important to remember. So familiar are we with this diseased condition that we are apt to regard every brown spot upon a tuber as the result of the presence of the mycelium of this fungus. The great characteristic of this affection is that it always—as was pointed out by Kühn * in 1859—commences on the exterior of the tubers, and extends inwards to a greater or lesser extent. This arises from the fact that the infection of tubers takes place, as De Bary † has shown, from the zoospores piercing the epidermis with their germ tubes and developing a mycelium which is characterised by the peculiar manner in which it produces the well-known browning of these tissues with which it comes in contact. More recently the same writer, in his paper in the *Journal of the Royal Agricultural Society*, in 1875, ‡ refers to this paper in the *Annales* as containing a full account of the subject, but makes no allusion to any desire to modify his views there expressed in any single particular. It has been asserted that the mycelium passes down the leaf-stalks into the stem; through this it obtains access to the other leaves, as well as to the underground branches, and through them to the Potatos themselves. This view of the way in which the tubers become affected has naturally been very generally accepted by English botanists; foremost amongst its supporters is Mr. W. G. Smith, but with the utmost respect for those eminent botanists who accept this view I venture to assert that De Bary's statement is the correct explanation of the phenomena in question. It does not appear that this view, current in Great Britain, has ever been supported by any experimental research whatever, whereas De Bary's views are founded upon a long series of the most careful observations. Further, the processes are easily observable by any one who cares to take the trouble to do so. The mere placing of the spores upon the surface of a tuber while it is still moist as it comes from the ground will be followed almost invariably by the development of mycelium in its interior. Mr. Murray informs me that he has even succeeded in doing this with such thick-skinned Potatos as Champion, a variety that has hitherto been regarded as being the most disease-resisting at present known. It is equally easy to demonstrate that the disease does not travel down inside the stem by enveloping a few inches of a healthy stem in cotton-wool, securing it so firmly above as to prevent water from passing down between the stem and the wool. If the plant be now watered with spore-charged water poured upon it through the rose of a common watering-pot, in a few days the whole of the plant above and below the cotton-wool will become diseased, whereas that part of the stem which is protected by the cotton-wool will be green and healthy. In a question of this kind, however, it generally happens that the mass of mankind accepts the statements which are generally accepted rather than appeal directly to Nature—an ever available source of information. Personally I never had the slightest doubt cross my mind concerning the truth of this British theory until I found that amongst Continental botanists it was not credited, but upon the contrary the views of De Bary were universally accepted. This led me to try the above experiments, which convinced me of the accuracy of the statements of the eminent Strasburg Professor. No one has up to the present published any experiments or observations, either in this country or abroad, as far as I know, tending to cast doubt upon De Bary's views. Whether any one will be found courageous enough to venture to do so remains to be seen: as the case at present stands the facts are all upon De Bary's side, theory only being against him. The appearance of the browning produced by the mycelium of Phytopthora is worthy of careful notice. It is not a diffused discoloration. The discoloration is deep, opaque brown, almost the colour of a Chestnut. The affected tissue is, as De Bary has pointed out, harder and drier than the healthy parts of the tuber. If a thin slice of an affected tuber be held up to the light the unaffected parts, being translucent, contrast strongly with the variously shaped diseased spots which are opaque; in a very thin slice these diseased spots will be seen to consist of an aggregation of small dark brown opaque specks of very various forms and sizes. The odour of the affected tubers is very little, if at all, different from that of sound ones. If they are kept in a dry place for a short time the diseased spots lose moisture by evaporation and shrink, so that their presence is shown on the exterior of the tubers by a number of irregular depressed places.

On placing a minute fragment of one of these browned spots under the microscpe the presence of the Phytopthora mycelium can readily be made out. The myceline tubes are rather large (8—10 mk.) in diameter, generally unseptate, and inter- rather than intra-cellular. If the tuber be but recently affected, its cut surface will produce from these brown spots conidiophores and conidia if it be placed under a bell-glass. It, however, according to my experience, soon loses this power, and I incline to think that the period during which it retains its vitality has been over-estimated. This conidia-producing capability is one of the best and most easily applicable tests which can be applied to a suspected spot, provided it be tried upon recently diseased tubers; the form of the conidiophores being so characteristic that, when once known to the observer, their identity can ever afterwards instantly be recognissd. A very convenient mode of applying this test is to cut a tuber in halves, and place each under an inverted wineglass. The cut surface will within twenty-four or forty-eight hours produce a crop of conidia if it is going to do so at all. After this crop has been once produced from the cut surface no more conidiophores will, as a rule, appear; but sometimes a second, although smaller, crop, may be obtained by removing a thin slice from the cut surface, so as to expose a fresh section to the moist atmosphere contained in the wineglass; but this does not always succeed. After conidia have been sown upon the cut surface of a Potato no change in colour of the Potato tissues is observable at first, nor for some days, until the mycelium has attained a certain degree of development. The time which elapses between the sowing of the conidia and the browning of the Potato varies according to the temperature at which the infected tuber is kept; for instance, at a temperature of about 75° Fahr. it will appear in about two days; at 60°, in about four; at 50°, in about ten days; at 45°, not until fourteen days. The discoloration, however, invariably ensues when infection has taken place. Shortly after the browning of the Potato tissues has taken place the mycelium gives origin to conidiophores, within a few hours at 75°, but not until after two or three days at 45°.

(*To be continued.*)

* Kühn, *Die Krankheiten der Kulturgewächse* (1859), p. 207.
† De Bary, *Annales des Sciences Nat.*, 4 series, vol. xx., pp. 57—61 (of the reprint), plate 5, fig 5 (1863).
‡ De Bary, "Researches into the Nature of the Potato Fungus," *Journal of the Royal Agricultural Society*, 1875, p. 239.

ORCHIDS FOR AMATEURS.

(*Continued from p.* 687.)

INSECT ENEMIES.—Now I am on the subject of insect enemies, I will mention those which are the greatest source of anxiety even to the most experienced cultivator, and which need the utmost vigilance to keep them under. The cockroaches, from the rapidity with which they destroy the young buds and roots, are most dreaded. There are about 300 known species of cockroach in the world; many are feeders on carrion and rotten material, both animal and vegetable, others are more dainty, and live upon the young juicy shoots of plants, and make great havoc amongst Orchids.

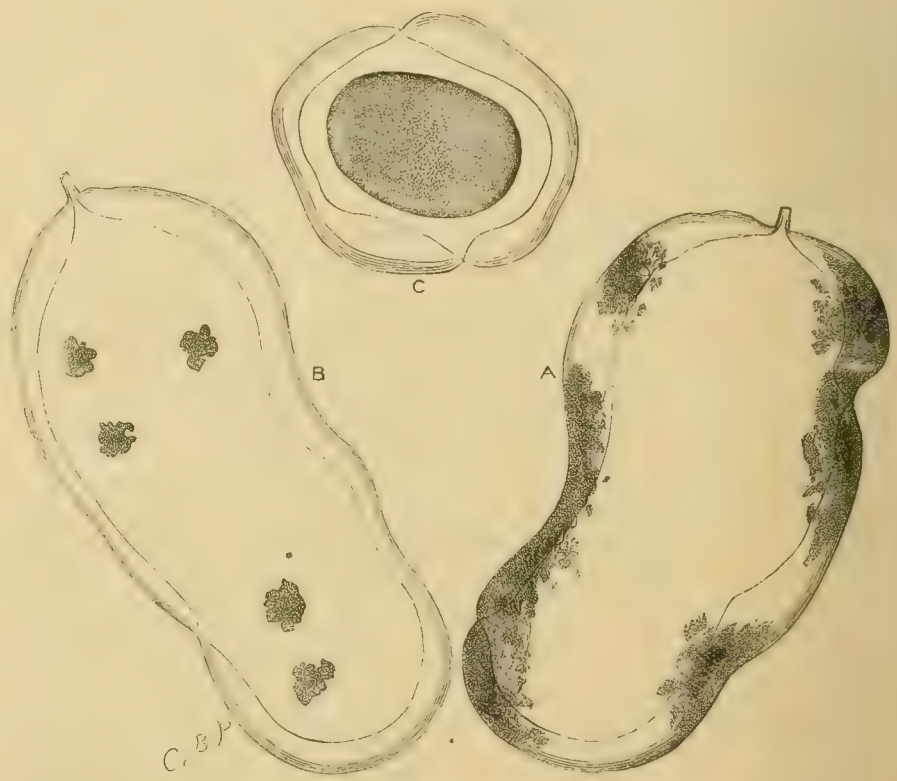


FIG. 135.—DISEASED POTATOS: A, FROM PHYTOPHTHORA; B, INTERNAL SPOTTING; C, DRY-ROT.

The common cockroach (Blatta orientalis), well known as the black beetle, is a carrion feeder, and my experience is that it is comparatively, if not entirely harmless. At one time I was in great dread of this insect, as I have a small greenhouse which it invaded in large numbers. I never found, however, that it did the slightest harm amongst the Orchids. The cockroaches imported with the plants, especially a very active large-winged species, of a pale chestnut-brown colour, with long antennæ, is exceedingly destructive. It is a native of the West Indies, and is now common in ships and in the docks. The small Norwegian cockroach is also, I believe, very destructive, and is sometimes found in numbers in England.

The cockroaches are difficult to destroy, as they are very active in a house with a high temperature, and they soon learn to hide themselves the moment any one enters the house with a light. If a plant appears sick and I suspect cockroaches, I put the pot into a pail of water, up to its rim and watch for the enemy. It will come out after a few minutes, and may be killed. Sometimes even this does not succeed, and the plant must then be turned out of its pot and

replanted. On one occasion I found a pair of West Indian cockroaches in a pot of Lælia which had baffled me for some days. The introduction of cockroaches is a danger in buying imported plants or others which have stood in a sale-room, which must never be forgotten. Now, I never put such plants into my collection without first carefully overlooking them.

Cockroaches can be caught in traps baited with powdered borax. I was at first very sceptical on this subject, but they certainly seek it with avidity, and die after eating it. The powdered flowers of Pyrethrum, known as Keating's Powder, is very efficacious in destroying cockroaches in dwellings, but it does not appear to have much effect in the moist air of a stove. It will drive these pests away for a little time, but cannot be depended upon.

I always keep several toads and a black and yellow tortoise in my house, and they are the most useful creatures in clearing it of all kinds of insects.

The tortoise is one of the Emydæ. They are known as marsh or river tortoises. They differ from the common tortoise, which feeds on vegetables, in being much flatter. My species is black, with yellow markings on its shell, and is the only specimen I have seen commonly exposed for sale, except the common Italian tortoise. It is very active, swims well, and lives in the tank in warm weather; in the winter and at night it wanders about amongst the plants, although it looks as if it were liable to hurt the plants. I have had it two years; it sits on the moss, close to the most delicate Orchids, and never crushes or overturns anything, not even the smallest pots. I consider it a most useful creature, and would

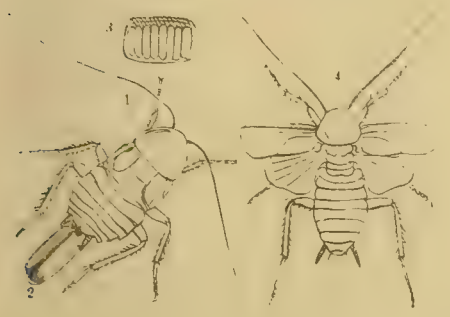


Fig. 136.—THE COCKROACH.

not be without it on any consideration. In winter it feeds itself entirely, but in summer it eats half an ounce of raw beef, cut into small pieces three or four times; and when it is hungry it draws the attention of any one entering the house to it by splashing about in the water.

Green tree frogs are also exceedingly useful, but they are expensive, costing from 2*s.* 6*d.* to 5*s.* each. The common frog does not do well in an Orchid-house when the temperature is too high. The tortoise is also a great destroyer of frogs, so that it should not be kept with tree frogs. It does not attack toads.

The most destructive creature in an Orchid-house is undoubtedly the woodlouse, and constant vigilance is needed to keep them under. They rapidly destroy the roots of the plants, and are an insidious enemy. Pieces of raw or boiled Potato put upon the pots attract these pests, and they are then easily killed. They do not like water, and are driven to the surface by immersing the pots to the rim. In this way they may be driven out and then killed. I scarcely ever see one now, but they are very prolific, and a single female soon stocks a house, if it is neglected. The young are very small, and very destructive; to kill them would be a hopeless task. But here, again, I call in the aid of a friend—a black spider, which hunts them day and night. This spider is one of the jumping spiders (Salticus coronatus?). It is jet black when adult, and has a pair of white arms (palpi), which it carries in front of its head; they look like a white crown. The back of the thorax has also a white margin. The young ones are brown. I first introduced this spider to my houses from a sale-room, where I observed it leaping about from plant to plant; now I have several hundreds. It makes a cocoon on or between the leaves, and if not disturbed several hundred young are soon produced; they become adult in a year, and should be cherished. They feed on greenfly, wood-lice, small snails, or slugs, and, indeed, on all the Orchid grower's small enemies.

I never kill any predatory beetles, as they are also good hunters, and every gardener should make himself acquainted with these. An hour or two spent with any entomologist, or in examining the Carabidæ and Brachyelytra in a museum, would enable the cultivator to recognise his friends, which chiefly belong to these groups. Earwigs are, of course, much to be dreaded, and must be destroyed, as they eat the young shoots. Crickets, as far as I can see, do no harm.

A large black weevil enters the house sometimes at night in summer, and eats the flowers, especially those of Phalænopsis. It is an enemy which I know no way of avoiding except surrounding the plants with a net, or guarding the ventilators in the same manner.

To return, however, to the atmospheric con-



Fig. 137.—THE WOODLOUSE.

ditions, of which I was writing in my last. The experienced cultivator knows the moment he goes into a house if the air is in a proper state, by his own sensations; yet I have often known market gardeners and others who ought to know better keep the air of their houses arid and scorching, especially in winter. I am acquainted with one man whose houses feel to me as hot and dry as the Syrian desert, and this in spite of all remonstrance. He says his plants fail because he is too near London; but I am much nearer, and mine succeed.

The air in an Orchid-house needs to be kept moist by a tank. My house is 22 feet long, 12 broad, and 9 feet high in the centre. It is divided into two equal parts by a glass screen; a tank 12 feet long, 4 feet broad, and 3 feet deep runs up the centre of the house.

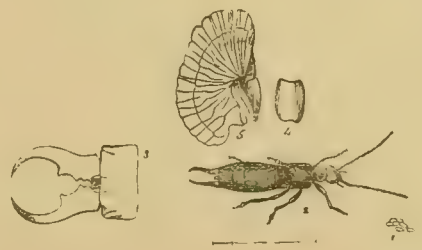


Fig. 138.—THE EARWIG.

The house stands north and south. It is heated by an 18-inch saddle boiler, and has ten 9 feet 4 inch pipes with the necessary bends and syphon ends under the benches. Six of these are in the south division, and four in the north. Besides this, a small coil of 2-inch pipes is placed in the tank, and controlled by a valve. The water from the roof is collected in two barrels outside the house; these communicate with the tank, so that I have a good supply of rain-water. This is admitted at the cool end, and is heated by the coil before it reaches the hot end. When I began I found the water soon become foul, but this was at once obviated by putting a peck of wood-charcoal into the tank, and the water remains now perfectly sweet, although the tank has not been cleaned for two years.

The house is ventilated by shutters in the wall under the benches—6 inches by 15 inches—and by windows in the roof. In such a house four windows, two on each side near the top, 15 inches by 24 inches, would be ample. Mine are larger, but I find them inconvenient, and unnecessarily large. I believe good ventilation very essential to success, but cold air must not be admitted directly to the plants, or they will assuredly fail. Except in warm weather I admit air below, so that it is warmed by the pipes before arriving at the plants. I also have evaporating-pans on two of the pipes in the warmest part of the house, and I use them whenever there is any great difference of temperature inside and outside; also in summer, when the top-lights are open, but not when they are closed.

B. T. L.

(To be continued.)

The Arboretum.

Outdoor Shrubs.—Although the variety of foliage and flowering hardy shrubs is much greater than appears to be generally made use of, this variety may be largely added to in the milder parts of the country by trying out-of-doors some kinds of doubtful hardiness.

Were a collection of alpine plants limited to kinds not liable to be killed by slugs, the variety and beauty of such collections would be greatly lessened, yet for one plant killed by frost in favourable situations a dozen or so are probably killed by slugs. In planting trees of doubtful hardiness there is the drawback that in after years the loss of a tree in a prominent situation may seriously injure the general effect of its surroundings; but the same objection applies with far less force to shrubs, which can be more easily replaced.

The climate of south-eastern Ireland, especially within a few miles of the sea, seems well suited for evergreen and other shrubs, though probably less so



Fig. 139.—STAPHYLINUS, "THE DEVIL'S COACH-HORSE," PREYS ON ITS NEIGHBOURS.

than the south-west of both England and Ireland. East wind is the chief drawback, but though it often injures it seldom kills shrubs, unless they are transplanted in spring. Various Bamboos (with different generic names) thrive well; also some Indian Hypericums, and the beautiful H. triflorum, which has proved quite hardy near Dublin, although it is to be found in the very different climate of Java. Amongst the most interesting experiments are those of some of the hardier New Holland and New Zealand shrubs, as some of these, especially the former, appear to be just on the border-land, as it were, between success and failure. Cordyline australis in a hard winter runs a good chance of being killed to the ground; yet who for this reason would willingly have a garden on a rockery without it? Though some of the shrubby Veronicas are perfectly hardy, others are killed in exceptionally cold winters. Sophora tetraptera (Edwardsia microphylla) has, in a well-sheltered nook in this neighbourhood, grown into a tree 20 feet high or more. Its yellow pea-flowers, and foliage so like the leaves of Asplenium viride, make it worth growing.

Mr. Smith, of Newry, on seeing the somewhat sheltered position of our garden, suggested the experiment of trying a few Australian shrubs out-of-doors which are usually grown under glass, and though a sharp frost in December, 1882, was a rather severe test during their first winter, most of them stood it well with but slight protection, and some plants requiring glass at Comely Bank, near Edinburgh, have also stood our climate well. One here and there was killed to the ground, but hardly one shrub has been killed outright.

Perhaps as good a test plant as any for such experiments is the common Myrtle. Where it can be grown out-of-doors many a half-hardy shrub may be tried with good chance of success. A plant of Pittosporum tenuifolium, about 5 feet high, is singularly effective, with its dark stems and light green ever-

green foliage; P. eugenoides is also very good; Carmichelia australis has quaint leaf-like branches; Hakea microcarpa, Callistemon lanceolatum (which seems rather less hardy), Hymenanthera crassifolia, Raphiolepis ovata, with its thick leathery leaves, the Holly-leaved Olive, and Griselinia littoralis, may claim a place amongst fairly hardy evergreens. Some of the Coiletias seem hardy, but are more curious than pretty; as is also Coccoloba platyclada, which is, however, interesting from belonging to the flora of the Solomon Islands. I am not, however, sure as yet whether this latter is hardy here. The beautiful Myrtle-like Eugenia Ugni is worth a place in every collection, its flowers almost equalling those of the Myrtle in beauty, though not in scent; and Leptospermum lanigerum is another flowering shrub well worth growing in the hope of its blossoming freely when well established. The foliage of Grevillea rosmarinifolia is well described by its specific name. Though not an effective evergreen, its flowers are so singular that a specimen of it should be grown. It is flowering here in December out-of-doors. It had a slight protection, however, the last two winters, but probably did not require it. Mitraria coccinea is less hardy: one plant died in December, 1882, and another plant was killed to the ground, but its pretty crimson waxy flowers make it worth more than one trial, one or two failures being by no means conclusive, for it is curious how slight a difference in situation makes all the difference between success and failure. In December, 1882, for instance, one small plant of Abelia rupestris was killed; another, a few feet off, was uninjured. Much also depends on the strength of the individual plant. It is surely well worth while to risk losing a choice shrub now and then for the sake of the interest and beauty which may be added to collections of out-of-door shrubs, perhaps for many successive years, by admitting some of the more tender kinds.

The few shrubs here mentioned have so far been fairly successful, yet a sharper frost than that in December, 1882, is exceptional here, and the east winds of spring, 1883, were much worse than usual. But much depends on the plants being well hardened off if planted out-of-doors for the first time in autumn, or if planted in spring it should not be done till fear of harsh weather is over.

The rapid growth and beauty of foliage of Azara microphylla give it a high place amongst evergreens; two or three other species are also hardy here. Myrica pennsylvanica, with bright evergreen foliage, sweet-scented when bruised, is good; as is also the evergreen Hypericum balearicum, with its small, crumpled, shining leaves, and red curiously warted stems; although it appears to flower less freely, or to require to be longer established before doing so, than most Hypericums. Where Desfontania spinosa can possibly be grown it should be by no means left out, as with its Holly-like foliage and waxy scarlet and yellow blossoms it is a beautiful plant. Erica arborea grows into a good-sized bush in this neighbourhood, and survives all seasons. As a winter flowering shrub Coronilla glauca deserves a well-sheltered nook by a wall, but the most sheltered corner of all can hardly be better filled than by a good bush of Lemon-scented Verbena. *C. M. Owen, Knockmullen, Ireland.*

The Herbaceous Border.

HARDY MEGASEAS.—For many a long year I have loved to look on these plants; there has always been something so irresistibly attractive about them that many a time I have put down my pencil and made a hasty visit to the border in my garden where my favourites were located. Was it the blossom? No, not that altogether. Or the foliage—or what? Well, I could scarcely tell what it was, but go when I would (ay, even now), I always derived pleasure. The finest of the group that I possess is one that I had by the name of Megasea crassifolia grandis. The leaves of this colour in winter with purple and scarlet, and to my eye, longing to admire, they are intensely beautiful. Then, in the spring, when the bright pink blossom is upheld 2½ feet from the ground by a carmine-vermilion stem that may be seen afar, shining like a pillar of fire, to me there is nothing to compare with it. Next in beauty is cordifolia purpurascens, the flowers a rich purple, the foliage deep bronzy green. Then there is the bright pink ligulata, major and minor; then Stracheii, with me white, or nearly so; the sibirica has inferior flowers, but the leaves are an excellent foil to lighter growing plants. Ciliata I do not care about, as the leaves die off in winter; so with pulcherrima: yet both of these are beautiful in a cool-house. Still, as I am writing of the hardy varieties, I put them aside. By the way, I have omitted one—crassifolia minor; this makes a nice edging for large beds, besides being worthy of attention as a single plant. It is curious how some things fascinate, and yet why we scarcely know; one takes to the Picotee, another the Pansy, another the Auricula, so much so that they feel that they must have a collection of them; all that are good are to them lovable, so I feel I may be excused with regard as to what I say of the Megasea. *Harrison Weir, Hinwick Lodge, Tunbridge Wells.*

Home Correspondence.

Christmas Decoration.—In many places a great deal of this has to be performed annually, and in places where evergreens are not over-abundant materials that will in any way take their place or assist for decorative purposes are invaluable. There are numerous things that can be obtained by the exercise of a little forethought that come in very handy; take, for example, Pampas-grass, Bulrushes, and many of the monster grasses that grow in swampy places and by river sides, how useful they are, and what a "feather" or finish they give to heavy evergreens if judiciously arranged with a little taste. Then again, for covering large surfaces, what a relief a piece of virgin cork, watered with strong alum water and allowed to dry so as to crystallise, gives to a large mass of dark green foliage. Of course the arrangement must be tastefully done, and then the effect is more marked. These few remarks may give those a hint who are in the habit of yearly following the same old-fashioned style to introduce a little novelty into their arrangements which in all probability will be appreciated. *J.*

"The Floral World and Garden Guide."—The disappearance of the *Florist and Pomologist* from the list of contemporary horticultural papers calls attention to those that remain, amongst which, it appears, there is not now a single monthly. The first number of the *Floral World* was published January, 1858, the proprietors being Messrs. Groombridge & Sons, and the Editor the undersigned. It was successful from the first; and, so far as I am concerned, to the last. The publishers frequently assured me that the circulation reached a higher point than had ever been known before in the case of a horticultural monthly, and as publishers of the *Florists' Journal*, *Glenny's Gardener*, and other such works, they could speak with authority on the matter. In the year 1868 a coloured plate was added as one of the attractions of the *Floral World*, and this was followed by a considerable increase in the circulation. In the year 1874 a cloud came over the concern; in every proper sense of the term the publication was prospering, but there was a divergence of opinion between myself and the proprietor as to certain matters of a strictly private nature. I have never stated the reason for my separation from Messrs. Groombridge, nor shall I do it now; let it suffice, that the *Floral World* in itself had nothing to do with it. The misunderstanding continuing without prospect of effacement, I separated from the *Floral World* in December, 1875, having managed it as Editor during a run of eighteen years. I left it in a healthy thriving state, and it was continued, but I know not how long, nor in what way, nor by whom it was edited. I never inquired: it was no concern of mine. It was on a point of honour that I terminated a business connection that for some years had been worth from £250 to £300 per annum to me. Were similar circumstances again to arise I should take the same course. That I left the thing without saying a word to any one is, I hope, approvable on the face of it, for it cannot be said that I inflicted any more damage than was inevitable as the simple consequence of taking care of myself. *Shirley Hibberd.*

The Gardeners' Royal Benevolent Institution.—It is very pleasing to see the *Gardeners' Chronicle* weekly report of donations sent to the above Institution in order to secure the promised £500. When sending my £1, in the early part of November, I wondered how many more gardeners in this county (Suffolk) would contribute to the good cause. However, I regret to see so few names, but hope that within the next few days Suffolk gardeners will come out like men for so good a purpose. Please, gentlemen, do not let the Institution lose the £500. *J. Perkins.*

Tarred Hot-water Pipes.—I should like to say a few more words with respect to the tar on my hot-water pipes. I wish at the same time to thank "T. S. C.," p. 725, for his remarks on the same subject. I have also received several communications from nurserymen, engineers, and others recommending various remedies, for which I return my thanks, but I am sorry to say I have tried most of them without the slightest effect. Again referring to "T. S. C.'s" remarks in which he says if my pipes are painted with Brunswick Black I need have no fear, but one of those who communicated with me stated that tar is the foundation of all varnishes recommended for iron. He goes on to say his pipes on one occasion were painted with Brunswick Black or some other varnish, and his description of the damage done to his plants agrees exactly with my own experience. I find that it does no damage to the plants except when the pipes are heated beyond a certain degree. It has killed all the fronds of the Ferns, and has caused all the leaves from Gardenias, Rondeletias, Tabernæmontanas to come off, in fact it has crippled most of my plants. The following are the means I have tried to get the tar off:—scraping with knives, rubbing with soft bricks, washing with paraffin and linseed oil. I have now come to the same conclusion as the gentleman mentioned above, that the only thorough remedy is to take out the pipes and burn them over a strong fire. This I find would be a long and expensive process, as the engineer who fixed the pipes tells me it would take him and a man three months, for the joints are filled with iron cement. Therefore I must again appeal to some of your more experienced readers to know if the contractor who painted the pipes cannot be made to remedy this evil, and is he liable for the damage done. *Alfred Bishop, The Gardens, Abbotsford, Burgess Hill.*

Lily Bulbs.—It is well known that imported roots of Japanese Lilies die in large numbers; a kind of rot sets in at the base of the bulb round the roots, and the decay works upwards from the base to the apex, effectually destroying it. Because of this tendency—and it is as marked in the case of many of the imported Dutch as in that of the Japanese bulbs—some have advised that they be potted at once, *i.e.*, as soon as received; but experience shows that the rot will set in notwithstanding. A successful amateur cultivator of Lilies who purchases a few imported bulbs every year has adopted, with some show of success, the practice of filling shallow boxes with cocoa-nut fibre, and then placing his Lily bulbs in it as soon as received, using the fibre moderately moist, but not too much so. Any roots they may have are spread out, and then the bulb is covered with the fibre pressed firmly about it. The boxes are then placed on the floor of a tool shed where it is moist rather than dry. Here they remain until January, and then they are potted. By that time fresh roots are being put forth, and as soon as the bulbs are potted root-action may be said to commence; a fairly early growth results, and a fine head of bloom at the proper season. *R. Dean.*

Drawing.—Seeing in the *Gardeners' Chronicle* a hint to young gardeners how to spend the winter evenings from "F.," I for one would like to study plan drawing, but I am at a loss how to set about it, and I think many young gardeners are in the same dilemma who have no one to show them the way. I think if "F.," as he has started the subject, would kindly give some instructions through the medium of the *Gardeners' Chronicle*, it would be a great boon to many young gardeners. *A Young Gardener.*

Cucumber Growing.—Mr. Longthaw's method as given falls very far short of instructive. Quantities cut within certain dates is the effect, which would become highly interesting to your readers if followed by a full description of the method. Perhaps Mr. Longthaw would oblige your readers with name of sort, date of sowing seed, date of planting-out the houses, at what stage stopping or pruning commenced, how often pruned, what manure is used, and if all the 150 tons mentioned is put in the houses before planting; if not, what portion, and when is the other portion added? Is the water heated for watering, and how? Quantity of coal or coke used, and cost at home? Number of hands required? Mr. Bishop shows himself to be far less successful as a grower, compared with Mr. Longthaw's return, by just 20 per cent. The question most affecting growers is the return per square yard, and not the return per plant, as Mr. Bishop thinks. *J. B. T.*

—— In reply to Mr. Longthaw's query respecting the quantity of Cucumbers cut from individual plants, we do not consider 11,744 dozen to be more than a fair crop, when we take into

consideration 2000 plants, with the enormous extent of 765 yards of glass. Mr. Heptinstall of Paradise Gardens, Mon., cut this summer, from 125 plants, 14,500 Cucumbers, or rather more than nine dozen and a half to each plant; the above were planted on March 10 and cleared out by the end of August to make room for a winter batch. They were grown in a low span-roofed house, 9 feet by 11, with a sunk passage up the centre, and not on the express or non-ventilating system, but ventilated judiciously by the conditions of the outside atmosphere. The varieties grown were Pettigrew's Cardiff Castle, Rollisson's Telegraph, Cutler's Model, Tender and True, and Kelway's Paragon. Pettigrew's Cardiff Castle is considered to be by far the best, being of a robust constitution and a most prolific bearer. In our opinion this novelty surpasses Telegraph (its parent) in free bearing qualities. Although most growers have their pet variety, to which they stick with the tenacity of a limpet, few have stood the test like Telegraph, and if I mistake not, Pettigrew's Cardiff Castle is destined to be the Cucumber of the future, as Telegraph has been of the past. It would be interesting to have Mr. Longthaw's experience regarding varieties. *A. Smith.*

The Market Sale of Fruit and Flowers.—We have read the correspondence *re* flowers and salesmen in Covent Garden, and would like to make a suggestion to flower growers sending flowers for sale—that is, to consign their flowers to a respectable auctioneer, and have them sold by auction. They would in all probability get them sold for from 10 to 20 per cent., and we believe they would realise on an average better prices, besides getting four-sixths to five-sixths of the amount made. Having considerable experience here (Birmingham Market), we are convinced that the French, English, and other flowers sold here by auction (and there are many waggonloads some mornings) would not realise the price if even they were sold at all by any other means than by auction. This is the result of our experience as buyer and seller. *Pope & Sons, Birmingham Market Hall.*

—— At times advertisements to amateurs are certainly misleading, as they name articles as being wanted when in fact they are out of season. Late arrivals, inferior quality, and bad packing, have much to answer for, but to those who purpose making the business profitable if possible I would say :—1stly, find a respectable salesman; 2dly, seek always his advice and act upon it; 3dly, make no consignments until so posted up. Such advice when obtained may be relied upon, as the sender's interest is also the interest of a *bonâ fide Covent Garden Salesman.* [Those who send goods should send good stuff, properly packed, and in good time. We have before us some fine blooms of Eucharis, but all more or less damaged. The few uninjured ones in the consignment would fetch a good price, the others would fetch nothing, the sender would thus only get the average price for the lot, which would be small. In another case brought under our notice a good sample arrived too late for a Saturday market and were kept over till Monday, when they were worthless. It is only fair that these matters should be made known. Nor is it just to assume that beginners may not be as upright in their dealings as firms of longer standing. Ed.]

The Disqualified Apple.—I find in your last issue (p. 750) that "A. D." complains that I have not satisfactorily replied respecting Court Pendu Plat Apple shown at Southampton. Whether it applies to the supposed disqualification of that variety in 1883, or to the result of Court Pendu Plat being one of three varieties of dessert Apples that took 1st honours last month, I don't know. Allow me to say if it was the supposed disqualification, I was not in a position to reply in that respect. Although I was to have been one of the judges on that occasion I was unavoidably absent; consequently, I had nothing whatever to do with it. Mr. Wildsmith, I think, has fairly replied in p. 758, that no attempt was made to disqualify it. I, for one, never thought any judge could do so. As to Court Pendu Plat being one of three varieties that took 1st honours, I think I replied fairly to it, inasmuch as I said plainly that it was more due to the two excellent samples shown with it, namely, King of the Pippins and Ribston, than to Court Pendu Plat, only it should have read "King of the Pippins," instead of "Cox's Orange." If there is any dissatisfaction, it is not quite clear what it originated from—whether from the supposed disqualification of the Apple in question, or from Court Pendu Plat being one of three varieties that took 1st honours at Southampton last month, or the two questions combined; all I can say is, that my colleague, Mr. Crump, and myself, paid more than usual attention to the class referred to, the competition being rather close: and if satisfactory results have not attended it, we had hoped otherwise. *F. Rutland, Goodwood.*

Potato Scab.—With Mr. W. G. Smith I was much amused with Mr. Plowright's suggestion as to the cause of scab in Potatos made in a recent paper. Somewhat unconsciously Mr. Plowright endows the Potato tuber with intelligence in assuming that it is capable of understanding when it should armour-plate its skin with scab to resist fungus, although, as Mr. Smith has shown, it is unfortunate for that intelligence that for the past year or two it should have been aroused to action only through false alarms. If I had been told that the plug found in full wine bottles was the product of an effort upon the part of the vinous beverage within to protect itself by means of cork against the attacks of topers I should have thought a dubious joke was intended. It is impossible to regard Mr. Plowright's suggestion as to the formation of scab on the Potato skin more seriously. The fact is, that whilst our scientific and practical explorers into the kingdom of fungology have made us fully acquainted with all the operations of the Potato disease, so simple a thing as Potato scab is in its cause and operation enshrouded in mystery. Happily it is no great evil, and at the most is only skin deep in its effects, but still cultivators would like to be free from it for many reasons. The theory that it is caused by some objectionable foreign element in the soil will not do at all—it is as unsubstantial as the cork theory. Those who would like to ascertain the real cause of scab should remember that it is always most evident in dry seasons, as it is the most rare in wet ones; therefore, we should in any enquiry made start with the assumption that drought or lack of moisture in the soil is one primary cause; but that alone would not fully or at all intelligently explain the cause of scab, and we must go farther in search of operating agents. I once thought that dryness of the soil led the earthworms to excoriate the tender skins of the newly forming tubers in search of moisture, perhaps of food; but that theory breaks down when it is found that scab is, as I have before stated, only skin deep. If the worms were driven to attack the tubers—assuming of course that they have suitable organs for the purpose—we should see that the flesh, which in its immature state is really a reservoir of water, would be eaten or absorbed materially, but that is not the case. A close examination of scab marks on the surface of Potatos reveals evidence of their production by internal eruption, that, in fact, as the name implies, they are scabby [that is corky] formations produced by some substance being eliminated from or rejected by the tubers in the course of growth. The point for consideration is, does lack of moisture in the soil cause in the newly forming tubers a secretion of some foreign or otherwise objectionable substances, that the tubers must of necessity reject, and which are rejected through eruptions in the skin? Do the tubers, for instance, in dry seasons form globules of lime, which are rejected, or are the white excrescences seen so commonly on immature or early lifted tubers, in dry seasons, really starchy compounds, rejected as incapable of assimilation? If eruptions even of the most trivial kind are formed on the skins, of course as the tubers increase in size these scab-like spots will increase in size also. Perhaps some enthusiastic enquirer into the cause of scab may like next year to uncover a half-grown tuber, carefully scratch his initials upon the skin with a needle, and puncture other parts of the skin, and then, covering the tuber up carefully, note the result several weeks later. Such an experiment might throw some light upon the subject. *A. D.*

—— I note that at p. 724 Mr. Smith mentions his friend Mr. Plowright is inclined to think it is an effort to form cork to prevent the entrance of fungus, an opinion which I cannot entertain. Mr. Smith also has an opinion that the long-continued drought and heat have perhaps had a trifle to do with the scab this year, and foreign substances in the soil are thought sometimes to cause it. Now, I am well aware that in attempting to criticise a scientific man I am treading on dangerous ground, but if I write truthfully and practically I have nothing to fear. In 1879 I was called upon to cultivate Potatos on a piece of land 7 acres in extent, for three years; the scab was most terrible, and in 1881 I determined to try an experiment. I had for some time thought that worms travelling over Potatos when young erased the skin with their rough bodies and so formed the scab. I, therefore, set about putting my thoughts into practice. In the same field I had eight drills or small trenches taken out with a spade, and after levelling the bottom I planted twelve kinds of Potatos, filling up the trench to the top with wheat-chaff, mixed with sharp sand, just drawing about 2 inches of earth over the top. Their cultivation was precisely the same as the rest of the field. At taking-up time—I well remember that glorious day—every Potato came out clean and perfect, and not a scab visible, in fact I was awarded 1st prize for the twelve dishes at a large Potato exhibition. This appears to me conclusive. I may add the rest of the field produced Potatos scabbed as usual. *R. Gilbert, Burghley.*

—— If Mr. W. G. Smith will refer to part 1 of the *Untersuchungen aus dem Botanischen Laboratorium der Universität Göttingen*, Berlin, 1879, plate 7, fig. 7, he will find a small figure showing the formation of a *korkschicht* by a tuber which, after being artificially wounded, had fungus-spores applied to the exposed tissue. The experiment is fully described at p. 17 and 18 of the above quoted work. I daresay the phenomenon has been figured by others, but the above is the best figure I have seen. Unfortunately I do not reside in the metropolis, where every book can be consulted at one or other of the many excellent reference libraries, or I could possibly have given my friend further references to this well known and interesting subject. *Charles B. Plowright.*

Oxalate of Lime and Fungoid Growths.—Oxalate of lime is by no means confined to the Myxomycetes—it occurs in Mucor and other fungi. When I first heard of Dr. Flight's determination that the crystals belonging to the bodies described by Mr. A. S. Wilson were oxalate of lime, I considered the fact to be in favour rather than in disfavour (as esteemed by Mr. Murray) of Mr. Wilson's published views. A remarkable case of an arrested fungus growth, resembling a Truffle, but in reality an abnormal and subterranean condition of some Polyporus, is given, from the pen of the Rev. M. J. Berkeley, in the *Gardeners' Chronicle* for February 8, 1873, p. 176. Mr. Berkeley writes that the "outer coats" of this arrested and abnormal mass of fungoid matter abounded in the "beautiful octohedral crystals of oxalate of lime." The mass was exhibited before the Scientific Committee, March 5, 1873, and the description in the *Gardeners' Chronicle* says the growth was "filled with crystals of oxalate of lime." *W. G. Smith.*

Eucharis amazonica.—The letter of inquiry from "A. E." has been useful to others besides the writer in calling out Mr. Hudson's able reply, but I think the cause of failure will have to be sought beyond the fact of the pots having been plunged in cocoa-fibre. Our Eucharis have been plunged in that material for the last ten years, and they have done so well as to be admired by all who have seen them. To show that there is a vigorous root-action I may say that six bulbs potted into an 11-inch pot two years ago have split the pot in halves. Would it not be well if "A. E." sent two or three of his bulbs to the Editor for examination, as I have heard complaints from several good gardeners lately of a disease which has attacked their Eucharis, in several instances completely spoiling what was before a good healthy collection. Not being personally acquainted with the disease I merely throw out this suggestion as a hint which may prove useful. *Charles E. Pearson, Chilwell Nurseries, Notts.*

Reports of Societies.

The Edinburgh Botanical: *Dec.* 11.—The Society met at 5, St. Andrew Square—Mr. W. B. Boyd, and afterwards Professor Dickson, in the chair.

The office-bearers for the year were elected as follows:—President—Professor Dickson; Vice-Presidents—Dr. Robert Gray, Dr. William Craig, W. B. Boyd, of Faldonside; Dr. T. A. G. Balfour; Councillors—Charles Jenner, Alexander Buchan, Dr. Hugh Cleghorn, the Rev. John Macmutrie, Robert Lindsay, Patrick Geddes, Symington Grieve, Andrew Taylor, William Sanderson, and the Rev. J. M. Robertson; Honorary Secretary—Professor Douglas Maclagan, M.D., F.R.S.E.; Honorary Curator—Professor Dickson; Foreign Secretary—Andrew P. Aitkin; Treasurer—Patrick Neill Fraser; Assistant Secretary—John M. Macfarlane, D.Sc. On the recommendation of the Council, the Society awarded Mr. A. Taylor cordial thanks for his valuable honorary services as Assistant-Secretary during the past five years, and also voted a honorarium to him. In retiring from the chair, Mr. Boyd took occasion to mention that the jubilee of the Society would occur during the currency of the term of office of his successor. He trusted that interesting event would not be overlooked, but that steps would be taken to celebrate it in a suitable way. Professor Dickson, on taking the chair, briefly thanked the Fellows for the honour they had conferred on him. The following papers were read:—

I. "On Asplenium germanicum." By John Lowe, M.D., King's Lynn, Norfolk.

II. "On the Structure of the Root of Avicennia, with special reference to a mode of Cell-thickening." By Dr. Macfarlane.

In this Avicennia, or Mangrove plant of Australia, peculiar thickened cells in the rind were observable. Each cell was of a stellate shape, and the thickening matter was deposited in a continuous band traversing the ray-like arms of the cells.

III. "Note on an Abnormal Form of the Capitulum of Chrysanthemum Leucanthemum." By John Rattray M.A., B.Sc.

IV. "Report on the Progress of Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

Report for November, 1884.—During November the thermometer was at or below the freezing point on thirteen occasions, indicating collectively 64° of frost, as against 37° for the corresponding month last year. The lowest readings were on the 14th, 25°; 15th, 27°; 23d, 25°; 29th, 23°; 30th, 19°. The highest morning readings were on the 1st, 56°; 5th, 48°; 7th, 55°; 9th, 49°; 11th, 48°. The highest day temperature was 60°, on the 1st, and the lowest 32°, on the 30th. Rain fell on sixteen days, chiefly during the first half of the month, which moistened the surface of the ground only; underneath the surface the ground is dry to an extent not hitherto observed in November. The usual storms during this month have been less frequent and severe; outdoor work has, therefore, been very little interrupted. Only two species of plants came into flower on the rock garden, viz., Kniphofia Quartiniana and Statice incana, but there are a good many species still in bloom of those formerly recorded. Outdoor vegetation is in an almost dormant condition.

National Rose Society.—REPORT OF THE COMMITTEE FOR 1884.—When a Society is pursuing a prosperous career a certain sameness will generally be found to attach to the reports which it issues from year to year. The committee of the National Rose Society do not, therefore, expect to impart any very great variety to the short statement they are now about to make. The exhibitions have, as usual, been in every way successful, the number of members has increased, while the beneficial influence of the Society on all matters connected with the Rose continues unimpaired.

In one respect the past year has been noteworthy. The committee have been enabled to bring to a successful termination and to publish the most important work they have yet undertaken, viz., their *Descriptive Catalogue of Exhibition and Garden Roses*. The former edition having been so soon exhausted, it has been considered advisable to print a very much larger number of copies of the new catalogue, in order to save the cost of reprinting at an early date.

A long-felt want has also been supplied in the form of a carefully prepared list of byelaws and regulations, which having now received the approval of the general meeting will be sent to all the members of this Society during the course of the ensuing year.

FINANCIAL STATEMENT.—It will be seen that the financial report of the Society is in most respects satisfactory, considering that three exhibitions have again been held, and that some portion at least of the very large expenditure incurred through issuing the new catalogue has already been defrayed. The balance remaining now in the Treasurer's hands is £17 8*s.* 3*d.*

AFFILIATED SOCIETIES.—The committee have the pleasure of announcing that there is a slight increase in the number of Rose and other societies affiliated to the National one, these societies now amounting to twenty-five.

ARRANGEMENTS FOR 1885.—The experience of the last few years has convinced the committee that the income of the Society is not as yet sufficiently large to admit of their holding three shows annually, that is to say, if they are to undertake any other work in furtherance of the interests of the Rose; they have, therefore, arranged to hold during 1885 two exhibitions only. The Metropolitan Show will again be held in the Royal Horticultural Gardens, South Kensington; while the Provincial Show will take place at some town in the North of England yet to be decided upon.

MEMBERS PRIVILEGES.—Members subscribing £1 will be entitled to two private view tickets, and also to four transferable tickets, admitting at the same time as the general public. Those subscribing 10*s.* are entitled to one private view ticket, and also to two transferable tickets. Each one of these tickets will be available at either of the Society's exhibitions.

In conclusion, the committee have again to tender their best thanks for much kind co-operation received during the past year. To the Council of the Royal Horticultural Society for kindly extending the time allotted to members for a private view of the Roses at the Metropolitan exhibition; to Mr. Bruce Findlay and Mr. W. H. Williams for the very complete arrangements made respectively by them for the Manchester and Salisbury shows; and especially to their local secretaries for their kind assistance in obtaining new members.

Notts Horticultural and Botanical: *November* 10.—The monthly meeting was held at the Mechanics' Institute. Mr. G. H. Walker, Hardwick House Gardens presided. The exhibits were strong in Chrysanthemums; noticeable was a fine mass of single varieties, sent by the Messrs. Pearson, Chilwell Nurseries, cut long on the stalk, and arranged in vases in colours, they produced quite a charming effect. Mr. German, Malvern House, exhibited upwards of fifty varieties, principally Japanese; Mr. Meadows, Rock House, Basford, some fine show blooms. The Chairman brought fine examples of Poinsettia pulcherrima, also a bunch of that exquisite white pompon Chrysanthemum, Snowdrop. Mr. Dixon, Mapperley House, had large bunches of Grapes, Barbarossa, Lady Downe's, and Black Alicante, good in berry but defective in finish; Mr. Thacker, Minerva House, St. Ann's Well Road, a nice piece of Cypripedium barbatum, with flower-stalks 15 inches in length, grown in a 6-inch pot, and containing a dozen flowers.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, DECEMBER 17, 1884

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					Hygrometrical Deductions from Glaisher's Tables 6th Edition		WIND.		RAINFALL.
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.		
Dec.	In.	In.	°	°	°	°	°	°				In.
11	29.46	−0.33	50.5	45.0	5.5	47.3	+ 6.5	43.1	86	S.: S.W.		0.13
12	29.95	+0.15	47.5	41.0	6.5	44.7	+ 4.0	40.6	86	W.S.W.: W.N.W.		0.00
13	29.99	+0.20	53.5	49.5	4.0	51.8	+11.2	48.1	87	W.: N.W.		0.00
14	29.76	−0.05	53.0	42.0	11.0	47.8	+ 7.1	42.7	84	S.W.: S.S.W.		0.20
15	29.65	−0.16	49.0	36.2	12.8	42.5	+ 1.8	36.7	81	S.W.		0.00
16	29.78	−0.03	43.0	32.0	11.0	37.8	− 2.9	33.3	84	S.W.		0.00
17	29.61	−0.21	42.5	33.0	9.5	37.1	− 3.4	32.3	83	W.N.W.		0.10
Mean	29.74	−0.06	48.4	39.8	8.6	44.1	+ 3.5	39.5	84	S.W.		0.43

Dec. 11.—Fine bright morning. Rain from 2 30 P.M. till 9 P.M. Dull night.
— 12.—Fog in early morning. Fine morning. Very slight rain at 3 P.M. Fine, but windy at night.
— 13.—Fine bright morning. Dull afternoon and night.
— 14.—Dull day. Rain from 4 30 P.M. Fine and clear at midnight.
— 15.—Dull day. Fine clear night.
— 16.—Very fine day. Overcast at night.
— 17.—Rain in early morning. Very fine clear day and night.

LONDON: *Atmospheric Pressure.*—During the week ending December 13, the reading of the barometer at the level of the sea increased from 29.76 inches at the beginning of the week to 29.92 inches by 9 A.M. on the 7th, decreased to 29.78 inches by midnight on the same day, increased to 29.98 inches by midnight on the 8th, decreased to 29.89 inches by 3 P.M. on the 9th, increased to 30.13 inches by 9 A.M. on the 10th, decreased to 29.56 inches by 3 P.M. on the 11th, increased to 30.17 inches by 3 P.M. on the 12th, increased to 30.22 inches by 9 A.M. on the 13th, and was 30.17 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.94 inches, being 0.24 inch higher than last week, and 0.02 inch below the average of the week.

Temperature.—The highest temperature in the shade in the week was 54°, on the 8th; the highest on the 9th was 44°. The mean of the seven high day temperatures was 50°.3.

The lowest temperature in the week was 34°, on the 10th; on the 13th the lowest temperature was 49°.5. The general mean was 42°.

The greatest range of temperature in one day was 15°, on the 10th; the smallest was 4°, on the 13th. The general mean was 8°.3.

The mean temperatures were—on the 7th, 50°.7; on the 8th, 47°.4; on the 9th, 38°.6; on the 10th, 43°.6; on the 11th, 47°.3; on the 12th, 44°.7, and on the 13th, 51°.8; and these were all above their averages (excepting the 9th, which was 2°.6 below), by 9°.2, 6°, 2°.6, 6°.5, 4°, and 11°.2, respectively.

The mean temperature of the week was 46°.3, being 4° higher than last week, and 5°.3 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 74°, on the 7th. The mean of the seven readings was 56°.8.

The lowest reading of a minimum thermometer with its bulb placed on grass was 26°, on the 10th. The mean of the seven readings was 33°.

Rain.—Rain fell on 4 days to the amount of 0.64 inch.

ENGLAND: *Temperature.*—During the week ending December 13, the highest temperatures were 56° at Truro, 55°.1 at Plymouth and Liverpool; the highest at Preston was 51°, at Bolton and Bradford 52°.1. The general mean was 53°.8.

The lowest temperatures were 29°.5 at Wolverhampton, 31°.9 at Cambridge, 32° at Hull; the lowest at Liverpool was 38°.9, at Preston 38°, and at Truro and Leeds 37°. The general mean was 35°.

The greatest ranges were 24°.3 at Wolverhampton, 23°.1 at Cambridge, 23° at Hull; the smallest ranges were 13° at Preston, 14°.9 at Bradford, 16° at Leeds. The general mean was 18°.8.

The mean of the seven high day temperatures was highest at Truro, 52°.8, at Plymouth 52°.6, at Sunderland 51°.1; and was lowest at Bolton, 47°.6, at Preston 48°, and at Bradford 48°.4. The general mean was 50°.

The mean of the seven low night temperatures was highest at Truro, 45°.1, at Plymouth 44°.1, at Liverpool 43°.5; and was lowest at Wolverhampton, 36°.5, at Bolton and Hull 37°.9. The general mean was 40°.8.

The mean daily range was greatest at Sunderland, 13°, at Wolverhampton 12°.4, at Hull 11°.7; and was least at Preston, 7°, at Liverpool 7°.1, at Truro 7°.7. The general mean was 9°.2.

The mean temperature was highest at Truro, 48°.9, at Plymouth 48°.2, at Liverpool 47°; and was lowest at Wolverhampton and Bolton 42°.6, at Hull 43°.7. The general mean was 45°.3.

Rain.—The largest falls were 2.26 inches at Bristol, 1.35 inches at Bradford, 1.28 inch at Bolton; the smallest falls were 0.20 inch at Nottingham, 0.36 inch at Wolverhampton, 0.37 inch at Hull. The general mean fall was 0.84 inch.

SCOTLAND: *Temperature.*—During the week ending December 16, the highest temperature was 52°.5, at Leith, at Aberdeen the highest was 49°.7. The general mean was 51°.1.

The lowest temperature in the week was 33°, at Greenock; at Leith the lowest temperature was 35°.9. The general mean was 34°.5.

The mean temperature was highest at Paisley, 44°.3; and lowest at Dundee, 41°.1. The general mean was 42°.8.

Rain.—The largest fall was 1.81 inch, at Glasgow, and the smallest fall was 0.24 inch, at Aberdeen. The general mean fall was 1.10 inch.

JAMES GLAISHER, F.R.S.

Variorum.

BIRD-CATCHING PLANTS.—Mr. R. H. Govett, in the *Transactions of the New Zealand Institute*, gives some startling facts as to the bird-killing powers of Pisonia brunoniana, or P. Sinclairii. A sticky gum is secreted by the carpels when they attain their full size, but is nearly as plentiful in their unripe as in their ripe condition. Possibly attracted by the flies which embalm themselves in these sticky seed-vessels, birds alight on the branches, and on one occasion two Silver-eyes (Zosterops), and an English sparrow were found with their wings so glued that they were unable to flutter. Mr. Govett's sister, thinking to do a merciful act, collected all the fruit-bearing branches that were within reach, and threw them on a dust-heap. Next day about a dozen Silver-eyes were found glued to them, four or five of the pods to each bird. She writes:—"Looking at the tree one sees tufts of feathers and legs where the birds have died, and I do not think the birds could possibly get away without help. The black cat just lives under the tree, a good many of the birds falling to her share, but a good many pods get into her fur, and she has to come and get them dragged out." In a note Mr. T. Kirk says that Pisonia umbellifera, Seemann, = P. Sinclairii, Hook. f., is found in several localities north of Whangerei, both on the east and west coasts, also on the Taranga Islands, Arid Island, Little Barrier Island, and on the East Cape, possibly in the last locality planted by the Maoris. The fruiting pericarp is remarkable for its viscidity, which is usually retained for a considerable period after the fruit is fully matured. It can be readily imagined that small birds tempted to feed on the seeds might easily become glued to a cluster of fruits.

NEW PLANTS IN NEW ZEALAND.—As reported in *Nature*, among new species of plants collected on Steward Island by Mr. Kirk, he describes a beautiful new Olearia (O. Traillii), called after his old and valued friend C. Traill, who has done so much for the natural history of Steward Island, It forms a large shrub from 5 to 12 feet high. The terminal panicles are from 4 to 9 inches long. The disc florets are purple. It is one of the most striking plants in the New Zealand flora, and one we hope we may soon see in cultivation.

PORTENTS OF A SEVERE WINTER.—You will give me credit for having been wonderfully patient and forbearing in not ere now having troubled you and your readers with another weather prophecy. I am not sure that even now I ought not to remain silent, because few people, if any at all, ever take the slightest notice of forecasts, either of the weather or any other thing, except to see whether they fail. He who gives warning is like one crying in the wilderness. It always was so, and if seers are no longer stoned, they get sufficiently "clodded" with satire and ridicule. It may be said it was hardly safe to predict a severe winter in such a spell of mild weather as we

have recently had, but six weeks ago I was quite as confident of it as I am now. Indeed, it has been just the kind of open weather that always precedes hard frosts, and, very likely, heavy snowfalls. Early winters are rarely long and cold. After being once again well warmed, as the middle zone of the northern hemisphere has been this year, it must needs have taken a little time to cool down. The rains of the last five or six weeks have gone deeper down into the soil and rocks than has been the case for many years back. It was inevitable they should do so, and, absorbing the stored-up surface heat, give it out, and thus induce such temperate weather as we have had it. As I cautioned economy in the use of stored-up water last spring, so now I would say to aged people and mothers of little children, lay in a little extra flannel, a few more blankets, and some good hosiery for feet and legs. They will be needed before February runs out. Both on the Western Atlantic, beyond the Gulf Stream, and on the European Continent to the east, great cold is slowly but surely creeping down. By the time the sun gets into his southern solstice it will inclose and make us more than ordinarily sensible of its presence. I could say much of significant signs and indications, but refrain. *Morgan Brierley, in Manchester Paper.*

Answers to Correspondents.

ADDENDA.—In our "New Plants Certificated by the Floral Committee at the Royal Horticultural Society's Meetings, 1884," (p. 750), we omitted two First-class Certificates given to the New Plant and Bulb Company, Colchester, August 12, for Tigridia Pavonia alba and Montoretia elegans; and one First-class Certificate to Mr. De B. Crawshay, on July 22, for Cattleya Gaskelliana.

AZALEAS IN BAD HEALTH: *C. Taylor.* We found the shoots sent to us completely covered with thrips and their exudations. They ought to receive a thorough fumigating with tobacco, or tobacco-paper, three times at intervals of three or four days. This would be best performed in a close pit or small house. As regards their roots you can do nothing till March or April, when they must be potted in five-sixths of roughly pulled fibrous peat and one-sixth of finely sifted loam, using about one-fourth of the whole bulk of sharp sand. Dung is a most unsuitable substance to mix with Azalea composts, and any aids to growth are better given in the liquid state during active growth, and then only to plants known to be pot-bound.

BANANAS: *An Old Subscriber.* The plants may turn yellow, and the leaves drop off prematurely, from the soil having got poor or sodden, or from too much water having been given at this time of the year. Thorough drainage for these gross-feeding plants is of much moment.

CARNATIONS AND GUANO: *A. B.* The application of this manure is not advisable at the period of flowering, unless the plants have not been repotted for a long time. With plants struck early, and repeatedly shifted during the last summer and early autumn, guano would hardly be wanted until the plants showed signs of giving out—later on, in the winter or spring. As to the mice, you must trap or poison them.

CRESS: *Surrey.* Ionopsidium acaule.

ERINUS LYCHNIDEA, THUNB. — In reply to G. H. Brockbank (p. 730), Mr. John Leman writes:—"This plant was cultivated in the Royal Dublin Society's Botanic Garden, Glasnevin, in 1867, during the time I had charge of the conservatory department under the late Dr. Moore. It is well figured in the *Botanical Register* for 1823, t. 748, from specimen supplied by Richard Leigh, Esq., of Bexley.

FORESTRY EXHIBITION: *S. M.* No report of the kind you mention has as yet been published. Whether the lectures will be hereafter issued depends, we believe, upon the amount of funds at the disposal of the Committee after the payment of all expenses.

GRAPES: *A. B.* From the poor-looking example sent, and which arrived in a smashed up state, we cannot say what the kind is; send better specimens, carefully packed.

INSECTS: *B. A. M.* After a careful microscopical examination of your Eucharis leaves we detected one very small thrips. The leaves showed no trace of insect work nor of other insects, and their discoloration in patches appears to be owing to some other agency than insects. *I. O. W.*

LILY OF THE VALLEY: *J. Searle.* The crowns sent us were well grown and fairly developed, but the flower-spike was poorly furnished with blooms, some of which were deformed and others abortive. You seem to have got a poor variety, but they may bring better blooms if forced at a later period. Your temperature, 90° to 92°, is right, but should never vary day or night.

MR. W. H. JONES is requested to send his address.

NAMES OF FRUIT: *W. M. B., Neath.* 1, Alfriston; 2, Minchul Crab; 3, Duck's Bill. *Pear:* Verulam.—*J. T. B. Apple:* Bedfordshire Foundling. *Pear:* Passe Colmar.

NAMES OF PLANTS: *J. H. S.* Your specimens reached us broken all to pieces, and it would be better to get a nurseryman to name them, as we do not undertake to name florists' varieties.—*R. L.* Atriplex Halimus, a good shrub for the seaside.—*G. Short.* Onychium japonicum. — *E. J.* Asplenium cicutarium. — *T. L.* Gordonia javanica.

PINES BLACK IN THE CENTRE: *R. N.* This is invariably caused by too much water at the root, and too moist an atmosphere while ripening. It is also owing in no small degree to defective root-action, bad drainage, and sour soil.

SHRUB SEEDS: *R. Painter.* Euonymus europæus.

VINE ROOTS: *G. Trinder.* The roots came dried up. Please send some others, packed in damp moss.

INTELLIGENT READERS, PLEASE NOTE. — *Letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the Publisher, and* NOT *to the Editor.*

CATALOGUES RECEIVED.

CARTER & CO., 237, High Holborn, London—Vade Mecum, and List of Flower and Vegetable Seeds.
FREDERICK ROEMER, Quedlinburg—General Seed List.
W. KERR, Dargavel, Dumfries—Seed Potatos.
B. S. WILLIAMS, Holloway—Garden and Agricultural Seeds.

COMMUNICATIONS RECEIVED: Wise & Rides.—Baron v. Mueller.—E. A., Paris.—W. P. H.—Harrison Weir.—E. M. H.—A. T., Edinburgh.—F. J.—W. E.—R. E. T.—S. H.—J. J.—T. C.—M. D.—W. W.—Udo Dammar, St. Petersburg.—Prof. Lange, Copenhagen.—W. R.—W. O., Fota Island.—R. J. L., many thanks.—B. T. L.—W. E. G.—John Smith.—Emeritus.—G. D.—J. L.—W. H. F.—H. E., Ryde.—J. W. P.—O. T.—H. J. C.—J. R., Menabily.—G. A. P., Florida.—Warwickshire.—H. J. Ross.—Alfred O. Walker, next week.—J. Malcolm.—J. Smith (nothing came in your letter).—E. R. C.—W. Ingram.—Z. Stevens.—J. S.—Jensen.—C. P.—R. H. Vertegaan.—W. Paul & Son.—J. G. Baker.—M. S.—T. P.—W. J. M.—C. Penford.—W. B.—H. J. C.

Markets.

COVENT GARDEN, December 18.

[THE subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

CONSIDERING the near approach of Christmas, business is far from active. Large arrivals of Nova Scotian and Canadian Apples and St. Michael Pines to hand; prices lower. English Apples dull at reduced values. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Lemons, per case	12 0	18 0
— Nova Scotian and Canadian, barrel	10 0	18 0	Pine-apples, Eng., lb.	2 0	..
Cobs, per 100 lb.	60 0	..	— St. Michael, each	3 0	7 0
Grapes, per lb.	1 6	4 0	Pears, French, doz.	1 6	3 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	4 0	6 0	Lettuces, Cab., doz.	1 6	..
Beans, French, lb.	1 0	..	— French Cos, each	0 6	..
Beet, per doz.	1 0	..	Mint, green, bunch	1 6	..
Cabbages, per doz.	1 6	2 0	Mushrooms, p. baskt.	1 0	2 0
Carrots, per bun.	0 6	..	Onions, per bushel	4 0	..
Cauliflowers, English, doz.	1 0	2 6	— Spring, per bun.	0 6	..
Celeriac, per root	0 4	..	Parsley, per bunch	0 4	..
Celery, per bundle	1 0	2 6	Radishes, per doz.	1 0	..
Cucumbers, each	1 0	1 6	Rhubarb, bundle	0 8	..
Endive, English, per dozen	1 0	..	Salsify, per bund.	1 0	..
Garlic, per lb.	0 6	..	Seakale, per punnet	2 0	2 6
Herbs, per bunch	0 2	0 4	Small salading, per punnet	0 4	..
Horse Radish, bun.	3 0	4 0	Spinach, per bushel	2 0	..
			Tomatos, per lb.	1 0	1 6
			Turnips, bun.	0 5	..

POTATOS.—Magnum Bonums, 4*s.* to 7*s.*; Regents, 7*s.* to 9*s.*; Champions, 4*s.* to 6*s.* per ton. Markets have a downward tendency.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Mignonette, 12 bun.	6 0	9 0
Arum Lilies, 12 blms.	6 0	9 0	Narcissus, Paper-white, 12 sprays	2 6	3 0
Azalea, 12 sprays	1 0	1 6	Pelargoniums, per 12 sprays	1 0	2 0
Bouvardias, per bun.	0 9	1 0	— scarlet, 12 sprays	0 6	0 9
Camellias, per doz.	3 0	8 0	Poinsettia, 12 blooms	3 0	9 0
Carnations, 12 blms.	1 0	2 0	Primula, double, bun.	1 0	1 6
Chrysanth., 12 bun.	4 0	12 0	— sinensis, 12 bun.	4 0	6 0
— large, 12 blooms	1 0	3 0	Roses (indoor), doz.	2 0	6 0
Cyclamen, 12 blooms	0 3	0 6	— French, per doz.	0 9	1 6
Epiphyllum, 12 blms.	0 6	0 9	Stokesia, 12 blooms	1 0	..
Eucharis, per doz.	4 0	8 0	Tropæolum, 12 bun.	1 0	2 0
Euphorbia jacquiniflora, 12 sprays	1 0	2 0	Tuberoses, per doz.	2 0	3 0
Gardenias, 12 blms.	9 0	18 0	Tulips, 12 blooms	1 0	1 6
Heliotropes, 12 sp.	0 6	1 0	Violets, 12 bun.	1 0	1 6
Hyacinths, Roman, 12 sprays	1 0	1 6	— French, bunch	1 6	2 0
Lapageria, white, 12 blooms	2 0	3 0	— Parme, French, per bunch	5 0	7 0
— red, 12 blooms	1 0	2 0	Wallflower, 12 bun.	4 0	6 0
Lily-of-Val., 12 sprays	2 0	5 0	White Jasmine, per bunch	0 6	1 0
Marguerites, 12 bun.	3 0	6 0			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Ferns, in variety, per dozen	4 0	18 0
Arbor-vitæ (golden), per doren	6 0	18 0	Ficus elastica, each	1 6	7 0
— (common), dozen	6 0	12 0	Foliage Plants, various, each	2 0	10 0
Arum Lilies, dozen	9 0	15 0	Hyacinths, Roman, each	1 0	2 0
Begonias, per doz.	4 0	12 0	Marguerite Daisy, per dozen	8 0	15 0
Bouvardia, dozen	9 0	18 0	Myrtles, per doz.	6 0	12 0
Chrysanth., dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Cyclamens, per doz.	9 0	24 0	Pelargoniums, scarlet, per dozen	4 0	6 0
Cyperus, per dozen	4 0	12 0	Poinsettia, per doz.	9 0	15 0
Dracæna terminalis per dozen	30 0	60 0	Primula sinensis, per dozen	4 0	6 0
— viridis, per doz.	12 0	24 0	Solanums, dozen	9 0	12 0
Epiphyllum, doz.	18 0	24 0	Tulips, dozen pots	8 0	10 0
Erica, various, doz.	9 0	18 0			
Euonymus, various, per dozen	6 0	18 0			
Evergreens, in var., per dozen	6 0	24 0			

**** *These prices vary considerably during Christmas week.*

SEEDS.

LONDON: *Dec. 17.*—Messrs. John Shaw & Sons, of 37, Mark Lane, report that business in farm seeds, as is usual towards the close of the year, is now confined to exceedingly narrow limits, and values all round are consequently without material variation. There is nothing whatever doing in either American or Continental Clover seed. For inferior qualities of English seed the tendency continues downwards. Bird seeds meet a slow sale. Feeding Linseed is steady. For blue Peas and Haricot Beans the enquiry for the moment is meagre.

CORN.

At Mark Lane on Monday foreign Wheat was, if anything, more dull of sale than English, and easier prices were only prevented by moderate arrivals. Flour was still more dull of sale than either, and quotations nominal. Maize, from scarcity, was very firm, and pretty nearly 1*s.* higher on the week. Beans tended against buyers, and Oats were dull. Barley and Maize were inactive.—On Wednesday English Wheat was in light supply, and good dry samples supported Monday's rates. Foreign Wheat was dull. Flour was without change. For Barley trade was slow, but prices were quite steady. Beans and Peas unaltered, and Maize very firm.—Average prices of corn for the week ending Dec. 16:—Wheat, 30*s.* 10*d.*; Barley, 31*s.*; Oats, 19*s.* 5*d.* For the corresponding period last year:—Wheat, 39*s.* 5*d.*; Barley, 31*s.* 7*d.*; Oats, 19*s.* 4*d.*

CATTLE.

At Copenhagen Fields on Monday the Christmas market was held. The consignments of cattle comprised the best selections from the primest stock in the kingdom, and made a splendid exhibition. There was, as usual, some variation in the numerical strength of the different classes, but in points of merit they were all as one. The entries were less numerous than on many previous Christmas markets, but they were equal to the requirements of the trade. Though in number falling short of last year by nearly 1000 head, the Scotch supplies still, as heretofore, took front rank for greater numerical strength than any of the other classes, and maintained to the fullest their established prestige as being second to none in point of excellence. The Hereford, Devon, Sussex, and Shorthorn cattle, though less numerous than the Scotch, were a grand collection, in excellent form. The sheep supplies were also more than usually even, and the selections were those most in request at this period. Trade all round opened slowly, but was steadily maintained until a fair clearance was effected. The Scotch cattle cleared first, taking top prices, from 6*s.* to 6*s.* 2*d.* The Devons followed next, at 5*s.* 10*d.* to 6*s.*; the Herefords ruled at 5*s.* 8*d.* to 5*s.* 10*d.*; and the Shorthorns 5*s.* 6*d.* to 5*s.* 10*d.* per stone. Best Downs realised 6*s.* 4*d.* to 6*s.* 6*d.*; half-breds, 6*s.* to 6*s.* 4*d.* Compared with last year's market the cattle prices ruled rather lower, and the sheep much lower. The total supplies of beasts were 4990; of sheep there were 4940.—On Thursday trade was firm. Beasts sold at full prices, and sheep were quite as dear. Calves and pigs were about the same.

HAY.

Tuesday's Whitechapel Market report states that there was a moderate supply, with better inquiry for the prime sorts of hay and Clover. Quotations:—Clover, prime, 90*s.* to 107*s.*; inferior, 46*s.* to 73*s.*; prime second cut, 90*s.* to 107*s.*; hay, prime, 80*s.* to 90*s.*; inferior, 30*s.* to 63*s.*; and straw, 22*s.* to 34*s.* per load.—On Thursday there was a fair supply, and trade was rather better.—The Cumberland Market report states that trade was firm, with fair supply and larger demand. Quotations:—Clover, best, 98*s.* to 108*s.*; interior, 50*s.* to 70*s.*; meadow hay, best, 80*s.* to 84*s.*; inferior, 50*s.* to 70*s.*; and straw, 26*s.* to 34*s.* per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there has been an adequate supply, and good trade. Quotations:—Kent Regents, 76*s.* to 80*s.*; Scotch ditto, 86*s.* to 100*s.*; Essex Shaws, 50*s.* to 70*s.*; Victorias, 70*s.* to 90*s.*; Magnum Bonums, 50*s.* to 80*s.*; Champions, 50*s.* to 60*s.*; and French, 40*s.* to 50*s.* per ton.—The imports into London last week consisted of 33 bags from Rotterdam, 109 sacks from Rouen, and 83 tons from Pontrieux.

COALS.

The following are the prices current at market during the week:—East Wylam, 15*s.* 6*d.*; Walls End—Tyne (unscreened), 11*s.* 3*d.*; Hetton, 17*s.*; Hetton Lyons, 15*s.*; Chilton Tees, 15*s.* 6*d.*; Hartlepool, 16*s.*; Hulam, 15*s.* 3*d.*; East Hartlepool, 16*s.* 3*d.*; South Hartlepool, 15*s.* 3*d.*; Tees, 17*s.*; Harton, 15*s.*; Lambton, 16*s.* 6*d.*; Wear, 15*s.*

IMPORTANT NOTICE.

TO ADVERTISERS.

In consequence of the Christmas Holidays, the GARDENERS' CHRONICLE for next Saturday, December 27, will be published on Wednesday the 24th inst. at 2 p.m. Advertisements for that Number must reach the Office not later than TUESDAY morning, the 23d inst.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

BIRCH, 4 to 5 feet, 50s. per 1000; ELM, English, 4 to 6 feet, 50s. per 1000; QUICK, strong 5-yr. old, transplanted, 30s. per 1000; PINUS LARICIO, 1½ to 2 feet, 15s. per 1000; FIR, Scotch, about 2 feet, 25s. per 1000.
C. BUTLER, Nurseryman, &c., Wellington, Salop.

ABIES DOUGLASII, 1½ to 2 feet, 25s. per 100; 2 to 2½ feet, 33s. per 100; 3 to 4 feet, 60s. per 100; by the thousand, finely finished and rooted. ARAUCARIA IMBRICATA, 18 to 20 inches, 24s. per dozen; 2 to 2½ feet, 42s. per dozen; 3 feet, extra, 6s. per dozen; each size by the thousand. CEDRUS DEODARA, 4 to 5 feet, 30s. per dozen. CRYPTOMERIA ELEGANS. 2 to 2½ feet. 60s. per 100. CUPRESSUS LAWSONII, 2½ to 3 feet, 60s. per 100; C. GRACILIS, distinct, 1½ foot, 12s. per dozen; C. STRICTA, 2 to 2½ feet, the finest upright, 12s. per dozen; C. FUNEBRIS, scarce, 1½ foot, 15s. per dozen. PICEA NOBILIS, 3 to 4 feet, 60s. per dozen; P. NORDMANNIANA, 1 foot, fine, 50s. per 100; 1½ to 2 feet. 15s. per dozen; 6 feet, extra, 84s. per dozen; P. LASIOCARPA, 4 to 4½ feet, 70s. per dozen; P. WEBBIANA, 3 to 3½ feet, true, 84s. per dozen. PINUS EXCELSA, 2 feet, 8s. per dozen; P. INSIGNIS, 1 foot, 30s. per 100; 6 to 8 inches, 16s. per 100 THUIA LOBBII, 10 to 15 inches: special by the 1000, the best substitute for Larch. THUIOPSIS DOLABRATA, extra, 6s. per dozen. RHODODENDRON PONTICUM, 1 to 4 feet, each size in thousands.
GARLIES MITCHELL, Nurseryman, Stranraer, N.B.

SPECIAL CHEAP OFFER.—ALDER, ASH, BIRCH, ELM, Austrian PINE, MAPLE, OAK (English), PRIVET ovalifolia, PRIVET Evergreen. All the above good stout stuff, from 2 to 4 feet. POPLAR in variety, from 4 to 10 feet; THORN QUICK, 3, 4, and 5 feet; YEWS, extra strong; SYCAMORES, 3 to 6 feet; BERBERIS AQUIFOLIA, 1½ to 2 feet; CUPRESSUS, various, 2 to 10 feet; Golden ELDER, Ribes CURRANTS, Sweet BRIERS, HOLLIES in variety, from 1 to 9 feet: splendid stuff, all recently transplanted, IVIES in variety. LAURELS in sorts, 2 to 4 feet; LILACS, 3 to 5 feet; RETINOSPORAS, in sorts, 1 to 6 feet; English YEWS, 2 to 4 feet, fine stuff; AZALEA PONTICA, 1 to 3 feet; RHODODENDRONS, for covert and other planting, from 1 inch to 3 feet; several hundred thousand choice named RHODODENDRONS, in good sized plants; Cunningham's White CAUCASICUM PICTUM JACKSONIANA. &c. Double Yellow and White PRIMROSES.
For price and particulars apply to
ISAAC MATTHEWS AND SON, The Nurseries, Milton, Stoke-on-Trent.

Notice.

CUT LILIES of the VALLEY and MAIDENHAIR FERN. I beg to inform my Customers and the Trade generally that daily supplies of the above can be sent from December 22. Particulars on application. A few hundred ADIANTUM GRACILLIMUM in 48 pots, at 6s. per dozen, cash.
T. JANNOCH, The Lily Nursery, Dersingham, Norfolk.

SPECIAL OFFER.—Extra fine Dwarf-trained APRICOTS, fruiting trees, 5 to 6 feet high, and 4 to 5 feet wide, will remove with good fibrous roots, 5s., 7s. 6d. to 10s. 6d. each. Extra fine Dwarf-trained Royal George PEACH, fruiting trees, 5s. to 7s. 6d. each. Elcombe's Improved PARSNIP: this very popular variety was sent out by us some years since and has proved a great success (see *Gardeners' Chronicle* for Nov. 29, 1884, p. 694). We offer True Stock Seed from selected roots: trade Price on application.
ELCOMBE AND SON, Nurserymen and Seed Merchants, Romsey, Hants.

Orchids.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have at present a grand stock of DENDROBIUMS, in variety, and other East Indian ORCHIDS, also CATTLEYAS and other valuable ORCHIDS from South America, and they are constantly receiving fresh importations. Price LISTS and full particulars on application.
The MANAGER, The Vineyard and Nurseries, Garston, Liverpool.

Grape Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

The Subscriber can still Offer

ROSES, Dwarf, on Manetti, very fine plants, all good sorts, at 21s. per 100, £9 per 1000; MANETTI STOCKS, extra good, 25s. per 1000, £10 10s. per 10 000; ASPARAGUS, very fine plants, 2-yr., 9s.; 3-yr., 12s. 6d.; 4-yr., 17s. 6d.; all at per 1000. The best that money can buy. For cash with order.
R. LOCKE, The Royal Rose Farms, Redhill, Surrey.

ANDRÉ LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London, *viâ* Honfleur, about 2s. 6d. per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1878.
Orders must be addressed to Messrs. WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

SPECIAL OFFER.
ROSES, Standard, Half-Standard, Gloire de Dijon (dwarfs), Général Jacqueminot (dwarfs).
LARCH, 1 to 5 feet.
SPANISH, 2 to 6 feet.
ALDER, 2 to 4 feet.
HAZEL, 2 to 4 feet.
FIR, Scotch, 1 foot.
MANETTI STOCKS.
WOOD'S GARLAND STOCKS.
Prices on application.
WILLIAM FLETCHER, Mersham Nurseries, Chertsey.

Aquatics.

J. V. REES (late Robert Parker) has the finest Collection of above in the country, and can supply Hardy Herbaceous and Alpine Plants, in 100 showy varieties, from 50s.
New CATALOGUE now ready.
Exotic Nursery, Tooting, Surrey. S.W.

To the Trade
SEED POTATOS.

H. AND F. SHARPE'S Wholesale Priced LIST of SEED POTATOS is now ready, and can be had on application. It comprises the best kinds in cultivation, and the prices are very reasonable.
Seed Growing Establishment, Wisbech.

CHRYSANTHEMUMS. — Speciality.— 420 varieties, guaranteed true to name. One of the largest and cheapest Collections in the Trade. Plants, purchaser's selection, 2s. 6d. per dozen, 16s. per 100; cuttings, 1s. 6d. per dozen, 10s. per 100; W. E.'s selection, cheaper. For the new English and Continental varieties see CATALOGUE, with Essay on Cultivation, one stamp. Inspection invited.
W. ETHERINGTON, The Manor House, Swanscombe, Kent.

Notice of Removal.

NUTTING AND SONS beg to give notice that owing to the expiration of the lease of 60, Barbican, they have removed to more extensive premises,
105, SOUTHWARK STREET, S.E.,
where all communications should be addressed.
NUTTING AND SONS, Wholesale Seed Merchants, London, S.E.

FERNS A SPECIALITY.

Hundreds of Thousands of
FERNS AND SELAGINELLAS,
for Stove and Greenhouse Cultivation, and Outdoor Ferneries,
ABRIDGED CATALOGUE
of over 1200 Species and Varieties free on application.
LARGE CATALOGUE (Price 1s.), containing 75 Illustrations of Ferns and Selaginellas, valuable "Hints on Fern Culture," and other useful and interesting information.

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FERN NURSERY, SALE, MANCHESTER.

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The Strongest, Healthiest, and Finest Plants ever offered.
STANDARDS and HALF-STANDARDS, best sorts, 18s. per dozen, 120s. per 100.
DWARF STANDARDS, 12s. per dozen.
DWARFS, LARGE BUSHES, 9s per dozen, 60s. per 100.
A Descriptive CATALOGUE Post-free to applicants.

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THE ROSE GROWER, THE MILE END NURSERIES, COLCHESTER.
The Winner of over 150 First Prizes for Roses. Customers are respectfully invited to come and select their own Plants.

WHITE PAMPAS PLUMES,
18 to 24 inches long, $35 per 1000.
24 to 30 inches long, $5 per 100.

BALES of TOBACCO STEMS, weighing 500 lb., $20 per bale, 3 bales for $50.
Cash with order, or reference to
H. WATERER,
3809, Pewelton Avenue, Philadelphia, U.S.A.

12-oz Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &C.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6s. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15s. per ton per Truck. Sample Bag, 5s; 5 Bags, 22s. 6d.; 10 Bags, 45s. Bags included. Fresh SPHAGNUM, 10s 6d. per Bag.
SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons.
WALKER AND CO., Farnborough Station, Hants.

EUREKA INSECTICIDE.—The only Insecticide worth using. Recommended by the Principal Gardeners in Scotland. The only Insecticide awarded Diploma, Forestry Exhibition, Edinburgh.—Wholesale Agents, CORRY, SOPER, FOWLER AND CO., Finsbury Street, London, E.C.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE.,
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4 bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton, 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—H. G. SMYTH, 21, Goldsmith's Street Drury Lane (lately called 17A, Coal Yard), W.C.

GARDEN REQUISITES as supplied to the Royal Gardens.—Best Quality. Cocoa-Nut Fibre Refuse, 1s. per sack; 30 for 25s.—bags included. Trucks (containing 2 Tons) 25s., free on Rail. Best Brown Fibrous Kent Peat, 5s. per sack; 5 for 22s. 6d.; 10 for 35s. Black Fibrous Peat, 3s. 6d. per sack; 10 for 30s. Coarse Bedford Sand, 1s 3d. per bushel; 12s. per ½ ton; 22s. per ton. Loam, Leaf-Mould, and Peat-Mould, 1s. per bushel. Guano, Crushed Bones, &c. Finest Tobacco Cloth, 8d. per lb.; 28 lb. for 18s. Specialité Tobacco Paper, 10d. per lb.; 28 lb. for 21s.; 70s. per cwt. Second quality, 7d. per lb.; 28 lb for 16s. Archangel and Petersburgh Mats.
Price LIST sent free. Special quotations to the Trade for cash.
W. HERBERT AND CO.,
HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, S.E. (near London Bridge).

KEEL'S GARDENERS' FRIEND and BLIGHT DESTROYER.—Best winter dressing for Peach Trees, &c. No painting nor washing required. Syringe as directed with Keel's Insecticide. Wonderful results—destroys all Blight—imparts no flavour to Fruit—clean, healthy, and very cheap. Send orders early to W. G. KEEL, Newton St. Loe, near Bristol (late Keel & Hawes, Bath); or to Nurserymen. Empties to Bath Station.



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TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included)
PEAT, best brown fibrous .. 4s 6d. per sack; 5 sacks for 20s.
PEAT, best black fibrous .. 3s 6d. ,, 5 sacks for 15s.
PEAT, extra selected Orchid 5s. 0d. ,,
LOAM, best yellow fibrous ..
PREPARED COMPOST, best
LEAF MOULD, best only .. } 1s. per bush. (sacks included).
PEAT MOULD ,, ..
SILVER SAND, coarse, 1s. 3d. per bush., 12s. half ton, 22s. ton
RAFFIA FIBRE, best only.. .. .. 8d. per lb.
TOBACCO CLOTH, finest imported .. 8d. lb., 28 lb. 18s.
TOBACCO PAPER ,, (Spécialité) 8d. lb., 28 lb. 18s.
MUSHROOM SPAWN, finest Milltrack.. 5s. per bushel.
SPHAGNUM MOSS, all selected 2s. per bush., 6s. per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. each; 10 sacks, 9s.; 15 sacks, 13s.; 20 sacks, 17s; 30 sacks, 25s.; 40 sacks, 30s. Truck-load, loose, free on rail, 30s. Limited quantities of G., special quality, granulated, in sacks only, 2s. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to
THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

FIR TREE OIL INSECTICIDE (Soluble in Water)

Effectually clears all Insects and Parasites from the Roots or Foliage of Trees and Plants. Kills all Vegetable Grubs, Turnip Fly, &c. Cures Mildew and Blight. Clears Grapes from Mealy Bug, &c., and makes a good Winter Dressing. Of all Seedsmen and Chemists, 1/6, 2/6, 4/6 a bottle. Per gallon 12/6, or less in larger quantities. *A Treatise on "Fir Tree Oil," and its application, sent free on receipt of address, by the Manufacturer,* E. GRIFFITHS HUGHES, MANCHESTER. Wholesale from HOOPER & Co.; CORRY, SOPER, FOWLER and Co.; C. E. OSMAN & Co., and from all the London Seed Merchants and Wholesale Patent Medicine Houses.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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WATSON AND SCULL, 90, Lower Thames St, London, E.C.

SPECIAL NOTICE.

THE

GARDENERS' CHRONICLE

FOR

SATURDAY, JANUARY 3, 1885,

WILL CONTAIN A BEAUTIFULLY

COLOURED ALMANAC

(18 inches by 13 inches),

FROM AN ORIGINAL DESIGN.

PRICE FIVEPENCE; POST-FREE, FIVEPENCE-HALFPENNY;

OR WITH

ALMANAC MOUNTED ON OAK ROLLERS,

READY TO BE HUNG UP, AND ENCLOSED IN CASE,

SEVENPENCE; POST-FREE, EIGHTPENCE-HALFPENNY.

Purchasers are specially recommended to order the Almanac in a Case,

TO PREVENT INJURY FROM FOLDING.

The Publisher cannot be responsible for injury to the Almanac unless it is so protected.

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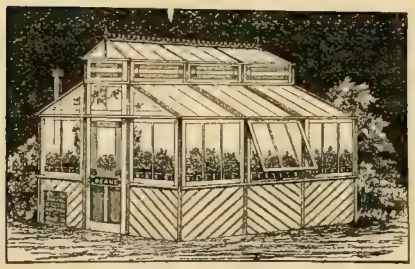
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(*Design Registered, No.* 14 865.)



10 ft. long, 8 ft. wide, 10 ft. 6 in. high.

Price complete, with lantern roof, staging, coloured glass in lantern and door, ventilating lights in side and lantern, gutter and down pipe, and Loughborough Hot-water Apparatus, with 15 feet of 4-inch pipe.

£25 nett.

"GEM" CONSERVATORY, as above, 12 feet long, 8 feet wide, £28 nett.

Erected complete within 15 miles of London Bridge, or delivered carriage free to any Station in England, with every part marked for fixing.

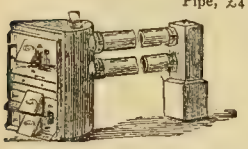
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"A marvel of economy."—*Gardeners' Magazine.*
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DESIGNS and ESTIMATES for CONSERVATORIES, GREENHOUSES and HORTICULTURAL BUILDINGS of EVERY DESCRIPTION FREE.

THE LOUGHBOROUGH HOT-WATER APPARATUS.

Complete as shown, with 12 feet of 4-inch Hot-water Pipe, £4 4s.



Delivered free to any Station. Discount for Cash.

The simplest, cheapest, and most powerful apparatus made. It requires no brick setting, no stokehole, and no hot-water fitter for fixing, and burns more than twelve hours without attention.

Loughborough Boilers to heat up to 650 feet of 4 inch pipe, with hot-water pipes, joints, &c., always in stock.

COST OF APPARATUS FOR HOUSES OF ANY SIZE ON APPLICATION.

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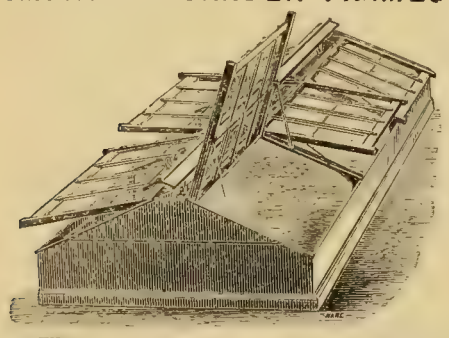
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HORTICULTURAL BUILDERS
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Plans and Estimates on application for every description of Horticultural Buildings in Wood or Iron.

Garden Frames and Sashes in Stock.

RICHARDSON'S IMPROVED GARDEN FRAMES



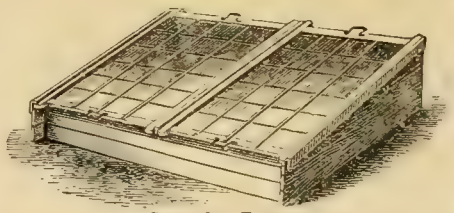
WITH ADJUSTABLE RIDGE VENTILATION.

Lights can be instantly removed or fixed open at any angle without interfering with the plants.

CARRIAGE PAID TO ANY STATION. APPLY FOR PRICE LIST TO

W. RICHARDSON & CO.,

Horticultural Builders & Hot-water Engineers,
DARLINGTON.



Cucumber Frames.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices, delivered to any station in England:—

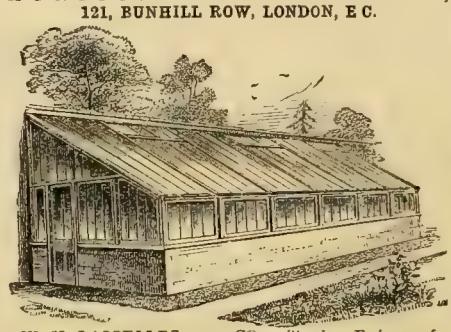
		£ s. d.
2-light frame, 8 feet by 6 feet	Packing Cases free	3 10 0
3-light frame, 12 feet by 6 feet		5 5 0
6-light frame, 24 feet by 6 feet		10 0 0

The glass is nailed and puttied in. Lights and framing for brick pits at proportionately low prices.

R. HALLIDAY AND CO., Hothouse Builders and Engineers, Royal Horticultural Works, Middleton, Manchester.

W. H. LASCELLES & CO.,

HORTICULTURAL BUILDERS,
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W. H. LASCELLES AND CO. will give Estimates for every description of HORTICULTURAL WORK, free of charge, and send competent assistants when necessary.

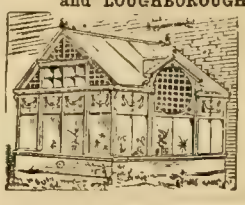
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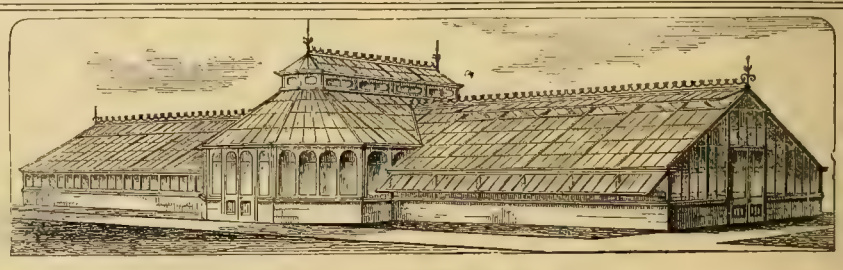
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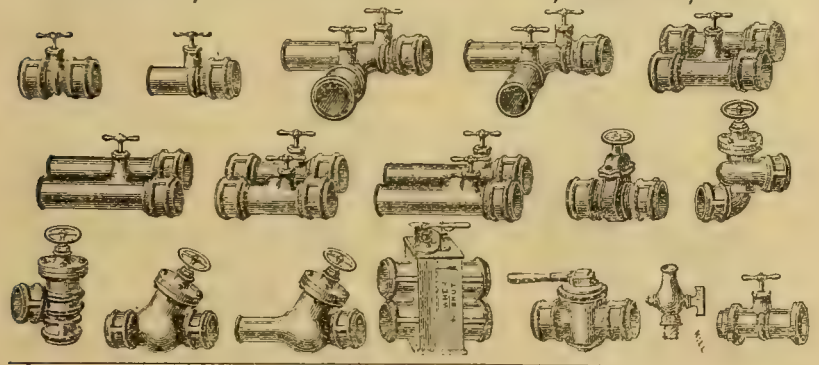
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IMPORTANT NOTICE.

TO ADVERTISERS.

In consequence of the Christmas Holidays, the GARDENERS' CHRONICLE for next Saturday, December 27, will be published on Wednesday the 24th inst. at 2 p.m. Advertisements for that Number must reach the Office not later than TUESDAY morning, the 23d inst.

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Horticultural Engineers to Her Majesty the Queen,

CALL SPECIAL ATTENTION TO THEIR

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WROUGHT-IRON TUBULAR

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And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS;

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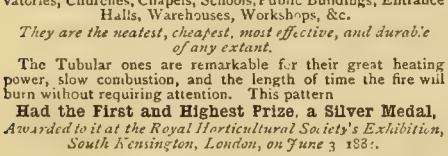
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They are the neatest, cheapest, most effective, and durable of any extant.

The Tubular ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention. This pattern

Had the First and Highest Prize, a Silver Medal,

Awarded to it at the Royal Horticultural Society's Exhibition, South Kensington, London, on June 3 1884.



The *Journal of Horticulture* of June 9 says:—

"HEATING APPARATUS.—A great number of boilers, valves, &c, were exhibited by eight competitors, and considerable interest was manifested in the verdict of the judges, and much discussion was brought to bear on the merits and shortcomings of the different boilers. The apparatus for which the Silver Medal was awarded was a wrought-iron saddle boiler, with a series of intersecting tubes, somewhat in the form of a letter X, but the tubes in ogee form, in the crown of the boiler. Most gardeners who examined the boiler expressed a favourable opinion of it. It is no doubt a quick and powerful boiler without being complex, the latter condition having, no doubt, had weight with the judges."

The *Garden* of June 11 says:—

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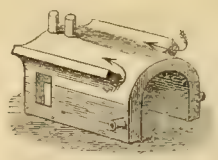


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D,	26 in.	500 ,,	9 10 0
E,	28 in.	600 ,,	10 15 0
F,	32 in.	700 ,,	12 5 0
G,	36 in.	850 ,,	13 15 0
H,	42 in.	1000 ,,	15 10 0
I,	48 in.	1250 ,,	17 5 0
J,	54 in.	1620 ,,	19 10 0
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* Comprises full size double furnace door, ashpit door and regulator, cranked dead plate, bearing bars, fire bars, three cleaning doors, damper, &c.

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Out of a great number in use of these Boilers not one has been complained of. It will last out three wrought-iron Boilers.

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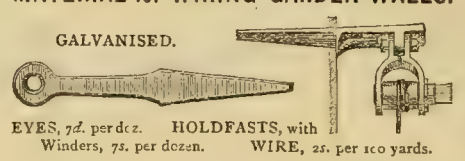
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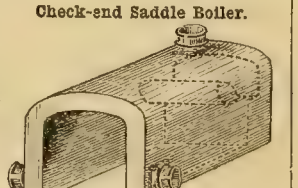
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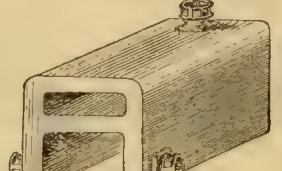
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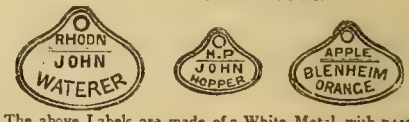
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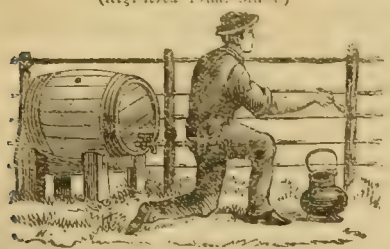
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**** Gardeners and others seeking situations are WARNED to be careful in their dealings with so-called Horticultural Agents, and are CAUTIONED NOT to SEND STAMPS or MONEY to any Agent unless they have good reason to know that he is a responsible man, likely to be able to fulfil his engagements.*

They are also specially advised not to send ORIGINAL TESTIMONIALS to Advertisers who may be unknown to them, without a special application for the same by letter.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St John's Nurseries, Worcester.

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GARDENER (HEAD).—W. J. IRELAND, Gardener, Headfort House, would be happy to recommend to any Nobleman or Gentleman a thoroughly trustworthy and energetic man as above. Fourteen years' practical experience in some of the leading English Gardens, and now Foreman at Headfort House. Good character from past and present situations, and has also the honour of referring to the Marquis of Headfort, Headfort House, Kells, Co. Meath.

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Pods 21 inches long.
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Agent for Manchester—JOHN HEYWOOD. Agents for Scotland—Messrs. J. MENZIES & Co., Edinburgh and Glasgow.

THE

GARDENERS' CHRONICLE.

Established 1841.

No. 574.—Vol. XXII. { New Series. } SATURDAY, DECEMBER 27, 1884. { Registered at the General Post-office as a Newspaper. WITH SUPPLEMENT. } Price 5d. Post-free, 5½d.

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SPECIAL NOTICE.

THE GARDENERS' CHRONICLE for Saturday next, JANUARY 3, 1885, will contain a beautifully COLOURED ALMANAC (18 by 13 inches), from an original design.

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Applications for space should be sent in as early as possible.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.

DATES of the PROMENADE PLANT and FLOWER SHOWS to be held in the Conservatory during 1885:—

Tuesday,	March	10	Promenade Show
,,	,,	24	Promenade Show
,,	April	14	Promenade Show
,,	,,	21	National Auricula Society's Show
,,	,,	28	Promenade Show
,,	May	12	Promenade Show
,,	,,	26	Show of Pot Roses, Azaleas, &c.
,,	June	9	Show of Orchids, &c.
,,	,,	23	Show of Pelargoniums, &c
,,	July	7	National Rose Society's Show. Roses
,,	,,	14	Show of Plants and Flowers
,,	,,	28	National Carnation and Picotee Society's Show, and Show of Begonias, &c.
,,	August	11	Show of Plants and Flowers
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Tuesday,	September	8	Show of Dahlias, Grapes, &c.
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LINCOLN CHRYSANTHEMUM SOCIETY.

The THIRD ANNUAL EXHIBITION will be held in the Corn Exchange, Lincoln, on NOVEMBER 17 and 18, 1885. A First Prize of £10, Second of £5, and Third of £2 for Forty-eight Cut Blooms, open to all comers. For Schedules, apply to Dr. G. M. LOWE, Castle Hill, Lincoln; or to Mr. C. W. PENNELL, Gowt's Bridge, Lincoln, Hon. Secs.

HULL and EAST RIDING CHRYSANTHEMUM SOCIETY.

The SECOND ANNUAL GRAND CHRYSANTHEMUM EXHIBITION will be held on THURSDAY and FRIDAY, November 19 and 20, 1885. Handsome Prizes will be offered to attract growers from a distance. Schedules are in course of preparation, and may be had from

R. FALCONER JAMESON, WM. HAWKSWORTH, } Hon. Secs.
Queen's Dock, Hull.

Trade Catalogue for 1885.

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39, King William Street, London Bridge, E.C.

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BASKETS and LABELS supplied.

WISE AND RIDES, Covent Garden, W.C., beg to inform Senders that GARDENIAS, EUCHARIS, and STEPHANOTIS are in demand.

WISE AND RIDES, Covent Garden, W.C., have now a demand for Tuberoses, Arum Lilies, White Bouvardias, good Roses, Chrysanthemums, &c.

WISE AND RIDES, Covent Garden, W.C., are open to RECEIVE CONSIGNMENTS of Tomatos, Cucumbers, Gros Colmar, Alicante, and Muscat Grapes.

WANTED, Ten Extra large CLIMBERS, to cover the Pillars and furnish the Roof of a High Conservatory, such as LAPAGERIA ALBA and ROSEA, ACACIAS, COBCEAS, &c. Particulars to
WM. CUTBUSH AND SON, Limited, Highgate Nurseries, London, N.

WANTED, Three large, trained, Pine-apple NECTARINES. State size and price to THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, The Vineyard, Garston, Liverpool.

WANTED, TURF, per 100, 3 feet by 1 foot; EUONYMUS, PRIVET (OVALIFOLIUM only—no other kind), CUPRESSUS MACROCARPA. Send prices to W. WILLETT'S Estate Offices, 61, The Drive, Hove, Sussex, including carraige and delivery free to West Brighton Station.

Now Ready, in crown 8vo, price 1s.; post-free, 1s. 3d.,

THE HORTICULTURAL DIRECTORY for 1885. The "Horticultural Directory" is a complete Register of the Addresses of all the most important Establishments and Persons connected with Horticulture in the United Kingdom and on the Continent.
Journal of Horticulture Office, 171, Fleet Street, E.C.

STRONG MANETTI STOCKS, fit for immediate working, 25s. per 1000, £10 per 10,000.
A. M. C. JONGKINDT CONINCK, Dedemsvaart, by Zwolle, Holland.

LARCH.—1,000,000 to offer, Cheap, lifted last Spring. All strong, with good roots: 3 to 4 feet, 16s.; 4 to 5 feet, 18s.; 5 feet, 20s. per 1000. Apply
FRANCIS BELL, Nurseries, Easingwold.—Nov. 8, 1884.

GREAT CLEARANCE SALE of BULBS, all in fine condition.—Greatly reduced prices. LIST free on application to
BARR AND SON, King Street, Covent Garden, W.C.

Tea Roses.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of TEA ROSES in pots. Their plants have been carefully ripened, and are ready to start immediately into growth.
CATALOGUES free. The Trade supplied.

To Osier Growers, Basket Makers, and Nurserymen.

BRADFORD AND SONS, Yeovil, Somerset, now Grow and Cut yearly 100 acres and upwards of OSIER BEDS, and will quote prices to the Trade, according to quantity required.
Samples and prices of Osier "Sets" on application.

DAHLIA TUBERS.—All the best varieties of the following sections:—Show, Fancy, and Pompons, Singles; also Cactus and Semi-Cactus varieties. Special offer may be had upon application to
THOMAS S. WARE, Hale Farm Nurseries, Tottenham, London.

BIRCH, 4 to 5 feet, 50s. per 1000; ELM, English, 4 to 6 feet, 50s. per 1000; QUICK, strong 5-yr. old, transplanted, 30s. per 1000; PINUS LARICIO, 1½ to 2 feet, 15s. per 1000; FIR, Scotch, about 2 feet, 25s. per 1000.
C. BUTLER, Nurseryman, &c., Wellington, Salop.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6s., 9s., 12s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

"GLOIRE DE NANCY" CARNATION, the best white Clove in cultivation, 60s. per 100, 8s. per dozen. MRS. SINKINS, the best white Clove Pink, 30s. per 100, 4s. per dozen. OLD CRIMSON CLOVE, 30s. per 100, 4s. per dozen. All strong plants, established in pots.
POUNCE'S Nursery, Hendon, near London, N.W.

HERBACEOUS and ALPINE PLANTS.—Now is the season to plant and insure success. Write for R. H. VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection.
Chad Valley Nurseries, Edgbaston, Birmingham.

NEW CHRYSANTHEMUMS.—Orders are now being booked for the New Varieties of 1884 at 10s. per doz.; Cuttings, 1883 Varieties, 4s. per doz.; best Old Varieties, 1s. 6d. per doz., my selection. Post-free for P.O. CATALOGUE one stamp.—R. OWEN, Floral Nurseries, Maidenhead.

To the Trade.

NUTTING AND SONS' Wholesale CATALOGUE of Garden and Flower Seeds, containing complete Lists of Novelties for 1885, has been posted to all their friends; if not duly received, please inform them, and another copy shall be sent.
Seed Warehouses, 106, Southwark Street, London, S.E.

LILIUM KRAMERI.—Good flowering Bulbs of this handsome and scarce Lily can now be supplied by the dozen or hundred.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

To the Trade.

WAITE, NASH, HUGGINS AND CO. have Posted their General CATALOGUE to all their Customers. If not received another Copy will be sent on application. 79, Southwark Street, London, S.E.

FOR SALE, 30,000 Struck Cuttings of GENISTAS, at 6s. per 100, or 3s. 6d. for 50. Will be sent on by Parcels Post on receipt of Post-office Order payable at Leyton Green. Plants, in 5-inch pots, 36s. per 100, 7s. per dozen.
T. BALDWIN, Sen., Edith Nursery, Burchall Road, Leyton

Roses and Fruit Trees.

IRELAND AND THOMSON beg to announce that their stock of the above is this year specially fine and now ready to send out. Descriptive CATALOGUE with prices on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

GOOSEBERRY TREES and Carter's Prolific RASPBERRY.—Strong 2 and 3-yr. old Lancashire Lads amd Raspberry Canes for Sale.—Apply to
W. WARREN, Worton Gardens, Isleworth, W.

SALES BY AUCTION.

Tuesday Next.—(Sale No. 6805.)
5000 LILIUM AURATUM from Japan, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on TUESDAY NEXT, December 30, at half-past 12 o'Clock precisely, an importation of 5000 LILIUM AURATUM, just received from Japan, in fine condition; 5000 TUBEROSES from South Africa, 2000 TIGRIDIA GRANDIFLORA, a quantity of LILIUM COLCHICUM from the Caucasus, L. HUMBOLDTII, LILY of the VALLEY, HELLEBORUS in fine condition, English-grown LILIES, 2000 GLADIOLUS GANDAVENSIS, DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next—(Sale No. 6806.)
ROSES, FRUIT TREES, BULBS, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, December 31, at half-past 12 o'Clock precisely, first-class Standard and Dwarf ROSES to name, Pyramid and Dwarf-trained FRUIT TREES, of sorts, in great variety; Ornamental CONIFERS, Border PLANTS, GLADIOLI, a few choice LILIES, and a large assortment of First-class DUTCH BULBS.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6807.)
AERIDES SANDERIANA.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 1, by order of Mr. F. Sander, a very grand importation of this new and very magnificent AERIDES, a probably new CATTLEYA, from Columbia; a small but fine lot of AERIDES REICHENBACHIANA, very rare and fine; ODONTOGLOSSUM ROSEUM, ONCIDIUM PHALÆNOPSIS, a very fine batch of ODONTOGLOSSUM MINIATUM, and a plant of a new and superb ODONTOGLOSSUM in the way of CORONARIUM, of which a drawing will be shown; together with many other importations.

On view morning of Sale, and Catalogues had.

Monday, January 5.—(Sale No. 6810.)
LARGE LILY SALE.
1000 LILIUM SZOVITZIANUM,
500 ENORMOUS LILIUM AURATUM.

Hundreds of the best Japanese LILIES, including coridion, concolor, Hansoni, Leichtlini, &c., unusually large, and in finest possible condition; have been for the last two months in England, and having been specially prepared for planting are equal to home-grown bulbs. Also a small collection of other rare LILIES, CYPRIPEDIUM JAPONICUM, a few choice ZAMIAS, just received from the Cape, with other rare Bulbs and Roots.

MR. J. C. STEVENS has received instructions from the New Plant and Bulb Company to SELL the above bs AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C, on MONDAY, January 5, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next—10,000 Lilium auratum.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, January 1, 10,000 unusually fine bulbs of LILIUM AURATUM from Japan, just received in splendid condition.

Thursday Next.—Lilies, Roses, and Bulbs.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, January 1, 1885, at half-past 12 o'Clock precisely, 10,000 unusually fine and fresh Bulbs of LILIUM AURATUM, received direct from Japan; 32,000 splendid Bulbs of Double African TUBEROSES, 400 Standard and other ROSES of the best sorts, from an English nursery; a choice assortment of hardy English-grown LILIES and BULBS in all the leading varieties, 2000 LILY of the VALLEY, 500 Double Scarlet ANEMONE FULGENS, and other ROOTS.

On view morning of Sale, and Catalogues had.

Thursday Next.—32,000 Tuberoses.
IMPORTANT TO THE TRADE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, January 1, 34 casks of Double African TUBEROSES, very fine bulbs. One cask in a lot, each containing about 1000 bulbs.

Friday Next.
CATTLEYA MAXIMA, dark Peru variety.
ODONTOGLOSSUM RETUSUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 2, 1885, at half-past 12 o'Clock precisely, the above, together with a very large consignment of other ORCHIDS.

On view morning of Sale, and Catalogues had.

The Fallowfield Collection of Orchids.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY, January 6, a further portion of the above valuable collection of ESTABLISHED ORCHIDS. Fuller particulars will appear next week.

TO BE SOLD, a FREEHOLD FARM, comprising House, Barn, Stables, and other Outbuildings, and 8 Closes, containing about 20 acres of good Land, suitable for a Fancy Farm, Hunting Stables, Nursery Grounds, or Building Sites for good Villas. Prettily situated on the south side of Rugby, and about a mile from Rugby School. A bargain for a practical Market Gardener. Apply to the owners, Messrs. ABEL AND SON, Alexandra House, Harrogate.

A Rare Opportunity for Nurserymen.

TO BE SOLD, by Private Treaty, owing to the death of the owner, ELM GROVE NURSERIES, Newry, Ireland. These well known Nurseries are at present well stocked, and for nearly fifty years the proprietors (Messrs. M. Grant & Co.) carried on a splendid business.

For particulars apply to THOS. J. MARRON, Solicitor, Newry, Co. Down.

To Market Gardeners and Nurserymen.

TO LET, with Possession, about 6½ Acres of LAND, with a House, Stabling, and Sheds, at Kingston Vale, on the main road from Kingston to London, and about 2 miles from Putney. For particulars apply to Messrs. CLUTTON, 9, Whitehall Place, S.W.

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

JOHN KENNARD'S HORTICULTURAL SUNDRIES, Peat, Loam, Sand, and Berkshire Pottery Depot. Catalogue post-free of every Horticultural Requisite. Swan Place, Old Kent Road, S.E. Established 1854.

Special Cheap Offer of

LARCH, 2 to 5 feet, a large quantity to be sold to clear ground; stout, well-rooted, transplanted. Favourable terms to the Trade.
GEO. CHORLEY, Coaster's Nursery, Midhurst.

Wholesale List of Vegetable Seeds.

H. AND F. SHARPE have Posted their GENERAL TRADE LIST, and will feel obliged if those houses who have not received it will inform them, so that one may be forwarded.
Seed Growing Establishment, Wisbech, Cambridgeshire.

Choice Vegetable and Melon Seeds.

R. GILBERT'S Productions are all stamped with the Hall-mark of Superiority commonly called First-class Certificates. CHOU DE BURGHLEY, 1s. 6d. per packet; UNIVERSAL SAVOY, 2s. 6d. per packet; GILBERT'S BURGHLEY PET MELON, which does not canker, 3-year old seeds, 2s. 6d. per packet. Trade supplied on liberal terms.—Apply to R. GILBERT, High Park Gardens, Stamford. Stamps with order. Post-free.

HOLLY BERRIES for SALE.
Price 6s. per bushel, for Cash.
Apply to GEO. WILSON, Limpsfield, Surrey.

RHUBARB, VICTORIA.—A large number of good Roots to dispose of.
IRELAND AND THOMSON, 20, Waterloo Place, Edinburgh.

Grape Vines—Grape Vines.

IRELAND AND THOMSON have a large and thoroughly ripened stock of the above in Planting and Fruiting Canes. CATALOGUES on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

Notice.

CUT LILIES of the VALLEY and MAIDENHAIR FERN.—I beg to inform my Customers and the Trade generally that daily supplies of the above can be sent from December 22. Particulars on application. A few hundred ADIANTUM GRACILLIMUM in 48 pots, at 6s. per dozen, cash.
T. JANNOCH, The Lily Nursery, Dersingham, Norfolk.

TO PLANTERS OF FOREST AND OTHER TREES.

Cranston's Nursery & Seed Co.
(LIMITED)

Have splendid stocks of transplanted and well-rooted

LARCH FIR	.. ..	1 to 1½ feet.
,, ,,	.. ..	1½ to 2 feet.
,, ,,	.. ..	2 to 2½ feet.
,, ,,	.. ..	2½ to 3 feet.
,, ,,	.. ..	3 to 3½ feet.
,, ,,	.. ..	4 to 5 feet.
SCOTCH FIR	.. ..	2 to 2½ feet.
,, ,,	.. ..	2½ to 3 feet.
THORNS	.. .. ..	2 to 2½ feet.
,,	.. ..	2½ to 3 feet.

&c., &c.,

and will be pleased to quote lowest prices on receipt of a list of requirements.

Full truckloads Carriage Paid to nearest Railway Station.

CATALOGUES on application.

CRANSTON'S NURSERY & SEED CO.
(LIMITED)
KING'S ACRE, near HEREFORD

Lilium auratum, Cypripedium japonicum, Lilium Szovitzianum, L. Hansoni,

And others from Japan, all in magnificent condition L. MARTAGON ALBUM, very large; North American LILIES, CALOCHORTI in variety, CYPRIPEDIA to hand, IRIS, NARCISSI, GLADIOLI, ORCHIDS, BULBS for Spring Planting, &c. NEW ZEALAND SEEDS, Filmy FERNS, and others.
The NEW PLANT AND BULB COMPANY, Colchester.

WHOLESALE SEED CATALOGUE.

We have now published our Wholesale CATALOGUE of Vegetable and Flower Seeds, containing, also, all the best Novelties of the Season. It may be had on application. All our Regular Customers should already have received a Copy by Post; any not having done so will oblige by letting us know.

WATKINS & SIMPSON,
EXETER STREET,
STRAND, W.C.
Seed and Trial Grounds, Feltham and Twickenham, Middlesex.

STEPHEN BROWN, deceased.—Pursuant to Statute 22 & 23 Victoria, caput 35. NOTICE IS HEREBY GIVEN that all persons having any CLAIM AGAINST THE ESTATE of STEPHEN BROWN, late of Weston-super-Mare, in the county of Somerset, Seedsman, Nurseryman, and Florist, who died on the 25th day of November, 1884, and whose Will was proved on the 10th day of December, 1884, in the District Registry attached to the Probate Division of Her Majesty's High Court of Justice at Wells, by Henry Brown, one of the Executors named in the said Will, are requested to SEND IN WRITING the PARTICULARS of THEIR CLAIMS to the undersigned on or before the 31st day of JANUARY, 1885, after which date the said Executor will distribute the assets of the said deceased, having regard only to the Claims of which he shall have had notice.

WM. SMITH, Weston-super-Mare,
Solicitor to the Executor.

Dated this 18th day of December, 1884.

Forest Trees.

IRELAND AND THOMSON have an extensive and healthy stock of Seedling and Transplanted Forest Trees, including Ash, Alder, Birch, Elm, Austrian Pine, from 6 in. to 2½ ft.; Scotch Fir, Larch, Spruce, Black Spruce, Laricio, Beech, Thorns, Maple, Oak, Poplars, Thorn Quick, Chestnuts, Hazel, &c. Special offers on application.
Nurseries: Craigleith, Comely Bank, and New Golden Acre, Granton Road, Edinburgh.

To the Trade Only.

FERNS — FERNS — FERNS.
Adiantum cuneatum, A. trapeziforme, A. gracillimum, Lomaria gibba, Lastrea aristata variegata, Pteris serrulata cristata Cowani, P. serrulata: nice plants in 60's, 20s. per 100.
Adiantum cuneatum, A. gracillimum, A. trapeziforme, in 4 and 4½ inch pots, 40s. to 50s. per 100, according to size; Adiantum Pacotti, in 60's, 30s. per 100; ditto, in 4 and 4½ inch pots, 50s. per 100.
THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, The Vineyard and Nurseries, Garston, Liverpool.

HARRISON AND SONS,
Royal Nurseries, Leicester, have to offer:—
10,000 Strong GOOSEBERRIES, mostly Warringtons.
6,000 IVIES, mostly Irish.
7,000 POPLARS, 6 to 12 feet.
1,000 Standard Horse CHESTNUTS, fine
20,000 Bushy Evergreen PRIVET, 2 to 3 feet.
2,000 AMERICAN ARBOR-VITÆ.
2,000 Common LAURELS, 3 to 4 feet, extra.
1,000 Paul's Crimson THORNS, standards.
1,000 Pyramid APPLES, PEARS, and PLUMS.
1,000 Standard PEARS.
All well grown. Special quotations and samples free.

ASH, common, 2 to 3 feet, clean, 17s. per 1000; 3 to 4 feet, 20s. per 1000. ELMS, 1½ to 2 feet, 14s. per 1000; 2 to 3 feet, 17s. per 1000; English, 3 feet, 25s. per 1000. CHESTNUT, Spanish, 2 to 3 feet, 22s. per 1000; 15 to 20 inches, 16s. per 1000. LARCH, 14 to 24 inches, 12s. 6d. per 1000; 2 to 2½ feet, 16s. per 1000; 3 to 4 feet, 18s. per 1000; 4 to 5 feet, 24s. per 1000. SPRUCE FIR, 1 to 1½ foot, 12s. per 1000; 1½ to 2 feet, 13s. per 1000; 2 to 2½ feet, bushy, 16s. per 1000. SCOTCH FIR, 1-yr., 2 yr. transplanted, 12s. per 1000; 2 to 2½ and 3 feet, 18s. per 1000. SILVER FIR, 4-yr. transplanted, 22s. per 1000. HAZEL, 2 to 3 feet, 20s. per 1000. OAKS, 18 to 20 inches, 16s. per 1000; 2 feet, 20s. per 1000. PRIVET, Evergreen, 2 feet, 15s. per 1000; 1 to 1½ foot, 12s. per 1000; OVALIFOLIUM, 2 to 2½ feet, 30s. per 1000; Oval, 1 foot, 20s. per 1000. SYCAMORE, 1½ to 2 feet, 14s. per 1000. THORNS, 1½ to 2 feet, 12s. 6d. per 1000; 2 to 2½ feet, 10s. per 1000; 3 to 3½ feet, 18s. per 1000.
CATALOGUES on application to
GARLIES MITCHELL, Nurseryman, Stranraer, N.B.

PAUL AND SON, The "Old" Nurseries, Cheshunt, hold very fine stocks of the undermentioned:—
STANDARD TEA ROSES, best kinds.
STANDARD HYBRID PERPETUAL ROSES, vigorous kinds..
DWARF TEA ROSES, on Brier only.
STRONG CLIMBING ROSES, very large plants.
STRONG CLIMBING ROSES, in pots, 8 to 9 feet high.
STRONG DWARF ROSES for Hedges.
STRONG DWARF ROSES for Beds.
POT ROSES, of all sorts and sizes
STRONG STANDARD APPLES, 5 to 6 feet stems.
STRONG STANDARD PEARS, extra fine heads.
STRONG STANDARD PLUMS, including Victorias.
EXTRA FINE HORIZONTAL TRAINED APPLES and PEARS.
EXTRA FINE FAN TRAINED PLUMS and CHERRIES.
STRAWBERRIES, in large and small pots.
GOOSEBERRIES, fine, on 1 foot stems.
CURRANTS, particularly fine Red and White.
CONIFERS, EVERGREENS, and AVENUE PLANTS.
HOLLIES, Green and Variegated, 10 acres at High Beach.
CATALOGUES post-free.

SEAKALE and ASPARAGUS.
Crowns for Forcing. Apply to
WILLIAM BAGLEY, Millshot Farm, Fulham, S.W.

Grape Vines.

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), Limited, have this season a grand stock of Grape Vines, suitable for Fruiting in Pots and Planting in Vineries. CATALOGUES free on application. The Trade supplied.
The Vineyard and Nurseries, Garston, Liverpool.

SPECIAL OFFER.—Extra fine Dwarf-trained APRICOTS, fruiting trees, 5 to 6 feet high, and 4 to 5 feet wide, will remove with good fibrous roots, 5s., 7s. 6d. to 10s. 6d. each. Extra fine Dwarf-trained Royal George PEACH, fruiting trees, 5s. to 7s. 6d. each. Elcombe's Improved PARSNIP: this very popular variety was sent out by us some years since and has proved a great success (see *Gardeners' Chronicle* for Nov. 29, 1884, p. 694). We offer True Stock Seed from selected roots: trade Price on application.
ELCOMBE AND SON, Nurserymen and Seed Merchants, Romsey, Hants.

Grape Vines and Pansies.

JOHN DOWNIE begs to intimate that he has now for Sale very strong Planting and Fruiting Canes, at from 5s. to 15s. each; also Show and Fancy Pansies, from one of the finest collections in cultivation, at 4s., 6s., 9s., and 12s. per dozen.
144, Princes Street, Edinburgh.

B. S. WILLIAMS' SEED NOVELTIES

For 1885.—Post-free.

The following three NOVELTIES are now offered for the first time:—

SALVIA, BLUE BEARD (New).

A very handsome hardy Annual, growing about 18 inches high, of free branching habit, with square stems and Sage-like leaves. The spikes are furnished at the apex with a number of brilliant deep mauve-purple bracts, which give to the plant a most unique appearance. The flowers are produced in a series of whorls, are small, labiate shaped, of a bright purplish colour, with lower lip white. Suitable for large beds and borders, in which it has a very effective appearance. Sow in February. Sold only in sealed packets bearing my trade mark.

Per packet, 1s. 6d.

TOMATO, WILLIAMS' GOLDEN QUEEN (New).

A very large, handsome fruit, of a rich deep golden-yellow colour, slightly ribbed, with smooth skin. This is without exception the finest and richest coloured of all the yellow section, producing fruit as large as the red varieties. It is very prolific, and for culinary purposes is equal to any of the red forms. I have every confidence in recommending this beautiful and useful variety, and feel convinced that it will become a popular favourite.

Awarded a First-class Certificate by the Royal Horticultural Society. Sold only in sealed packets bearing my trade mark.

Per packet, 2s. 6d.

TOMATO, WILLIAMS' RED KING (New).

A very free cropper, fruit large and slightly sutured, smooth and even outline, rich crimson colour, flesh solid and of excellent flavour. Strongly recommended as a most valuable and serviceable variety. Sold only in sealed packets bearing my trade mark.

Per packet, 2s. 6d.

Per Packet.—	s.	d.
BEGONIA hybrida, finest mixed ...	1	6
CHRYSANTHEMUM frutescens, Etoile d'Or	1	0
CHRYSANTHEMUM frutescens, grandiflorum (New)	1	0
CHRYSANTHEMUM segetum grandiflorum	1	0
CYCLAMEN giganteum roseum (New) 3s. 6d. and	5	0
CYCLAMEN persicum, Crimson King (New) .. .. 3s. 6d. and	5	0
COCKSCOMB, Williams' Prize ...	2	6
DAHLIA, Single, choice mixed ...	1	0
DIANTHUS chinensis Heddewigii Brilliant (New)	1	6
GLOXINIA gesnerioides (New) ...	2	6
LUCULIA gratissima	2	6
PRIMULA sinensis fimbriata, Rose Queen (New)	5	0
PYRETHRUM aureum selaginoides ...	1	6
BROCCOLI, Williams' Alexandra ...	1	0
CELERY, Williams' Matchless Red ...	1	0
CELERY, Williams' Matchless White...	1	0
MELON, Basing Park Hybrid (New) ...	2	6
TOMATO, Williams' Ne Plus Ultra (New)	1	6

ILLUSTRATED SEED CATALOGUE for 1885 is now ready and will be forwarded, gratis and post-free, on application.

VICTORIA & PARADISE
UPPER HOLLOWAY, LONDON. N.
NURSERIES.

Notice of Removal.

NUTTING AND SONS beg to give notice that owing to the expiration of the lease of 60, Barbican, they have removed to more extensive premises,
106, SOUTHWARK STREET, S.E.,
where all communications should be addressed.
NUTTING AND SONS, Wholesale Seed Merchants, London, S.E.

CHRYSANTHEMUMS. — Speciality.— 420 varieties, guaranteed true to name. One of the largest and cheapest Collections in the Trade. Plants, purchaser's selection, 2s. 6d. per dozen, 16s. per 100; cuttings, 1s. 6d. per dozen, 10s. per 100; W. E.'s selection, cheaper. For the new English and Continental varieties see CATALOGUE, with Essay on Cultivation, one stamp. Inspection invited.
W. ETHERINGTON, The Manor House, Swanscombe, Kent.

To the Trade.
SEED POTATOS.

H. AND F. SHARPE'S Wholesale Priced LIST of SEED POTATOS is now ready, and can be had on application. It comprises the best kinds in cultivation, and the prices are very reasonable.
Seed Growing Establishment, Wisbech.

Aquatics.

J. V. REES (late Robert Parker) has the finest Collection of above in the country, and can supply Hardy Herbaceous and Alpine Plants, in 100 showy varieties, from 50s.
New CATALOGUE now ready.
Exotic Nursery, Tooting, Surrey, S.W.

SPECIAL OFFER.
ROSES, Standard, Half-Standard, Gloire de Dijon (dwarfs), Général Jacqueminot dwarfs).
LARCH, 1 to 5 feet.
SPANISH, 2 to 6 feet.
ALDER, 2 to 4 feet.
HAZEL, 2 to 4 feet.
FIR, Scotch, 1 foot.
MANETTI STOCKS.
WOOD'S GARLAND STOCKS.
Prices on application.
WILLIAM FLETCHER, Mersham Nurseries, Chertsey.

ANDRE LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUBS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London, *viâ* Honfleur, about 2s. 6d. per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1878.
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The above sum, **£133 8s.**, *has been handed over to the Secretary of the Institution.*

The following Donations have been received since December 16:—

	£	s.	d.
List published last week	23	16	0
J. DOUGLAS DICK, Royal Horticultural Society	1	1	0
Mr. H. THORNE, Gunnersbury	0	5	0
Mr. J. BROWNING, The Gardens, Dupplin Castle, Perth	1	0	0
Mr. D. T. FISH, Hardwicke	1	1	0
Mr. J. SMITH, Mentmore Garden	1	1	0
Mr. G. SMITH, Foreman ,,	0	5	0
Mr. F. BETTS, ,, ,,	0	5	0
BOTHY MEN ,, ,,	0	10	0
Mr. S. CASTLE, The Vineyard, West Lynn, King's Lynn	1	1	0
T. H. M.	0	5	0
G. SILCOCK, Somerford Park Gardens, Congleton	0	5	0
BOTHY MEN at Belvoir Castle Gardens, *per* H. BARNES	0	10	0
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Mr. F. MANDER, Coventry	0	5	0
GRIFFITH AND AVISS, Coventry	0	2	6
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Mr. ASTLEY, Coventry	0	5	0
Mr. BALLARD, Leamington	0	10	6
T. BEDDARD	0	5	0
W. ADAMS, Foreman	0	5	0
J. WILD, G. PAGET, Young Men	0	2	0
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T. FRENCH ,, ,, ,,	0	2	6
JAMES HUNT ,, ,, ,,	0	2	6
HENRY SEYMOUR ,, ,,	0	2	0
JOHN MINARD ,, ,,	0	1	0
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GEORGE WARMAN ,, ,,	0	1	0
GEORGE MAYO ,, ,,	0	1	0
T. EASTON, Mortlake	0	10	0
ALBERT TAYLOR, East Sheen Lodge Gardens	0	1	0
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H. H. FOWLER, Esq., M.P., The Wergs	0	10	0
Colonel THORNEYCROFT, Tettenhall	0	2	6
W. H. ROGERS, Esq., Goldthorn	0	10	0
G. F., Wolverhampton	0	2	6
J. BERRY, Gates Street	0	2	6
RICHD. H. BRISCOE, Esq., Somerford Hall	1	0	0
Mr. J. E. UNDERHILL	0	2	6
Mr. E. JENKINS, Aldin Grange Gardens	0	10	0
Mr. E. COCKBILL, Rolleston Hall Gardens	0	10	0
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Mr. E. ROBERTSHAW, The Gardens, Denzell, Bowdon, Cheshire	0	10	0
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Mr. C. M. CARMICHAEL, Arden House, Henley-in-Arden, Warwick	1	0	0
W. HARDING, Esq, Rotherfield, Leamington	0	10	0
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Mr. H. J. BANKS, Warwick	0	5	0
Mr. W. L. DEVEY ,,	0	5	0
Mr. R. M. IVENS ,,	0	5	0
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Mr. T. H. HARBAGE ,,	0	5	0
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Mr. J. W. GLOVER ,,	0	2	6
Mr. J Forbes, Nurseryman, Hawick, N.B.	0	2	6
Mr. W. GARDINER, Florist, &c, Harborne	0	2	6
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THE
Gardeners' Chronicle.

SATURDAY, DECEMBER 27, 1884.

STANCLIFFE.

BETWEEN Matlock and Rowsley, from the flat pastures of Darley Dale, rises a vast bluff of hard sandstone rock—hard enough to serve for millstones—hence named millstone grit. The "grit" forms one of the main ribs of Derbyshire, another being constituted by the mountain limestone. Between them and their outliers run the valleys and dales for which the county is famous—along their tops the moors are outspread. The one bold escarpment we have now to do with is that known as Stancliffe, the property of Sir Joseph Whitworth. It rises abruptly from the valley on the north and western sides, where the naked rock protrudes in gigantic blocks of sandstone, cuboidal in outline, hard enough to present sharp edges, yet with the surfaces often scooped out by the water and frost of ages. On the south it forms an undulating turf-clad slope, rising by moderate gradients from the lodge gate in the valley to the summit. Well-made and well-kept roads rise gradually and easily from the entrance up to the base of the cliff, and coil around it to reach a level plateau, on which the house is situated. Diverging from this main road are others, which follow the intricacies of the rocks; one leads to a quarry whence the blocks are extracted for building purposes, the stone being in high esteem where durability and substance are required; another crosses the chasm between detached masses by means of a bridge; but all at length converge at the topmost plateau at the summit of the cliff, where, partly by the aid of Art, there has been formed an oblong space, whose existence is not suspected till the visitor actually reaches it, although its site is marked from below by the bold outlines of some Scotch Pines, which stand out against the background of sky in most strikingly picturesque fashion. From this plateau grand views are obtained of the parallel lines of hills and the fertile pasture land through which the Derwent threads its way. From it, too, on looking down, may be obtained a bird's-eye view of the whole garden, which enables the visitor to understand the plan of the whole in a manner which, owing to the differences of level, and the glorious prominences of rock, he would otherwise have a difficulty in doing.

Near to the Hall are the famous Darley Dale quarries, from which the stone for St. George's Hall, Liverpool—the Assize Courts, Manchester—the Municipal Buildings, Birmingham—and many other public and private buildings, including the extensive additions effected by Sir Joseph Whitworth to the Hall and other buildings on this estate, have been quarried. The estate came into the possession of Sir Joseph Whitworth, by purchase, in 1856. In 1863, when Sir Joseph was considering his plans for the works since carried out, a most interesting discovery of cinerary urns was made. It was while excavating the surface soil at the rear of the house that the workmen came upon five urns, which were found in an inverted

position at the foot of a slope, which rose to a height of about 80 feet, from which the earth had been gradually washed down by the rain of successive ages, thereby embedding the mound containing the urns to a depth of from 4 to 5 feet. This discovery from an antiquarian point of view was of so much interest, that Mr. Jewett considered it worthy of illustration in the *Reliquary* of 1864.

The grounds cover an area of nearly 35½ acres, which may be roughly divided into three divisions, viz., gravel, grass, and shrubberies. To the shrubberies, in which area the rocks are included, may be allotted 15 acres, to the lawns and grass verges 17 acres, and to the gravel walks 3½ acres; or, if the length of the walks, irrespective of their respective widths, be taken, we have in length of walks a distance of 2⅓ miles.

According to the Ordnance Survey, the site of the lodge gates is at an elevation of 359 feet above the mean water-level at Liverpool. Starting at this point and following the carriage road, which is about 15 feet wide and 995 yards long, we traverse it at a gradient in no place more than 1 in 18 until we reach the Hall, which is placed in a small valley between two sloping banks which run, the one to the north-east, the other to the south-west—the floor of the Hall being a little over 150 feet above the lodge entrance to the grounds.

Leaving the house, we traverse an almost level plateau, till we reach the foot of the slope rising westward, which we ascend by a circuitous walk to the highest part of the grounds already mentioned, the elevation being 211 feet above the lodge entrance, or 570 feet above the sea, according to Ordnance Survey. The main roads are bordered with a wide shrubbery border filled with a profusion of choice Rhododendrons, Azaleas, and other flowering trees and shrubs, intermixed with which are spiry Conifers, bronzy Retinosporas, and elegant Birches. In early summer the profusion of many-tinted Rhododendrons, the glowing Azaleas, brilliant Thorns, showy Pæonies, delicately-tinted Weigelas, and the like, render these borders a magnificent glow of many-hued colour, relieved by the sombre tints of the Conifers, and lit up by the silvery shoots of the Austrian Pine and the white-barked Birches, and diversified by the rich hues of Copper Beech, and the brilliancy of the Laburnum. The rocks themselves, light fawn, verging into rich chestnut-brown, are carpeted with Pernettyas, Vacciniums, and Gaultherias. Cotoneasters, with their profuse white blooms, spread over the blocks and give an impression as if a film of milk-white fluid were spreading over the stone, or as if a light fall of snow had partly covered the rich brown rock. In the crannies grow white Arabis and Iberis, purple Aubrietias, Saxifrages, Sedums, Wallflowers, Darwin's Berberis, golden Ivies, golden Vincas, Helianthemums, and numberless others. Of larger plants occupying pockets on the rocks are glorious masses of white and yellow Brooms, gorgeous bushes of Gorse, thickets of Rhododendron Wilsoni, R. ferrugineum, Kalmias and Ledums, and Daphnes and Hollies. Conifers are everywhere mostly such as are of flame-like or pyramidal outline. If a fault can be suggested in so beautiful a place it is that there are too many of these pyramidal trees, whose somewhat formal outlines are in places hardly sufficiently broken up by trees of different contour. Of the smaller growing species Juniperus Sabina holds a distinct place, its spiry tufts of dark green rising up very effectively, especially in contrast with the golden Yews. Abies amabilis here loses its leader, but it forms such effective masses, creeping over the rocks like the Cotoneaster, that the loss of its usual habit is hardly to be regretted; seen as we saw it, when the prostrate branches were each tipped with a sheaf of new silvery foliage, the effect produced was surprisingly beautiful. Among other Conifers, Araucaria imbricata, Lawson's Cypress, Abies lasiocarpa and nobilis, A. magnifica, Deodars, Pinus Cembra, Retinosporas of all shades of colour, from silvery-purple to golden-bronze; Tsuga canadensis may be mentioned as doing well, and represented by hundreds of specimens. The Douglas and Red-wood do not thrive, being, like the Wellingtonia, apt to be injured by the fierce gales which blow in these regions; nevertheless, in sheltered nooks, such as abound among the recesses of the rocks, these do well.

Such are the leading features of a garden unique in the bold character bestowed upon it by Nature, and in the rich clothing furnished by the planter. Seen in early summer, when we saw it, the beauty and richness of colouring were superb, almost beyond belief; but at any season it must be singularly effective. The planting has been carried out under Sir Joseph Whitworth's superintendence most effectively and judiciously by Mr. Dawson, whose zeal and intelligence have effected wonders, and whose courteous attention we would here gratefully acknowledge. The whole maintenance of the place testifies to the constant labour and unceasing vigilance that is exercised. If anything the keeping is too good, frequently in threading our way up between the rocks and boulders we caught ourselves wondering when we should see the glacier gleaming through the trees and doubting whether the Matterhorn would not make its apperance, towering into the sky round the next corner, for, in truth, there is here much to remind the visitor of the lower slopes above Zermatt at the base of the Matterhorn, but the well kept paths and easy gradients dispel the illusion.

Of bedding out there is happily none; in the midst of such scenery it would be an impertinent intrusion, even Roses are not abundant, save where their climbing habit suits the rocky character of the ground, or where a wall has to be covered—the ugly standards are conspicuous by their absence.

Adjoining the mansion is a large winter garden, which will furnish shelter and an agreeable promenade in winter, and which is in course of construction. The solidity of its foundations would surprise those whose lot is not cast in rocky ground. It is nearly 120 feet long, is of very light and elegant construction, but nevertheless possesses great strength, as it stands in a somewhat exposed position, and has to encounter the full force of the high winds which are common in the neighbourhood. It has been erected by Messrs. J. Weeks & Co., horticultural engineers, Chelsea, in conjunction with Messrs. Roger Smith & Gale, the architects. The upright fronts, from the plate to the cornice, are constructed of wood, with ornamental mullions, carved brackets, and moulded cornices. The semicircular ends or gables of the transept roof are of good design, and present a very elegant appearance. The semicircular roofs are constructed with light curved iron ribs, securely tied, and surmounted by an ornamental lantern, with sashes to push out for ventilation. The winter garden is attached to the mansion by means of a corridor, designed to be in harmony with the main building. The whole of the roofs are fitted with Weeks' improved iron drip bar, arranged along the inner edge of cornices, so as to carry away the condensation water, and prevent it dripping down the sides and disfiguring the internal decoration. We give a section showing this construction (fig. 142, p. 815): B shows the gutter, C shows the end of iron curved roof rib, D shows the drip bar, and A shows the end of curved glass. It will be seen that any condensation water running down the glass or rib is caught by the drip bar and conveyed to the gutter. The winter garden and various portions of the mansion are warmed by means of one of Weeks & Co.'s patent upright tubular boilers. With the exception of this conservatory there is comparatively little glass on the place, supplies of cut flowers and fruit being procured from Manchester and elsewhere. There is thus little to detract from the grandeur of the rock scenery and its luxuriant vegetation.

New Garden Plants.

CŒLOGYNE ROSSIANA, *n. sp.**

THIS plant cost me much time. I wished to bring it under one of the known species. I could, however, not succeed. Its strong bulb is nearly obpyriform, with four prominent and four interposed, nearly obsolete, quite blunt ribs. Leaves two, long petioled, cuneate, oblong lanceolate acute exceeding a foot in length and 1½ inch broad. The peduncle is scarcely longer than the bulb, of course produced from a sheathed base, where the leaves may be expected to arise. The one at hand has four flowers, all directed to one side. I could see only one linear acuminate bract, all the others having fallen before. Flowers with ligulate acute sepals and petals, cream-white. Lip with ochre-yellow side laciniæ, and such is the colour of the anterior expanded part of the anterior lacinia, excepting the white top. The other parts, disc and broad nail of mid-lacinia, are white. There are three plaited keels from the base nearly to the top of the dilated anterior part of lip. Outside the lateral ones there stands a short plaited keel, and this is the great peculiarity of the plant. This short keel is only to be seen on the dilated part. Column white, with brown mid-line in front. This very interesting species is dedicated to my excellent correspondent, Mr. H. T. Ross, who imported it from Burmah, and complains of its being a very shy flowerer. *H. G. Rchb. f.*

PRIMULA ADMONTENSIS, *Gusmus*: hybrida inter P. Auriculam × Clusianam.†

My correspondent, Herr Gusmus, of Rosenheim, sends me a specimen of a hybrid Primula which he gathered on the Kalbling, south of Admont, in Upper Styria, last May. The plant was found on limestone rock with its parents. *G. C. Churchill.*

A NEW HELIOTROPE.

THE history of the Heliotrope of which we now give a figure (fig. 140), is of some interest, but unfortunately it leaves some doubt as to the identity of the plant. It was raised from seeds of a plant received from Peru, and which was covered with a dense investment of long silky-white hair. This dried specimen is evidently identical with that in the Kew herbarium from Lobb, Columbia, n. 41, and which has been doubtfully referred to H. incanum of Ruiz and Pavon, *Ic.*, ii., 108. The seedling plants, however, raised by Mr. W. Bull, who kindly sent us the specimen whence our figure was taken, looks very unlike the true incanum, having rough leaves nearly entirely destitute of silky investment, broader, more ovate leaves, a denser, more globose inflorescence, and a larger, more hairy calyx, and purple, not white flowers. At first glance, then, it would appear that we have to do with a plant specifically different from H. incanum. On the other hand, we have Mr. Bull's assertion that the plant, though so different in appearance, was raised from the specimen referred to H. incanum, and on examining Lobb's specimen it may be seen that some of the lower leaves are coarsely rugose, and

* *Cœlogyne* (*erectæ*) *Rossiana*, n. sp.—Pedunculo ascendente quadrifloro, secundifloro; bracteis linearibus acutis, citissime deciduis; sepalis tepalisque linearilanceis, labello trifido, laciniis lateralibus obtusangulis, lacinia antica ab ungue latiusculo æquilongo abrupte obtusangulo triangulo dilatata, carinis plicatis a basi in laciniam anticam dilatatam usque ternis, superaddita utrinque in hac parte carinula plicata adventitiæ; androclinio integro. Ex Burmah imp. egr. cult. H. T. Ross. *H. G. Rchb f.*

† *Primula admontensis*, Gusmus (P. auricula × Clusiana).—Radice cæspitosa. Foliis spatulato-ovatis, margine dentato-serrato, pilis glanduligeris ciliatis, carnuloso-coriaceis glabris, nervis secundariis 6—8 prominulis; scapo erecto, foliis duplo longiore pauciflore, hinc inde pilis obsito; involucri foliolis elongato-lanceolatis, pedicellis calycem versus paullo crassioribus, dimidio brevioribus, pubescentibus; calycis pubescentis segmentis ovatis glanduloso ciliatis, coloratis; corollæ lobis cordatis lilacinis; staminibus in medio circiter tubi insertis; capsula subglobosa, stigma subglobosa. ♂ floret majo. Habitat in alpibus styriacis altitudine 1000 m. in monte Kalbling rarissime ubi legit H. Gusmus.

destitute of white shaggy hairs; hence it is possible that the plant exists in two aspects according to circumstances, and that under cultivation the differences become greatly accentuated. The form of the inflorescence, too, is not a matter of much moment, for the globose cymes might readily lengthen into long spikes, or *vice versâ*, neither is the colour of the flower of more consequence Presuming that there has been no error, the change is one of the most remarkable, induced by cultivation in so short a time, that we have met with. For the present we may call Mr. Bull's



Fig. 140.—Heliotropum incanum var. glabra.

plant H. incanum (?), var. glabra. It has much the appearance of H. peruvianum, but has a coarser look, and the flowers are not so fragrant. The pollen grains figured by Mr. Worthington Smith differ, as he points out, from the dumb-bell shape found in the pollen cells of other Borageworts.

Early Red Calville Apple.—A medium-sized fruit, of globular shape, with a short stalk and shallow eye, the skin red, streaked with darker stripes. Flesh firm, white, with an agreeably acid flavour. Season, November. The tree is of free growth, bears freely, and is worthy of cultivation for its ornamental appearance alone. *A. F. B., in "Florist," November*, 1884.

THE IVY.

There are few things more suitable for church decoration, or for the decorations of our dwellings at this season, than berried Ivy, of which we have great abundance this year. For wreath-making the common small-berried variety found growing everywhere on our hedgerow trees is the most suitable. Mixed with variegated Holly, Aucuba, Box, Laurel, and Yew, it produces a charming effect, with its glossy leaves and bold projecting berries. For church decoration, to intermix with Holly and other evergreens, the large Irish (Hedera hibernica), in a berried state, will be found the most suitable for a bank of evergreens to screen an unsightly corner, or to place between a group of plants in pots, to give them a natural appearance, there are few things to surpass it. It is also admirably adapted to place on the tops of picture-frames or other objects of interest, and to employ the long trailing shoots to hang carelessly on either side. For decorating large public rooms or halls it will be found most useful either in its berried or trailing state. The Ivy, although indulging in a cool, shady retreat, will nevertheless produce bolder and brighter-coloured berries when exposed to sunlight. A good position for the large Irish Ivy is that of an old tree which has seen its best days, or one injured by the elements. Planted in some good rich soil and taken care of for a year or two it will soon form a cosy neighbour to its future supporter, and an agreeable object when there are few things to relieve the eye from the general gloom of winter. Although the Ivy has gained for itself a bad name as a creeper to cover the walls of dwelling-houses, it stands unrivalled as a creeper for covering unsightly buildings or disagreeable objects. "On no account plant Ivy against your house" is the general remark; "it will make the walls damp and injure the building." That it will injure a building is evident if allowed uncontrolled to find its way under or above the roof. As to keeping the walls damp, that is an almost impossible feat, as an observer may find during damp weather, or after heavy rains. The reverse of this is the fact. If you have a damp wall, especially facing north, that of all others is the place to plant Ivy; there is no better absorbent, and the said dampness will disappear to an appreciable extent. The Irish Ivy, however, requires a good range to ramble in, and should never be allowed to trespass either under or on the roof of a building. Buildings having pretensions to architectural proportions, and particularly those of a rustic character, are not suited for the grosser kinds of Ivies, as hibernica or Regneriana, but should be clothed with more dressy kinds, as chrysocarpa, cananiensis, argentea, the small variegated, and other choice palmated kinds. *J. J. B.*

Orchid Notes and Gleanings.

"Botanical" Orchids.—In the Orchid collection at Kew one sees numerous small, and in a horticultural sense uninteresting, species, such as would be refused a place amongst Orchids that are large flowered, but which nevertheless are as interesting, often more so, to the botanist than their large flowered and richly coloured brethren. To such plants belong most of the following, and which are now in flower at Kew. Trias pallidiflora is one of the two or three species included in this genus by Bentham, but which according to Reichenbach belong to the Bolbophyllums. They are small plants, the pseudobulbs being globose, as large as a marble, each bearing a thick fleshy leaf 3 or 4 inches long. T. pallidiflora produces a single flowered scape from the base of the pseudobulb and about an inch long. The flower is composed of three broad spreading reflexed sepals, ½ inch long and ⅓ inch broad; the petals are very small, and the labellum is tongue-shaped, thick, ¼ inch long, and, like the Bolbophyllums, is delicately balanced on a hinge-like connective, so that the slightest movement of the air causes it to tremble. The column is short and is narrowed at the tip to a beak-like point. The whole flower is yellowish, thickly spotted with purple. A native of Moulmein, and requiring tropical treatment. Bolbophyllum neilgherrense is a species with a long root-like rhizome, upon which the quadrangular pseudobulbs are produced at intervals of about 2 inches, each bearing a single lance-shaped leaf of leathery texture. The flower-spike is about 7 inches long, and bears about a score of small flowers which are placed closely together. Each flower is formed of two projecting sepals which are arranged somewhat like the lower divisions of a papilionaceous flower; the lip is tongue-shaped, with a furrow down the middle, the two small petals being almost hidden behind it and the sepals. The colour of these flowers is yellowish, with purplish-brown streaks. If for no other character this plant is interesting because of the powerful and very disagreeable odour which arises from its flowers. Dendrobium tetragonum is an Australian Dendrobe, with quadrangular brown pseudobulbs, terminated by a pair of green waved leaves. The flowers, which are produced from the axils of the leaves, are composed of five long twisted segments (petals and sepals), which are green and purple, and an ovate labellum, with short lateral lobes, and a pointed, revolute central one, its colour being white, with transverse pink bars. The singular shape of the pseudobulbs, with their curiously swollen tuber-like bases, renders this plant of some interest. It was introduced from Moreton Bay by Messrs. Rollisson about twelve years ago. The Kew plant is in very fine condition. Eulophia virens is an Indian species, with thick Cym-

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bidium-like pseudobulbs, and long grassy foliage. The scape is over 2 feet long, erect, branching, and bears a score or more flowers, which are composed of long strap-shaped recurved sepals and petals, of a greenish-yellow colour, and a three-lobed labellum, the central lobe channelled, 1 inch long, and bearing several bearded ridges, which are reddish coloured, the lip itself being white. A terrestrial Orchid, growing naturally in clefts of rock filled with vegetable earth. It has been in flower at Kew several weeks. Dendrochilum uncatum is a graceful little Orchid, with small green bulbs, slender foliage, and long hair-like arching flower-scapes which bear two rows of tiny star-shaped flowers. A plant in a 4-inch pot bears a dozen of these spikes, each 1 foot long. The Dendrochilums are much more satisfactory when grown in a cool house than when treated as tropical plants. The following Masdevallias are also in flower at Kew:—M. bella, M. Chelsoni, M. ignea, M. octhodes, M. Reichenbachiana, M. tovarensis, M. triglochin, M. velifera, M. Wagneriana, M. sp. nov. (Hort. Shuttleworth).

ONCIDIUM CHEIROPHORUM AND O. ORNITHORHYNCHUM are two of the prettiest and most useful of the cultivated Oncids, though they belong to the smallest flowered section of the genus. Their prettiness consists in their numerous graceful branching racemes, covered with crowds of curiously formed, brightly coloured, fragrant flowers, which possess good lasting qualities. One of the prettiest and most uncommon effects in the way of table decoration we saw produced by several healthy well-flowered specimens of these two Orchids, which were placed in broad-mouthed flower-stands about 18 inches high, with Selaginella and Panicum variegatum draping the sides and hiding the pots in which the Orchids were planted. The arching spikes of tiny flowers, in the one species bright sulphur-yellow, in the other purple-rose, with a boss of yellow in the middle of each flower, looked like clusters of insects crowding round the foliage of the Orchids. They are very fragrant, too, and remain so for some time after being cut and placed in water. Both species are amongst the easiest managed Orchids, growing freely and flowering profusely if kept in a cool-house and supplied with plenty of water always. During summer they require to be shaded from bright sunshine, and are much benefited by a sprinkling of water overhead several times during the day. The finest batch of these two Oncids we remember were in the Clapton Nurseries, where they were frequently watered overhead, much to the astonishment of the late Mr. Spyers, who used to grow them fairly well, but never allowed them to be wetted overhead. Economy of labour and even carelessness often reveal to us the secret of what is best for many over-coddled plants. Messrs. Low watered their Oncids with a large rose-pot to save time, and thus found out what was best for at least some of the species.

VANDA CŒRULEA.—Amongst the many well-known plants of Orchids at Cholmeley Park, Highgate, is a marvellous variety of Vanda cœrulea—the plant, 20 inches high, carrying a spike of twelve flowers, each flower well filled in, almost circular, and 3 inches in diameter, well coloured. Truly a grand sight when seen like this.

ORANGE PEEL.

CHRISTMASTIDE wakes up an important trade in products of the Orange family, and especially does one of these put in a prominent appearance at this time, and that is the rind or peel of the Citron in its form of candied peel. Fruiterers and grocers make a goodly display of dried and candied fruits just now. The public have little conception of the large commerce carried on in the peel. Let us form a rough estimate of its consumption as candied peel at this season. There is scarcely a household in the kingdom that does not have one or more plum puddings. Assuming that there are 7,000,000 families (to say nothing of the floating population in hotels, ships, &c.), each of these would consume, say, half a pound of peel for their puddings, which creates a demand for 1500 tons, and we import more than this quantity from Italy alone. It is the Cedrat, a variety of the Citrus medica, which principally supplies the Citron peel of commerce. The large fruits are known under the name of *poncires* in France. But it is not only the peel itself of these fruits that is useful, valuable essential oils are obtained from the rind of many species. The large variety of the Citron when candied furnishes the chief part of the citrionate or succade. The rind of Citrus aurantium yields the essence of Orange of Portugal. The fruit rind of Citrus bergamium, a graft on C. vulgaris, with a fine aroma, is abominably bitter, furnishes Bergamot oil, and the Mellarosa variety an exquisite confiture. The pulp and thick rind of the Shaddock, C. decumana, can each be used for preserves. The sweet Lemon, Citrus Limonum, with a thick and pale rind, serves for particular condiments. The thin smooth aromatic peel of the ordinary Lemon also furnishes condiments and the production of an essential oil. The plants of the Orange family exhibit in every part vesicular glands or receptacles of oil, which abounds particularly in the leaves and in the rind of the fruit. It is this volatile principle which makes these trees so odoriferous, and gives that stimulant action which the various parts exercise on the animal economy.

Orange peel readily yields its otto by simple expression. The fruit of both the Bigarade and the sweet Orange is used, the former yielding the best product. It is a light yellow liquid, and has a strong aroma peculiar to the fruit from which it is obtained. Its general properties are the same whether derived from the sweet or bitter Orange. Of all ottos it is the most difficult to preserve; when exposed to the air it becomes worthless with great rapidity. The Seville Orange (C. Bigaradia) differs from the sweet chiefly in bearing a fruit rugged on the surface, of a deeper hue, and with a pulp sour and bitter instead of sweet.

The Seville Oranges are principally used for marmalade. The rind of the Bergamot yields, both by pressure and distillation, the volatile oil called Bergamot. One hundred fruits are said to yield 2½ oz. From the rind of the sweet Orange an essential oil called oil of orange is produced; an inferior kind called Neroli oil, is obtained from the rind of the bitter or Seville Orange. The value of the essences obtained from the Orange family shipped annually from Messina exceeds £170,000. The preparation of preserved or candied Citron used to be carried on in Leghorn on a large scale. In a good year about 5000 boxes to more than 1000 tons are shipped. Refined sugar alone is used, and enters into the composition in the proportion of 80 per cent., and more sugar was lost and used up in the course of the manufacture than was allowed for by the drawback, hence it does not pay at present to preserve the peel, which is shipped in brine. Italy sends us, on the average of years, about 3750 tons, worth £60,000.

The fruit of the Citron, cut in two or three pieces of about 1 lb. weight each, are packed in barrels of brine to insure their preservation. From Sicily, 50 to 100 tons are shipped in a year at the price of about £3 per cwt. In Greece and the Levant the parings of the hundreds of millions of fruits consumed were formerly thrown away, but some Sicilians have of late years introduced the art of preparing the essential oil. In 1872 the quantity of essences shipped from Messina was 307,000 lb. One thousand Lemons, price 9s., will yield 1 lb. avoirdupois of essence; 350,000 lb. to 400,000 lb. avoirdupois of essence extracted from the peel of the Citron are often shipped from Messina in a year. Each tree will often yield in value £4 of fruit.

The Cedrat has been much cultivated of late years in Corsica, the prices realised for the produce under this branch of industry are most remunerative. About 1,000,000 lb. of fruit or candied Citron peel, and 2,700,000 lb. salted, is exported annually. The Cedrat forms a considerable article of commerce in the island of Naxon. About half a million fruit are sent annually to England, but many millions might be shipped. They are sold when large at about 5*d.* each. The want of labour prevents their being prepared on the spot. Malaga ships about 1000 lb. of Orange-peel to different ports in Europe for making liqueurs and syrups.

When the time for preserving for England comes the fruit is taken from the pipes, and boiled till soft enough to admit of the pulp being scooped out. The rind is then laid in tubs or cisterns, and melted sugar poured over it. Here it lies for three or four weeks, and then the sugar is drained away, and the rind placed on trays in a room constructed for the purpose. It now assumes the name of dried peel, and is stored away in boxes till wanted for candying.

New York imports Orange-peel largely from different parts of the world. In 1877 the imports were to the value of 9000 dols., since then they have risen in value to 12,000 dols. The shipments from Havre to New York by steamer are frequently 200 sacks, value about £200.

The fruit and rind of the bitter Orange, C. Bigaradia, is also used for candied Orange-peel. The rind is thicker than that of the sweet Orange, and much more rich in aromatic oil, so that there is always a great demand for it for making essential oil of Orange, flavouring extracts, bitter preparations, and liqueurs. The well known and delicious liqueur known as Curaçoa, is made in large part from a distillation of the bitter Orange-peel. Many people imagine that this liqueur comes from the island of Curaçoa, but this is a mistake. The Dutch make it in Holland mainly from the Orange-peel imported from that island, which is one of their possessions, and have named it after that island as a sort of guarantee of its quality, for undeniably the finest Orange-peel in the world comes from there. The bitter Orange-peel is one of the principal items of export from Curaçoa, indeed it ships little of any importance except this peel, Divi-divi, and Aloes. Hundreds of thousands of pounds of this peel are sent annually to Holland. In Amsterdam there is a regular Orange-peel mart, where saucers full of peels are set out upon long tables, and testers go among them selecting for purchasers. Such experience have these men that they can tell simply by breaking and smelling a bit of peel just what part of the tropical world it comes from, and that from Curaçoa always commands a higher price than any other. *P. L. S.*

AUTUMN PLANTED EVERGREENS.

IN the early autumn planting of evergreens the prevalent disposition to put off the work of preparation until it is too late, coupled with the comparatively short time available to allow of the plants rooting before winter, is likely to ever leave much of this kind of work to be done when the certainty of success is much reduced. For even the least observant can scarcely fail to have noticed the ill effects that such springs as the two last have on evergreens planted in the winter; the long succession of dry, cutting east winds, and nipping frosts, parched up the moisture in the leaves, and while the absence of feeding root-fibres to the plants made them so far unable to withstand, that many succumbed. Notwithstanding the difficulties there have been in the present season in planting, it seldom happens that an autumn comes which has done more to confirm the advantages of moving evergreens at this season, the unusual amount of heat present in the ground has induced a greater than ordinary amount of root progress. Large densely furnished Hollies, 8 or 9 feet high, moved early in September, lost no leaves worth naming, and are now bristling with thousands of young roots several inches long, securing the plants as effectually against the severest winter or spring weather that may come as if they had never been moved at all. In several cases the plants in question were moved long distances by rail, necessitating their being out of the ground several days; previous to taking up the soil about their roots was well watered, so as to secure good balls with all the roots to them that could be got. They were matted up in damp litter, and one thorough soaking was given when planted—a good syringing overhead being given daily for two or three weeks, since which nothing more has been needed. Very different from the continual watering required through the summer if the removal had taken place in spring, leaving out of the calculation the greater progress that may be looked for during the ensuing summer. Evergreen trees much larger than the above, such as Cedrus Deodara, Cupressus nutkaensis, C. Lawsonii, Abies balsamea, and various kinds of Pines, from 12 to 25 feet high, planted fifteen to twenty years, and that were transplanted the latter end of August without any previous preparation, have been equally favoured by the season. The complete soakings which the large balls of earth were given immediately after planting, previous to which the soil had been all but dust-dry, prevented any loss of leaf, and, combined with the long-continued autumn warmth, has since caused such an extent of root-formation that little less than the ordinary amount of growth may be looked for the next season.

The Flower Garden.

The present year, which is now nearly closed, has been especially favourable to the flower garden. The beauty and brilliancy of both flowers and fine foliaged plants has been quite exceptional when compared with that of the last few unfavourable summers. In some localities, it is true, the continued heat and drought was rather trying to a few subjects, but where a plentiful supply of water was at hand, as it always should be where the flower garden is of any extent, the evil could be averted by abundant watering at intervals. As to the prolonged charms of the flower garden during the autumn months there is perhaps scarcely within the recollection of the oldest gardener a season when these were extended to so late a period as has been the case this year in almost every part of the country. At the present time even Pelargoniums are still green, bright, and beautiful, while the late flowering varieties of Roses, such as Sombreuil, Souvenir de la Malmaison, and Gloire de Dijon still yield their flowers somewhat freely, which, when placed in contrast with a few flowers of Alfred Colomb Rose and a solitary golden Maréchal, make a charming although somewhat unusual accompaniment to the tender and sometimes pallid forced flowers at this glad season of Christmastide. Although the season calling forth the greatest activity in the flower garden is now over for this year, and that of the forthcoming one yet a little way distant, still there is much necessary and important work which may and ought now to be performed. Work, both mental and manual, and in proportion to the skill and thoroughness with which that work is now executed, so will the efforts and actual labour put forth at that busy time be lessened and made pleasant, easy, and satisfactory. It is right that every flower gardener at this time should severely criticise the features of the garden during the past and previous years, so as to detect any defect and partial failure, and any unsatisfactory combinations which have occurred, not resting satisfied till the causes have been clearly ascertained; at the same time, lest he should feel too satisfied with his own doings, it is always advisable to make comparisons with the doings of those who have been able to reach a higher standard of excellence in flower garden management than his own; by so doing many improvements may be effected, with no worse result than this—the learner may lose a little of that self-esteem which we all—especially gardeners—are said to inherit, or at any rate acquire, very early in life. There are nearly always some changes to be made in the flower garden each year, otherwise the most beautiful and perfect arrangements become too wearisome and monotonous. It is not wise, however, to attempt these changes without due consideration, because the alteration of one or two beds or designs sometimes destroys the good effect of the whole. Again, it is always desirable that the flower gardener should first assure himself that in this, as in every other change connected with the flower garden, he is carrying out the wishes of those whom it is his duty to endeavour to please, and however diverse his own views may be, having once courteously expressed these, he should try to fulfil and carry out these wishes to the utmost. This, I need scarcely say, is the rock on which young and excellent gardeners have split. Whatever changes it is decided to effect, whether in the alteration of the beds or in the rearrangement in planting, it should be at once performed so as not to interfere with the usual work at the busy period, and also to allow of the necessary stock (if any) required by the alterations being propagated in due time. The whole stock of plants should now undergo examination, making careful notes of insufficient quantities; this done, proceed at once to increase the deficient numbers and encourage any weak growing plants. In propagating nearly all kinds of bedding plants, especially Pelargoniums, at this season, it is advisable to first subject them to a temperature just sufficient to stimulate growth before the cuttings are taken off the plants. They should then be subjected to a brisk bottom-heat of 90° or 95°, and when struck they should be immediately removed to a cooler temperature to harden. By propagating so early in the season they will make plants nearly as good as those struck in the autumn, by bedding-out time.

The Spring Garden will now require but little attention, beyond keeping every part strictly clean and in perfect order, which the late stormy weather has given plenty of occasion for. Should severe weather suddenly occur, after so mild a season, it will be necessary to afford tender growing plants, as well as bulbs just emerging from the ground, slight protection of some kind; and as many of the beds of Pansies, Violas, Polyanthus, and Primroses are even now partially in flower, every means should be taken to preserve their beauty at this season, when every outdoor plant has additional charms.

The Herbaceous and Rose Gardens.—All rearrangements and transplanting in these departments should now be finished, but where, from any cause, they have been delayed, every effort should be made to complete them as quickly as possible before severe weather occurs, and in order to protect the roots from injury a thick mulching of half-decayed manure or leaves should be placed on the surface as the work proceeds. The pruning of a few of the hardier kinds of Roses, or such as are trained against walls where the young shoots can the more easily be protected, may now be done, but not to any great extent, as it is safer to delay the greater part of this work till somewhat later in the season. *T. S. C.*

The Kitchen Garden.

Peas and Beans.—The present is a good time to make an early sowing of Peas in 3-inch pots three parts filled with light garden soil. Put about a dozen Peas into each pot, covering them with soil; then put the pots into a forcing house, and when the plants have made 2 inches of growth remove them to a cooler and airier house, where they must be gradually hardened off previous to planting out on a warm border later on. For this crop we shall sow Day's Early Sunrise, Sutton's Emerald Gem, Ringleader, William I., and Webb's Wordsley Wonder, all excellent varieties, and from which we usually gather about the third week in May. Concurrently with this sowing there should be one made out-of-doors in well prepared ground of the following varieties, in rows running north and south, and from 6 to 10 feet apart (the intervening space being planted with two to four rows of Cauliflowers later on), viz., Sunrise, Ringleader, Wordsley Wonder, Laxton's Supreme, or Dickson's Favourite, and Carter's Telephone. In reference to early Peas I should advise a sowing of Sutton's American Wonder and Sutton's Bijou Peas to be made in 3-inch pots, either for planting in pits or shifting into 8-inch pots later on for yielding early gathering of Peas. These varieties, being very dwarf (12 to 15 inches high), are therefore very suitable for pot and pit cultivation. There should also be made a sowing of Seville Long-pod Beans in boxes for transplanting in a favourable situation out-of-doors, when it is considered safe to do so. At the same time there should be a sowing made in a south border at 3 feet between the rows: these, like the Peas, will make a good succession to those raised in pots and boxes. Peas which were sown out-of-doors at the end of October or early in November, will now require to have a little soil drawn to them, after which they can be staked (putting some short spray sticks between the longer ones), and on the approach of severe weather some Spruce boughs should be stuck firmly in the ground on either side of the rows, which will prevent them from being injured. See that mice and birds, which interfere with the Peas, are at once destroyed by some means.

Herb Beds.—See that these, together with quarters of Spinach, Cabbages, Onions, walks, &c., are kept free of weeds, and that a surface-dressing of leaf-mould is laid on beds of Mint and Tarragon, which prevents the roots getting frost-bound in the event of frost setting in; and let good order and judicious management be observed throughout this department.

Forcing Department.—Maintain a bottom and top-heat of from 60° to 70° in Asparagus frames, and should it be likely to fall below this, the linings should be freshened by the addition of fermenting material, a good heap of which should be kept in reserve for this and other purposes, for anything like a stagnant growth wouldbe prejudicial to the quality of the produce. Ventilate the frames in accordance with the condition of the beds, the stage of growth at which the occupants of each frame may have arrived, and the weather. These remarks are also applicable to pits and frames which have been recently planted with Potatos, and sown with Carrots and Radishes.

French Beans, when they have grown a few inches above the rim of the pot, should be top-dressed with soil of the same temperature as that in which they are growing, and have the points of the shoots pinched out, and weak liquid manure given to the roots when the plants are podding, will tend to the production of finer Beans. Damp the plants overhead with tepid water on fine days, and make successional sowings at short intervals—in quantity according to the accommodation for their growth and demand for the same—so as to maintain a regular supply.

Mushroom-house.—I need hardly observe that so long as the Mushrooms grow sufficiently fast to meet the demand for them, it will not be necessary to turn the hot-water on in the pipes, or to apply atmospheric moisture in the house, futher than damping the surface of the beds with tepid water in the event of their getting dry. In the event of its being necessary to warm the pipes to maintain a minimum temperature of about 50° tepid water should be distributed over the floor and walls, so as to keep up a humid atmosphere in the house. Woodlice are usually very troublesome and destructive in the damp and darkness of Mushroom-houses, and the readiest way of eradicating these pests is to pour boiling water out of a long-spouted watering-can along the sides and ends of the beds, especially between the latter and the walls, where they congregate as soon as daylight is let in upon them, and which is the best time to apply the boiling water—that makes short work of them. *H. W. Ward, Longford Castle, Wilts.*

A MOIST BOTTOM FOR POT PLANTS.

The old-fashioned sloping plant stage, with its tiers of shelves one above another, is now happily all but a thing of the past; the wide and often lofty character of the majority of the houses in which plants used to be grown necessitated some means of getting them elevated sufficiently near the roof to keep them from getting weak and spindly, and made the old stage a necessity. But for far the greater number of the kinds of plants in cultivation a standing medium of this description was anything but conducive to their well-being; so placed there was an all but absence of the health giving moisture rising from the surface of the ground amongst the leaves to which the plants are subject in a state of Nature, and which is so essential to their well-being during the growing season. The majority of the plants subject to pot culture are naturally low-growing, having their heads immediately under the influence of the moisture that rises from the ground. The worst effects of the dry air continually playing through the foliage when stood on high open stages, are seen in the way it favours the increase of insects, such as red-spider and thrips, that multiply and revel in the absence of the moisture present on the under-surface of the leaves, where plants are stood on a moist bottom, or only elevated a little above it. The different state of the leaves where plants are stood under the opposite conditions may be easily seen by any one taking the trouble to examine them in a morning before the admission of air has dried the atmosphere of the house; in one case the under-sides will be found covered with a dew-like moisture, so objectionable to the insects named, and which on many plants confine their presence to the under-surface of the leaves. In the other, the whole will be quite dry, affording just what these destructive pests like. With plants that are grown for the beauty of their leaves, such as Dracænas, Crotons, and the many other things now so much required, it is impossible to have them in presentable condition unless they are quite free from insects, and all such things as these should be kept constantly with the pots stood on some sort of moisture-holding material, like fine coal ashes, or something that will hold a moderate amount of moisture. A persistent use of the syringe will no doubt do much to keep down the insects in question, but prevention is better than cure, added to which, where plants are subject to moisture rising amongst them, the growth made will be much more and of a very different character to that which is possible in dry stages, even if they are close and do not admit a current of air through them.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY,	Dec 31	Sale of Pyramidal and Dwarf-trained Fruit Trees, Conifers, Gladioli, and Border Plants, Lilies, Roses, &c., at Stevens' Rooms.
THURSDAY,	Jan. 1	Sale of Tuberoses, at Protheroe & Morris' Rooms Sale of Aerides Sanderiana, at Stevens' Rooms
FRIDAY,	Jan 2	Sale of Imported Orchids, at Protheroe & Morris' Rooms.

IT is a question whether periods of depression do not entail more work than those in which trade and commerce are in a more flourishing state. On all sides we hear of commercial depression. We know our landed proprietors and our agricultural friends cannot be flourishing, and other industries are likewise depressed. Turning to our own immediate department we see increased work in almost every direction, but no very dispiriting signs. It certainly has been one of the busiest of horticultural seasons, and when the time comes to form a fair estimate of the value of the results gained we do not doubt that 1884 will be found to have been productive quite up to the average.

The weather has generally been favourable to our pursuits; the winter was mild, the spring genial, on the whole, but destructively cold in the middle and later part of April, the summer very unlike the proverbial "three fine days and a thunderstorm," the autumn—barring an unusually low rainfall—propitious, the winter, so far, favourable. Business has, at any rate, not been so slack as in some other departments, though necessarily we hear of establishments being reduced and the demand for unskilled labour in consequence diminished. On the other hand, as in evidence of the increasing diffusion of a taste for horticulture, we may mention the issue during the year of no fewer than three new low-priced horticultural periodicals.

The crops have, all things considered, been good; fruit was not abundant, but the quality was excellent. No surprise need be felt at the great scarcity of some fruits, and especially of those kinds which were in bloom in the disastrous and long to be remembered week ending April 25. Surprise may rather be felt that any kinds of fruit which were unprotected should have safely passed through such a trying ordeal, for even where the deficiency of the crops is in some instances attributed to drought, heat, cold winds, and other causes, it is more than probable that the first and chief cause was the destructive frosts which occurred throughout the country about this time. The Potato crop has been unusually large, and free from disease.

In London the gigantic success of the "Healtheries" must leave its impress on our craft, as on most others. Looking to the future, we incline to the belief that the generally unattractive laboratories in the garret will produce more lasting and beneficial results than most of the other very heterogeneous departments of the Exhibition, because the results there exhibited will tend not only to the improved health of the community, but will lead to a more thorough investigation of the conditions under which plants, like all other living creatures, can best thrive and be protected against the myriad forms of disease which affect them. To thorough scientific investigation at the hands of trained experts, in fact, we look in the future for the basis of improvement. Experience and common observation have practically yielded all they are likely to do, advance can only be looked for by extending our experience and our resources in the directions indicated. From this point of view, the arrangements made for theoretical and practical instruction in foreign countries, as shown at the "Healtheries," were most suggestive. We alluded to these in detail at the time, and refer to the subject again simply to enforce the necessity, for those who have the means, to encourage by all the means in their power the full scientific research into the natural history of plants and animals, upon which we are convinced the future of practical cultivation depends. It ought to be enough to recognise the fact that many foreign countries are ahead of us in these particulars to stimulate us to renewed efforts to maintain and improve our position, even though the immediate results may not be readily appreciated by the untrained observers. We have a striking instance of this in the case of the Potato disease, which has occupied so much of our space. In spite of all that has been written, there still remains much that is a matter of controversy and dispute, and there is no hope for a settlement of these questions and of an outcome of practical good till the matter has been thoroughly sifted in the laboratory. No ordinary cultivator with the means and appliances at his disposal can hope to do much in this direction. It is the trained expert to whom we must look, and the "Healtheries" have, we believe, done much to bring this truth home to the minds of those who in a general way would hardly be capable of forming an adequate conception of what is needed. That hopeful results may be obtained in the direction we have alluded to is shown amongst other things by the papers on the gumming of fruit trees, the nature of canker and the hybridisation of the Potato which we have published.

In connection with the "Healtheries" a series of shows of fruits and vegetables was held which were very successful, and which must have been useful as showing to some extent in what directions the British farmer might look for some, at any rate partial, amelioration of his condition.

The great Forestry Exhibition in Edinburgh was another feature of the year, and one which can hardly fail to leave its impress on both the scientific and practical aspects of forestry, and will serve, it is to be hoped, in laying the foundation of adequate Schools of Forestry in which matter also we are far behind our neighbours.

Of purely horticultural shows the Great Exhibition at St. Petersburg, got up mainly by the untiring diligence of Dr. REGEL, may be mentioned as, in its way, the event of the year. Dundee celebrated with *eclat* a great International Show, and our neighbours at Ghent have paid us the compliment of imitating our Floral and Fruit Committees. A "Daffodil Conference" at South Kensington was a great success from a popular point of view, and was productive of more permanent results in the successful attempt made to reform and give system to a nomenclature which had become cumbrous and absurd.

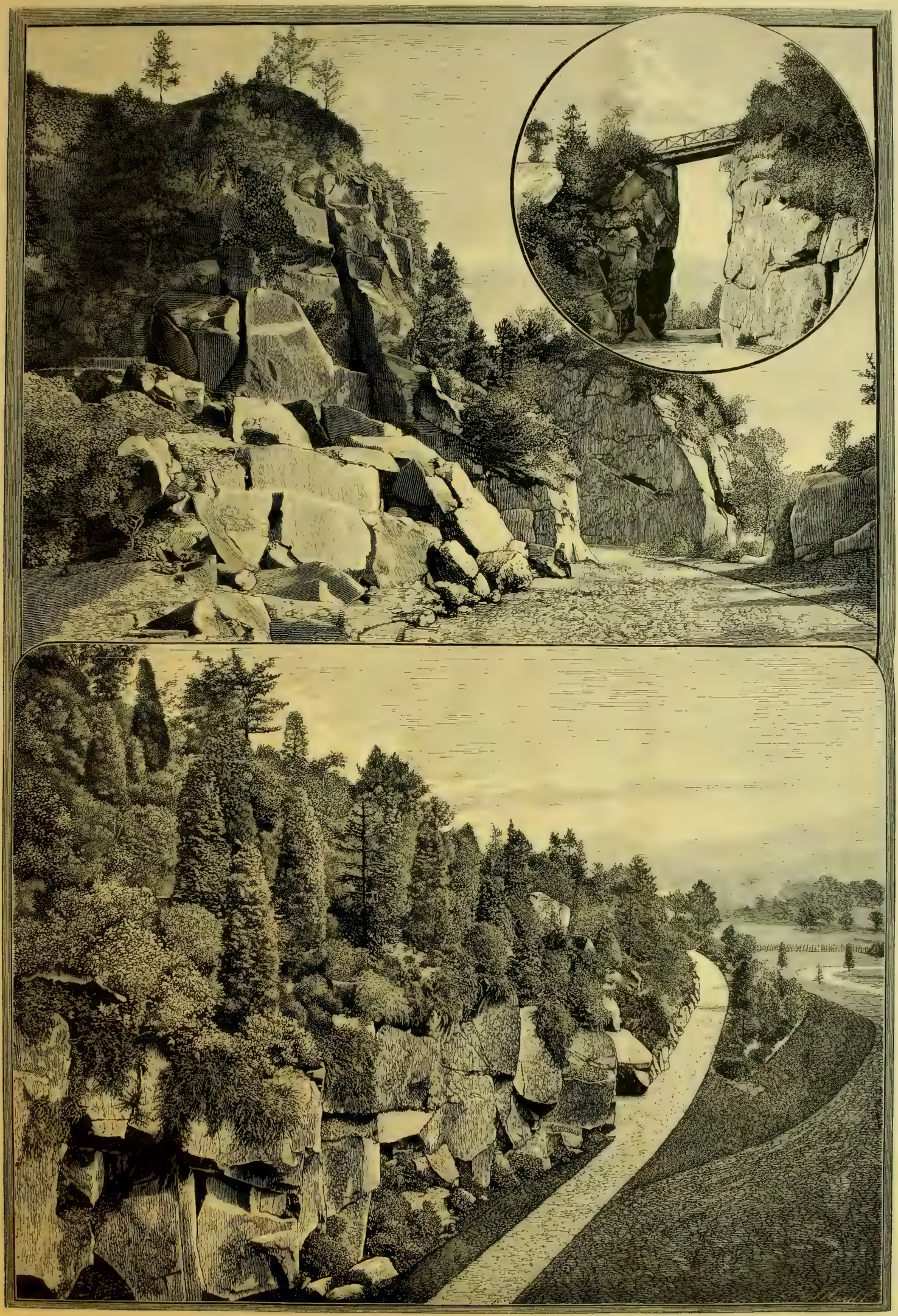
New plants have been introduced, and additions to our knowledge of old ones have been made, in which we may claim to have played our part, and which will be passed in fuller review on another occasion.

Great efforts have been made to augment the reserve fund of the Gardeners' Royal Benevolent Institution to such an amount that the present meagre pensions may be increased, and perhaps a larger number of pensioners admitted yearly. We are deeply gratified to find that, at any rate, the first of these objects has been attained, and that to a large extent by the efforts of the gardeners themselves. This is the more important as they have as a class been accused of lukewarmness in the matter. But this accusation can now be refuted, and we have every hope that the generous offer of £500, offered by an anonymous donor on certain conditions, will now be carried into effect.

Horticultural literature, so far as works of standard value are concerned, is not in a satisfactory state. Most of the books published are mere compilations from other sources, and not of a nature to become standard works. So far as the scientific basis of horticulture is concerned, most of these books are half or a whole century behind the day. Among the more important botanical books completed during the year, the magnificent *Pinetum Britannicum* may be mentioned. A translation of DE BARY'S great work on *Plant Anatomy* has been published; Dr. HOGG'S *Fruit Manual* has reached another and greatly extended edition. Mr. BARRON'S *Apple Report* is sure to be of permanent value. A fourth edition of HENFREY'S *Elementary Course of Botany*, so far as its limits go, affords a brief summary of the present state of botanical knowledge. Mr. W. G. SMITH has published a very useful little book on the diseases of plants, M. CORREVON has issued a treatise on the culture of alpine plants, which will be valued by lovers of these plants. A translation of M. DE CANDOLLE'S *Origine des Plantes Cultivées* places in the hands of the student the most complete account of the history of cultivated plants yet published. M. BOISSIER'S invaluable *Flora Orientalis* has been brought to a conclusion, Baron VON MUELLER'S *Eucalyptographia* progresses steadily, and promises to be one of the most carefully exhaustively treated works which its unwearied author has undertaken. Dr. ASA GRAY has given us another volume of his *Synoptical Flora*, which, so far from satiating us, makes us cry for more; Herr ANTOINE, of Vienna, has commenced the issue of a magnificently illustrated history of cultivated Bromeliads—the only objection we can make to which is its unwieldly size.

The obituary record is in all senses heavy. Botany has lost its greatest exponent in this country, so far as classification is concerned, in the person of the venerable GEORGE BENTHAM, who happily lived to see the completion of the gigantic work which he had undertaken in conjunction with Sir JOSEPH HOORER. We have also had to mourn the loss of GEORGE ENGELMANN, a naturalised inhabitant of the United States, to whom we were indebted for our fullest knowledge of Conifers and other orders. The venerable Professor BALFOUR, so successful as a teacher, has also gone to his rest. VOELCKER the agricultural chemist, has been taken away too soon. In the death of ISAAC ANDERSON-HENRY horticulture experienced one of its most severe losses, though at a time of life when such an event must naturally have been expected. Not so was it with JOHN HENRY MANGLES, an enthusiast whose loss to the Royal Horticultural Society will not easily be replaced. Mr. PARKER-HAMOND'S death creates a great void in our list of planters and tree-lovers. France has suffered a similar severe blow in the death of the courteous and learned President of the National Horticultural Society, M. ALPHONSE LAVALLÉE, whose labours in the cause of dendrology and arboriculture wil not soon be forgotten. Singularly enough the great Horticultural Society of Massachusetts has had to bear a similar loss, in the decease of its President, Mr. HAYES. Not so widely known perhaps were HENRY BOHN, GRAY, A. MAULE, the ingenious experimenter and original observer, of Bristol; FENDLER, the botanical collector; SHEARER, of Yester; JUDD, SPEED of Chatsworth—all well known to florists, and others who in their several departments will be sorely missed. The numerous readers who have been charmed with the delightful "Notes from a Lancashire Garden," published in these columns, will have reason to mourn the loss of an elegant scholar and an agreeable writer in the decease of Mr. H. A. BRIGHT. The scanty ranks of British landscape gardeners have been sorely weakened by th death of Mr. MILNER, a worthy pupil of PAXTON'S.

Such losses are, in a sense, irretrievable, the band is for the time weakened, but happily there is no fear for the future. Horticulture and botany are progressing and likely to progress,



THE ROCK-GARDEN AT STANCLIFFE.

not perhaps in the old lines in which our lost ones achieved such success, but in other departments in which a brilliant future seems to be dawning. A spirit of thankfulness and hope rather than of discouragement would thus seem to be most appropriate to the close of one year and the opening of another.

—— "VEGETABLE TERATOLOGY."—The English edition of Dr. MASTERS' work has been out of print for some years. A German translation is now in progress by Mr. UDO DAMMANN, with numerous notes and additions by Professors CASPARY and MAGNUS.

—— PURVEYORS OF ROSES TO ROYALTY.—Messrs. WILLIAM PAUL & SON, of Waltham Cross, have lately received a Royal warrant appointing them Rose growers to HER MAJESTY.

—— THE UNIVERSITY OF LONDON. — The degrees conferred by this body are held in the highest esteem, but although this is the case the University has not obtained in the public mind the degree of importance which the high character of its examinations demands. By some this is attributed to the fact that the University is an examining body only, and that consequently there is less *esprit de corps* among the undergraduates and graduates, less sympathy between the authorities and candidates, and between examiners and teachers, than there should be. In consequence, a movement has been set on foot to establish, either separately or conjointly with the present University, a teaching University, in which the standard of tuition shall be as high as that of the examinations is already. In the medical school in particular, the practical tuition in science—always excepting the clinical teaching of medicine and surgery—is generally defective. The scientific teaching is too commonly confined to lectures without any sufficient practical tuition. How this works in the case of botany is seen in the examination-room, where the candidates (not only from medical schools but from almost all sources), come primed with text-book knowledge, but in which the use of such simple tools as a pocket lens, a dissecting needle, or a dissecting microscope is often all but unknown except to a limited number of candidates who have enjoyed special opportunities. This points to a defect in the teaching arrangements, which the new University would no doubt remedy, so as to ensure generally as good practical teaching as is now to be had at Cambridge, South Kensington, and a few other places, but which is not available for the majority of London students.

—— THE DRYNESS OF THE PAST SEASON.—How dry the ground became during the past summer was shown at Gunnersbury Park in the course of root-pruning a number of pyramid and standard fruit trees. On throwing out the soil and getting down to the roots the soil about them was found to be almost dust-dry, and Mr. ROBERTS has deemed it expedient to thoroughly saturate the soil with water after the pruning is completed, and before the soil is put back. And if this has happened in the open, how dry must be the soil in groves and other places where the overhead foliage is dense, and where but little of the present rainfall can penetrate. Ditches, ponds, and brooks are still very low for the season, and it is instructive to note how quickly the water passes away after a heavy fall. In a day or two the highways are comparatively firm and dry, and very different to what is seen at this season of the year. We require a lot of rain yet—the sooner it comes the better.

—— THE ORANGE IN NEW SOUTH WALES.—In 1883 the colonial orangeries produced 8,102,658 dozen, or nearly one hundred million Oranges, the greater portion of which was equal to the finest fruit of southern Europe.

—— THE GERMINATION OF FERNS.—The little green scales which issue from the spores of Ferns when they germinate are known to most Fern lovers. It is not so generally known that the sexual organs, male and female respectively, are placed on the lower surface of these scales, and that the new Fern frond is the product of the union between the male and female element effected on the green scale or prothallium. Hence, in an ordinary Fern we have the fully developed frond with its spore cases and their contained spores. This constitutes one stage of the plant's existence. Another stage is constituted by the germination of the spore and the formation of the prothallium with its male (antheridia) and female organs (archegonia). This much has been known for nearly forty years. Ten years ago it was discovered that in some cases buds, analogous to the bulbils found on the fronds of Asplenium viviparum, &c., were produced from the prothallus without sexual agency. Latterly Mr. DRUERY has made the curious discovery that prothallia bearing sexual organs are sometimes produced on the spore-bearing frond as a metamorphosis of the spore-case; and still more recently Mr. BOWER has discovered among Mr. DRUERY'S Ferns specimens in which the sexual organs have been formed on prothallia produced direct from the frond without the intervention of spores or spore-case. This simplification of the arrangements tends to show that the sexual organs are not originally so sharply marked off from the vegetative as is sometimes supposed.



FIG. 141.—PINUS JEFFREYI.

From a sketch of a California specimen, by Sir Joseph Hooker.

—— NATIONAL AURICULA AND NATIONAL CARNATION AND PICOTEE SOCIETY (Southern Section).—The exhibitions of these Societies will be held, by arrangement with the Council of the Royal Horticultural Society, in the gardens of the Society at South Kensington—the Auricula on April 21, the Carnation and Picotee on July 28. April 21 is not a committee day of the Royal Horticultural Society, and an effort was made to fix the exhibition for April 28, but failed, owing to that date having been previously appropriated by the Council of the Royal Botanical Society of Manchester. A meeting of the joint committee of both Societies will be held, by permission, in the conservatory at South Kensington, on Tuesday, January 13, after the various committees have completed their work. The principal business will be to pass the rules for exhibitors, and to arrange and sanction the printing of schedules for 1885.

—— ROSE SHOW FIXTURES FOR 1885.—The National Rose Society will hold a Rose Show at the Royal Horticultural Society's garden, at South Kensington, on July 8, and at Manchester, on July 11. There will be shows held at the Crystal Palace, July 4; at Sutton, on July 8; and at Canterbury, July 27.

—— CARAPA GUIANENSIS.—The three or four species belonging to this genus are recorded as having been imported to this country, but probably the above-mentioned is the only one in cultivation here now. In its native country it attains a height of 60 feet, and is of some economic value on account of its medicinal properties; but in British gardens its value lies in the large pinnately compound leaves. The leaflets are of an intensely green colour and of a leathery texture when fully developed, but during their progress from the bud state to the maximum size they appear of a glowing red or scarlet. This property compensates for the want of showy flowers which are small and inconspicuous although numerous in all the species. In the Palm-house at Kew, where some large specimens are grown, one has been flowering for some time. The panicles are axillary, and bear yellow flowers stained with red.

—— TOMATOS.—It is often said that people may get used to anything, in the matter of what they eat included, and there is no denying the fact that an acquired taste is necessary to make some things at all palatable—Tomatos to wit. The flavour of this vegetable is so different to that of everything else, and until recent times it was comparatively so little known, that there was little demand for them, yet the way that people take to eating the juicy red fruit, raw or cooked, after a few trials of it, is surprising. In proof of this it is only necessary to point to the immense quantities now cultivated in England, besides those brought from other countries. We hear that Mr. LADDS, the leviathan grower, sent as much as 20 tons per week to market during the height of the season. The summer through which we have just passed, like the preceding, has been unusually favourable to the growth of Tomatos in the open ground; continuous sunshine favoured the growth of the plants and the ripening of the fruit, whilst the dry condition of the air kept away the dread Potato disease, which is usually alike fatal to Tomatos. Mr. LADDS has been very successful in the two past summers with Tomatos in the open, the 6 or 7 acres he has this summer grown have yielded immense quantities for seven or eight weeks. Yet the outdoor cultivation of Tomatos is a risky affair; the labour involved, breadth for breadth, is quite as great as under glass, whilst the length of time the plants yield in the open air, even in the best seasons, is comparatively short to that of the plants when well managed under glass.

—— PUBLICATIONS RECEIVED. — *The Golden Centre Annual.* CASSELL & CO. — *Illustrated Monthly Magazine.* VICK, New York.—*Young England.*

—— GARDENING APPOINTMENTS.—Mr. EDWARD JONES, late Foreman at Sandon Hall Gardens, has been appointed Head Gardener to V. A. EYRE, Esq., Lindley Hall, Nuneaton.—Mr. E. B. JONES has been appointed Head Gardener to W. T. CRAWSHAY, Esq., Cyfarthfa Castle, Merthyr Tydvil.

PINUS JEFFREYI.

DURING my visit to the coniferous forests of the Western United States with my friend Professor Asa Gray, in 1877, I made an attempt to sketch the most characteristic specimens of the various species of Abietineæ, &c., that I met with on our journeys with the view of offering them to the *Gardeners' Chronicle*. A press of duties, and more urgent calls on my time supervening on my return, and never intermitted since, have prevented my putting my intentions into execution till now, when, other reasons having required my giving up some time to the study of Coniferæ, I find myself able to realise my project.

The first sketch I have to offer (fig. 141) is that of what I regarded as a characteristic young specimen of Pinus Jeffreyi, a species much confounded with P. ponderosa, Douglas, or Benthamiana, Hartweg, but which I have always found to be distinguishable by its spare habit, smoother, darker bark, which is not cut up into projecting plates with deep intervening fissures, its sparse and darker green foliage, and glaucous young shoots. Engelmann, in his *Revision of the Genus Pinus* (p. 21), regards it as a variety of P. ponderosa, with the reservation that "it may claim specific recognition." I am disposed to reverse this verdict, and regard it as a species that may prove to be a variety. I found that the woodmen in California distinguished them, the P. ponderosa being called the Yellow Pine, and the Jeffreyi, Black Pine—preference being given to the wood of the former. I am, however, far from putting too much confidence in the powers of discrimination of woodmen, or in their nomenclature; in which respects they are perhaps not much less accurate than botanists inexperienced in woodcraft. The cones of Jeffreyi are usually described as being larger than those of ponderosa, but I think this arises from imperfect information, for some of the largest cones I saw on either species were in forests of ponderosa, on the west flanks of the Sierra Nevada, where the trees were of superb growth and in a wealth of foliage that I had not elsewhere met with.

The tree of which the accompanying sketch is given, grew at 7000 feet elevation on the Silver Mountains, a section or group of the Sierra Nevada of California, in lat. 39° N., and on the eastern slopes of the range, which, according to Sargent's *Catalogue of the Forest Trees of North America*, is on its assigned range. This author describes it as a variety of P. ponderosa, occurring principally along the eastern slopes of the Sierra Nevada, about 5000 feet elevation, as attaining a height of 200 feet, with a trunk 10 to 15 feet in diameter, growing often in the most arid situations. I did not meet with specimens approaching these proportions.

As an object for cultivation in England, P. Jeffreyi is in every way inferior to its near ally; and whatever may be thought of its claim to botanical distinction, there is I think no doubt but that, whereas a well grown P. ponderosa is a very handsome object, the best Jeffreyi that I have seen is scarcely an ornament. *J. D. Hooker.*

(To be continued.)

Florists' Flowers.

POLYANTHUSES, GOLD-LACED.—The numerous enquiries that are being made about these serve to show that they are being grown much more numerously than is supposed. There is an awakened interest in them, and so it is that the pendulum swings back again into its old position, and old loves are revived. A few years ago it was almost feared that fine old-named sorts were altogether lost; but here and there a grower in a quiet way held a collection, and time has enabled some sorts that were scarce to become more numerous. Lord Lincoln remains very scarce and dear; so does the true form of Pearson's Alexander, which is said to be in the North; but George IV., Lancer, Prince Regent, Cheshire Favourite, and President, all good and useful show varieties, can be had at moderate prices. Exile is scarce, and Lancashire Hero also. The common kinds, such as Burnard's Formosa, Sir Sidney Smith, and William IV., are cheap enough. Barlow's Model is undoubtedly one of the best of the newer varieties: when caught in good condition it is near perfection, but the flowers do not open kindly at times. It was feared that Mr. Barlow had lost his beautiful old Sunrise, but he yet retains a few plants. There are other new varieties in the Lancashire districts of which we shall no doubt hear more when the blooming time comes round. There is no reason why the marvellous leap forward which has been made with the Auricula should not extend to the gold-laced Polyanthus; but it will have to be left to a great extent to the Lancashire florists to carry out the work. At this season of the year Polyanthuses in pots will bear more moisture than Auriculas. My own plants are in a frame facing the north, the pots standing on a bottom of cocoa fibre. They will also bear more moisture about the roots than the Auriculas, or at least what is good for the Auriculas at this season of the year. All the old growers recommended that the soil should be kept well up to the shoulders of the plants, and one readily perceives their reason for this—to induce the plants to put forth fresh roots at the surface. I find it a good plan at potting time to dispense with as much of the old tap-root as possible. What the grower should aim at is inducing the putting forth of fresh roots near the collar of the plant. I am further of opinion that dryness at the roots causes more losses of plants in winter and early spring than the opposite—at least this is my own experience, for in my endeavours to prevent harm from frost and the cracking of pots, a kind of dry-rot has set in at the collar, and which kills the plant. However, one can but try, though the measure of success meted out too frequently falls below the measure of one's exertion. It will always be difficult to grow named gold-laced Polyanthuses in the South for exhibition purposes. *R. D.*

GLADIOLUS, THE BRIDE.—*Apropos* to my remarks as to the proper time of planting this charming variety, the wisdom of which was doubted by "J. S.," I have now to say, that it is the practice of those who grow this by the thousand to plant the corms in autumn. One large market grower near London, whose "wisdom" even "J. S." would not, I think, call in question, had all his bulbs in the ground nearly two months since, and I know of many similar instances; indeed, as I previously remarked, there are many batches of bulbs in different parts of the country which have stood unprotected three and four years. Mr. Jenkins' remarks were very happy as to the size of the corms, as many upon first making its acquaintance have expressed surprise at the size of the corms when compared with those of G. brenchleyensis and the gandavensis series. *R.*

NEW PLANTS CERTIFICATED

BY THE ROYAL BOTANIC SOCIETY, 1884.

*** *B.C., Botanical Certificate; F.C., Floral Certificate; either being equal to a First-class Certificate.*

Abies Douglasii glauca	Veitch, June 18—B.C.
Acer palmatum roseum	New Plant and Bulb Co., May 21—B.C.
,, ,, aureum	New Plant and Bulb Co., May 21—B.C.
Adiantum cuneatum striatum	B. S. Williams, March 20 B.C.
,, rhodophyllum	Veitch, March 26—B.C.
,, Weigandii	Veich, June 18—B.C.
Andromeda japonica albo-marginata	Veitch, June 18—B.C.
Anthurium Scherzerianum Cypheri	Cypher, May 21—B.C.
Cattleya Mendelii majus	Hill, June 18—B.C.
,, ,, marginata	Salter, May 21—B.C.
,, Schroederi	Salter, June 18—B.C.
,, Trianæ Leeana	W. Lee, March 26—B.C.
Croton gracillimus	Laing & Co., June 18—B.C.
,, superbus	Laing & Co., June 18—B.C.
Cypripedium albo-purpureum	Veitch, June 18—B.C.
,, cardinale	Veitch, June 18—B.C.
,, ciliolare	B. S. Williams, May 21—B.C.
,, Curtisi	B. S. Williams, June 18—B.C.
,, Druryi	B. S. Williams, March 26—B.C.
,, insigne sylhetense	Veitch, April 23—B.C.
,, Robeleni	Cypher, May 21—B.C.
,, Schroederi	Veitch, June 18—B.C.
,, selligerum majus	Veitch, June 18—B.C.
Dendrobium Bensoniæ alba	Cypher, June 18—B.C.
,, crassinode alba	Cypher, June 18—B.C.
Dieffenbachia Jenmanni	Veitch, March 26—B.C.
Drosera auriculata	Veitch, June 18—B.C.
Dracæna latifolia splendens	Veitch, June 18—B.C.
Ficus elastica albo variegata	Ker & Son, May 21—B.C.
Gymnogramma chrysophylla	Veitch, June 18—B.C.
Kalmia latifolia	Veitch, June 18—B.C.
Kentia Lindeni	B. S. Williams, April 23—B.C.
Lælia purpurata albo lilacina	B. S. Williams, June 18—B.C.
Leschenaultia biloba major	Balchin, June 18—B.C.
Leucothea Davisi	Veitch, June 18—B.C.
Lomariopsis buxifolia	Veitch, June 18—B.C.
Masdevallia Chelsoni	Veitch, March 26—B.C.
,, Chelsoni	W. Lee, March 26—B.C.
,, Schlimi	W. Lee, March 26—B.C.
Metrosideros floribunda alba	B. S. Williams, June 18—B.C.
Muscari concinnum	J. Douglas, March 26—B.C.
Odontoglossum Alexandræ ainabile	Veitch, June 18—B.C.
,, elegans superbissima	Sander & Co., May 21—B.C.
Odontoglossum macrospilum	B. S. Williams, March 26—B.C.
,, mulus	James, May 21—B.C.
,, Oerstedii	W. Lee, March 26—B.C.
,, polyxanthum	James, May 21—B.C.
,, Wilckeanum Littlei	Hill, March 26—B.C.
Oncidium macranthum magnificum	Salter, June 18—B.C.
,, nigratum	Veitch, June 18—B.C.
Osmanthus myrtifolius	Veitch, June 18—B.C.
Phalænopsis casta	Aldous, April 23—B.C.
Phalænopsis grandidens	Veitch, June 18—B.C.
Phyllanthus subemarginata	Veitch, June 18—B.C.
Psychospermia Seemanni	B. S. Williams, April 23—B.C.
Sarracenia Flambeau	B. S. Williams, June 18—B.C.
,, Mitchelliana	B. S. Williams, April 23—B.C.
,, Tolliana	B. S. Williams, April 23—B.C.

FLORAL CERTIFICATES.

Amaryllis Admiration	Veitch, April 23—F.C.
,, Colonel Burnaby	Veitch, March 26—F.C.
,, Madonna	Veitch, March 26—F.C.
,, Mrs Hibberd	Veitch, March 26—F.C.
,, Mrs. Herd	Paul & Son, April 23—F.C.
,, Princess of Wales	Veitch, April 23—F.C.
,, Sir R. Buller	Veitch, March 26—F.C.
,, W. Lee	B. S. Williams, June 18—F.C.
Auricula General Gordon	J. Douglas, March 26—F.C.
,, Mrs. Moore	J. Douglas, March 26—F.C.
,, S. W. Hewitt	J. Douglas, March 26—F.C.
,, Yorkshire Hero	J. Douglas, March 26—F.C.
,, Azalea indica Antigone	Turner, April 23—F.C.
,, La Merveilleuse	Veitch, March 26—F.C.
,, indica Souvenir de Marie Rossel	Rossel, April 23, F.C.
,, ,, Paul de Schryver	Veitch, April 23—F.C.
Begonia alba plena	Laing & Co., June 18—F.C.
,, Distinction	Laing & Co., May 21—F.C.
,, General Gordon	Laing & Co., May 21—F.C.
,, Hercules	Laing & Co., June 18—F.C.
,, Her Majesty	Laing & Co., May 21—F.C.
,, Lady Chesterfield	Laing & Co., May 21—F.C.
,, Lord Chesterfield	Laing & Co., May 21—F.C.
,, Lord Crewe	Laing & Co., June 18—F.C.
,, Mr. A. Forbes	Laing & Co., May 21—F.C.
,, Mrs. Weekes	Laing & Co., May 21—F.C.
,, Rose Laing	Laing & Co., June 18—F.C.
,, T. Hewitt	Laing & Co., May 21—F.C.
,, W. Spioks	Laing & Co., June 18—F.C.
Caladium Baron James de Rothschild	Laing & Co., May 21—F.C.
,, L'Aurore	Laing & Co., May 21—F.C.
,, Mitzana	Laing & Co., May 21—F.C.
Carnation Mary Morris	Veitch, June 18—F.C.
Cineraria Beadsman	James, April 23—F.C.
,, Lottie Williamson	James, March 26—F.C.
,, Mrs Arden	James, March 26—F.C.
,, Pioneer	James, April 23—F.C.
,, Princess Ida	James, April 23—F.C.
,, Princess of Wales	James, March 26—F.C.
,, Sir F. Roberts	James, March 26—F.C.
,, Venus	James, March 26—F.C.
Croton Flambeau	Ker & Son, May 21—F.C.
,, musaicus	Ker & Son, May 21—F.C.
,, Sunrise	Ker & Son, May 21—F.C.
Cyclamen Dame Blanche	Smith, March 26—F.C.
,, Hillingdon Rival	Hill, April 23—F.C.
,, Purity	Hill, March 26—F.C.
,, Rose Queen	Hill, March 26—F.C.
,, rubrum giganteum	Hill, April 23—F.C.
Gloxinia Beauty	Laing & Co., May 21—F.C.
,, Brunette	Veitch, June 18—F.C.
,, G. Amer	Laing & Co., May 21—F.C.
,, Mrs. Coomber	Laing & Co., May 21—F.C.
Hyacinth Harlequin	Veitch, March 26—F.C.
,, Lord Derby	Veitch, March 26—F.C.
,, Minerva	Veitch, March 26—F.C.
Pelargonium G. Shepherd	Hill, May 21—F.C.
,, Harvester	Hill, May 21—F.C.
,, (fancy) Magnate	Foster, June 18—F.C.
,, (fancy) Man-at-Arms	Foster, June 18—F.C.
Rose Etendard de Jeane d'Arc	W. Paul & Son, May 21—F.C.
Syringa Lemoineana	Lemoine, April 23—F.C.

THE SWEET CHESTNUT.

THE fruit of the Sweet Chestnut has ripened this year better than usual, and seed for planting will no doubt be obtained in large quantities from the southern counties. As the Chestnut needs only to stand two years in the nursery rows, as it grows very rapidly when young, and attains greater value in suitable soils as a coppice wood than any other tree, the abundance of seed will prove a boon both to the nurseryman and planter.

But the Chestnut, though it has been known and grown in this country from time immemorial is not a native tree, and its timber is not of great utility except when it is young. As a tree of ornament, however the "tufted Chestnut" has long been held in the highest esteem. It graces the landscapes of Salvator Rosa, and, although it is not the timber tree of our woods, as in Calabria, it forms one of the chief embellishments of some of our noblest parks. It is found everywhere as an ornament, generously provided by our predecessors, the planters of former times. I can necessarily only mention a few places where I have observed the Chestnut on such sites as it delights in, as, for instance, at Cobham Park, Cowdray, Croft Castle, and Inverary. Most persons will remember to have seen the Chestnut trees in Greenwich Park, or near the Magazine in Hyde Park, in a soil which would grow them better and bigger if it were deeper.

Some of the largest Chestnuts I have measured are in the deep rich warm loam of Burgh Gate, Hascomb, Surrey, where several of the trees have attained a

girth of 19 feet and 20 feet at 5 feet from the ground.

A number of places might be mentioned in Surrey and Sussex where the best soil of the Upper Greensand has been washed down into hollows and sheltered spots such as the Chestnut delight in, and where it ornaments many a noble park. Throughout the whole of that charming tract of hill and valley, poor above on the hills and rich below in the vales, lying between Redhill and Guildford, under shelter of the North Downs, Chestnuts are quite at home. The loams of Dorking have their specimens. Evelyn's wood and park at Witton, though on poor ground generally and planted accordingly with Beech, contains some good specimens; on the best land near the trout stream in the bottom, and four miles lower down the valley, at Albury Park, which is watered by the same stream, and where Evelyn planted the famous Yew hedge, numerous handsome Chestnuts show their fondness for a sheltering hill, and for the loams of Surrey when they are not too poor.

In that part of the domain at Goodwood which once formed a separate park, attached to Halnaker House (now a ruin), on cool deep soil upon chalk, there is a fine avenue of Chestnuts, and some single trees of great size. I measured several 18 feet in girth, and one, at the south-west corner of the park, proved to be 20 feet 10 inches at 4 feet from the ground, having a trunk undivided to a height of 20 feet, and a spread of branches extending 84 feet. There are larger Chestnuts, but some of those we meet with, especially in books, have not been measured quite fairly.

The great tree at Tortworth in Gloucestershire has been reported "57 feet in circumference," which, if it refer to the spread of the branches, is very little; if to the trunk, fairly measured at several feet above the ground, is impossible; and if to the circumference at the ground, and including the spreading spurs at the base, it means nothing, conveying no true idea of the real size of the tree. The Tortworth Chestnut is believed to have been planted by the Romans, and to have been the first Chestnut that grew on English soil. In the reign of King John it was a boundary tree; in that of Stephen it was called the "great Chestnut of Tortworth." I have mentioned the fondness of the Chestnut for the Upper Greensand of Surrey. The same formation spreads around the tree-producing neighbourhood of Midhurst, a parish in Sussex without compare for deep lanes, delightful walks, and soils of varied strength and texture, deep Chestnut-growing loams, hard Beech-bearing sands, and others of silken texture, such as Ferns delight in.

The greatest ornament of Lord Egmont's park at Cowdray, adjoining the town of Midhurst, is the Chestnut Avenue, locally called "The Race." In Selby's capital book on *British Forest Trees*, published in 1842, and containing descriptions of many noted Chestnuts, the avenue at Cowdray is said to consist of trees having an average girth of 6 feet and a height of 40 or 50 feet. They are now very much bigger, many of the boles measuring 16 feet, while the trees have attained a height which I estimated on the spot at from 75 to 85 feet. The trunks are tall, and they taper gradually; and as this is a perfect avenue I may add that 14 yards between the plants from row to row, and 8 yards from plant to plant in the rows, are the proper distances apart for the trees of an avenue of Chestnuts on rich land. There is a many-headed Chestnut standing in the open park at Cowdray with a trunk 15 feet round, bearing two great boughs and many lesser ones extending over a space round as King Arthur's Table and 90 yards in circumference. The head is perfectly globular, and is generally covered with blossoming racemes about June 18.

As already noticed the timber of the Chestnut at maturity is not so useful as the tree is ornamental, and those roofs of old buildings in this country and in France which were once supposed to be of Chestnut have been found to consist of Oak, whose timber in the course of time assumes the same dark colour as that of the Chestnut. On the other hand young Chestnut up to forty or fifty years' growth is far more durable than Oak of the same age, containing a great deal more heart-wood, and hence the great value of those unmixed underwoods of Kent and Sussex where the Chestnut has been largely planted in congenial soils for the production of hop-poles and hoops. *H. E.*

Home Correspondence.

Gardeners and Salesmen.—As an outsider in the little dispute which has grown up suddenly between salesmen in the London markets and their gardener clients, I have been much interested in the evidence the dispute undoubtedly affords of the wide-spread prevalence of practical market gardening in our private establishments. The *bonâ fide* market grower who sinks his capital in rent, glass, labour, and many other costly incidentals to market gardening naturally views with apprehension the host of private gardeners who enter the lists against him, and do so from a very different standpoint, because they are willing to accept any return so long as they can show their employers something has been sold. If in their experience they get now and then taken in themselves, the market grower chuckles and enjoys their outpourings of spleen against their apparent natural enemies, the market salesmen. I do not suppose that Covent Garden any more than Billingsgate or Smithfield enjoys a monopoly of honest dealers or agents; but I expect the vegetable, fruit, and flower salesmen

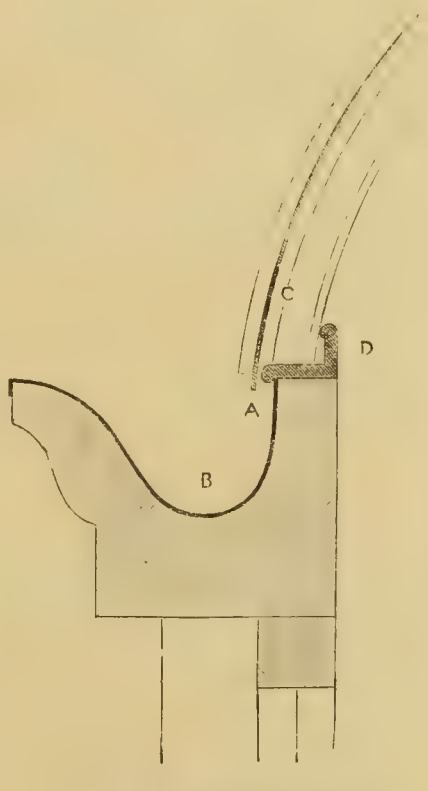


Fig. 142.—W[illegible] TREE VASE. (SEE P. 803.)

are, to use a common phrase, about as "good as they make 'em," neither better nor worse. The private gardeners, literally in shoals, send up to market whatsoever they may have to spare, and always imagine that the wealthy metropolis will be delighted to purchase, and not only that but in consideration of the fact that the things are from the gardens of some country proprietor who generously condescends to allow his produce to be sent to Covent Garden, expect that the price will be rather above the average. Will the consigning and not less confiding gardener ever learn the simple principle in social economy, that the flooding of a market with goods means an unprofitable return, whilst if the demand is great the price or return is commensurate? Probably in many cases the salesman can hardly give away the consignments that flood his stand—things which just then no one wants or cares to have: what wonder if the agent guards himself against loss first? If gardeners are anxious to obtain a little of the gold which they seem to think London streets are paved with, why do they not, before consigning to salesmen of their surplus garden produce, first ascertain whether such things as they may have are in demand, and what are the ruling prices? Surely an inquiry made to any respectable salesman would elicit a reply, and if some were not respectable enough to send a reply then the intending consignor should be suspicious. I am not at all sure that salesmen regard the irregular garden consignor with anything like esteem. He cannot be relied upon when necessary. There are plenty of gardeners who trade with Covent Garden in an almost wholesale fashion; in fact, they are market growers under the guise of private gardeners. Of course these send their produce with regularity, and can be relied upon to furnish what may be needed when a pinch comes. These always get their prices as good, in fact, for their employers—who perhaps pay scarcely any rates or taxes for their gardens, because it is assumed that such gardens are maintained solely for pleasure—as do the *bonâ fide* market grower, who pays heavy rents, rates, and taxes, and can only live by very hard work. Many private gardeners have themselves as much to blame as their impecunious employers, that they become consignors of garden produce to market. They have dreamt of a London Eldorado, and find now in reality that all that glitters is far from being gold. *D.*

Lilium candidum.—Great additions (all more or less beautiful) have of late years been made to the ornamental and well-known genus of Lilium; notwithstanding this the white Lily of our gardens holds its place. It is perfectly hardy and will grow in any ordinary garden soil. It is very useful for indoor decoration, and for this purpose it requires gentle forcing. The roots should be potted early in the autumn, and when potted they should be placed in an open situation, where they may remain until frosty weather sets in, when they should be removed to a cold frame or pit. Here they should remain until the latter part of March, when part of them should be put into a little heat, and watered carefully until growth commences, when they will require a little more water. They will not require a great heat to get them into flower; the more moderate the better, as they will flower finer and stronger in a gentle heat. With a little care they will commence flowering in the latter part of May, and continue through June and the early part of July; they will last a considerable time in flower, and when done they should be carefully planted in a reserve border. The whole of the plants should not be put into heat at one time, only a portion of them, then as the early lot is beginning to go out of bloom the most forward lot will be commencing to flower. Those who have large quantities of cut flowers to provide during the early summer months will do well to pot up and force this beautiful Lily. *M. Saul, York.*

Hot-water Pipes and Tar.—I had from the first thought of writing upon this subject in answer to your correspondent, but as I was not quite sure of the remedy, I did not do so, thinking that no doubt others would be coming forward offering theirs; but as they have failed, I am now induced to say that I think the "Electric Paint Remover," procurable through an ironmonger, with directions for use, would meet the case, as it has far superseded anything of the kind, most effectually removing paint of the hardest possible kind and of many years' standing, and this I know from experience, and had therefore thought that, from its very strong chemical nature and easy application, it would in all probability prove useful. There would be no harm in trying it; *2s. 6d.* thus spent (the price of the smallest tin) might save a lot of trouble and expense in the law courts. *G. W. K., Godalming.*

British Apples.—One or two errors in transposing notes made in reference to collections of apples have furnished Mr. Miller with a fair opportunity of airing a little geology, and of drawing conclusions in reference to subsoils which favour too much the Old and New Red Sandstone formations. It is hardly necessary for me to say that the geographical and geological position of Trentham is matter of such common knowledge, that when I saw in *British Apples* New transposed into Old Red Sandstone, I did not think it necessary even to draw the attention of the compiler to the error, well knowing that it was not likely to escape his notice if a second edition of the report should be called for. There are several misleading statements in Mr. Miller's geological discursions that I should like to draw attention to, as at some time I may have something to say in reference to the effects of subsoils upon fruit and fruit-trees. In describing Trentham Gardens as resting upon "Permian beds of new red marl," he is somewhat misleading. Any one acquainted with the New Red Sandstone formation will be quite aware of the abrupt transitions of subsoils (especially here, where we are just within the coalfield) from rock to gravel, marl, sand, "rotche," &c.; and it so happens that the kitchen garden here rests almost entirely on a bed of laminated, somewhat micacious "rotche," which I have found to be a most unsuitable subsoil for fruit trees at all times, whilst the "new red marl" spoken of is an excellent subsoil for fruit trees, where they happen to be planted on such even in this district. There are several other statements in Mr. Miller's resuscitated geological impressions which require very liberal translation. When he speaks of "Kingswood bank" as a "formation of pebble and conglomerate," this does not fitly describe mere beds of sand and

immense heaps of gravel not permeated by any matter, calcareous, siliceous, or ferrugineous, &c., capable of binding sand and pebble together; neither is he very happy in speaking of "the very hard white freestone from the quarries at Hollington," or of the position of these quarries being in the Churnet valley. If Mr. Miller can spare a day at any time I shall be very happy to give him the opportunity of refurbishing his geological knowledge of this locality. *Z. Stevens.*

Carter's Ashtop Fluke Potato.—The following reference to this Potato at the present time may interest you. In a letter received this morning, a nobleman's head gardener writes, in reply to a query of mine—"We have at different times tried almost every accessible early variety of Potato for frame culture, and in raised boxes in the early vinery, and this year are confining ourselves to the Ashtop Fluke, and Myatt's (the true variety). Those in the hotbed are progressing finely, and I am preparing to plant the sets in the boxes." I had this variety myself planted against a south wall in the end of February, and fit for use the 10th of June. The crop was heavier than Rivers' Ashleaf, a few days earlier, while the flavour left nothing to be desired. Being one of the earliest varieties, the rooks will make great havoc among them if not protected. For forcing or outdoor culture you will therefore be safe in recommending this potato. *W. J. Murphy, Clonmel.*

Potato Cultivation.—There does not appear to be much difference between Mr. Jensen's way of growing Potatos and that which I have practised for at least five and thirty years, and which was originally proposed by Mr. Bolton, gardener to Mr. Winn, of Nostele Priory, as a means of lessening the liability of the crop to disease. We grow them in rows a yard apart, and set the plants a yard apart in the rows; the rows are first earthed-up in the ordinary way, then ten days or a fortnight afterwards the haulm is beat down into the trenches, and the earth between the plants in the row is heaped on to the top of the plant. Having tried it for more than thirty years, I never had the least doubt about the Potatos thus grown being less liable to disease than those grown in the ordinary way, and they produce a crop at least as heavy, generally heavier than those grown closer and in closer rows, the only disadvantage being that the individual Potatos are apt to grow too large in the heaps—so large sometimes to be hollow in the middle. I believe that when we first grew them thus the plan was mentioned in the *Gardeners' Chronicle. C. Strickland.*

Jasminum gracillimum. — This lovely white sweet-scented plant has now been fairly admitted into the list of good things worth growing in quantity for winter cutting and decoration. At Messrs. Hugh Low & Co.'s Clapton nursery a very large lot of it is now in bloom. The plants, which are in 48-sized pots, are about 1 foot to 1 foot 6 inches in height, bushy, compact, and well covered with bloom of such beauty and fragrance that it may easily be conjectured that they will not long remain on hand. At the same nursery a fine lot of the greenhouse variety, J. grandiflorum, is also in bloom, the plants being bushy and good. The old Jasminum hirsutum also retains its place at Clapton as a good plant for winter work. *J. O'B.*

Narcissus viridiflorus.—It would be interesting to know whether any one has succeeded in flowering any of these bulbs, of which at least a hundred were distributed about this time last year by Mr. G. Maw. Besides these I distributed about fifty. The natural time for their flowering is October or November. The bulbs I reserved for myself, and planted under various conditions, and treated with various degrees of warmth, have none of them flowered, and hardly any have attempted to grow. N. monophyllus, the white Hoop-petticoat, imported from Algeria in the summer, is showing many buds in the greenhouse. *C. Wolley Dod.* [With us N. viridiflorus, in a pot in a cold frame, has sent up merely a small green "spire." ED.]

Pancratium caribæum.—What a lovely variety this is—from the West Indies, I learn. Its pure white flowers are so fragrant, and most useful for bouquets or table dressing—there are not many to compare with it, if any to excel, its elegant style. I received one good bulb from Mr. Bull in September last, which I potted up in a small pot and finally gave a shift into an 8-inch pot, with the pleasing results of a capital spike with about fourteen flowers, open and opening. Where praise is due praise should be given, and this grand Pancratium well merits it. *Thos. Garnett, Cavendish Gardens, S.W.*

A Hint to Young Gardeners.—"F.," on p. 726, has brought before young gardeners the subject of drawing. Now, I consider a thorough knowledge of drawing is a necessary requirement of a gardener's education. We seldom hear of mistakes being made in garden buildings when the gardener is able to put his ideas on paper in the form of a sketch. In place of any pretension the gardener ought to be able to do this, and by his being able to do so he becomes a more valuable servant, and should command a higher salary than usual; and the young gardener who knows a little of geometry is in all cases a better workman than the one who does not. Many gardeners never require to prepare plans, and others do, and some lose good situations because they cannot lay out a plan when prepared by a landscape gardener. I say, Young men, don't be found wanting. If young gardeners could only know the loss they incur by being too much in the village, spending often their evenings in the beer-shop, or frittering away their time in a manner they feel shame for in after years. We hope many will take a hint from the suggestion thrown out by "F.," and we feel certain they will endorse his words as to the amount of pleasure they will derive from making a better use of their spare time. When they can put glasshouses and other garden buildings on paper, and show the elevation and sections according to scale, they will be on the road to success. Arithmetic, surveying, levelling, and drawing would form part of an agreeable winter evening's work. *W. M. G.*

Smilax aspera.—One point of special attention in the Smilax aspera figured in your last issue is not mentioned. At this time of year in the Riviera it is the plant for decoration, owing to its brilliant berries. I wonder our nurserymen don't grow it for that purpose. I never saw it berried in England, but surely it would berry in greenhouses. *H. N. Ellacombe, Bitton.*

Rooks and Steeped Wheat.—The following curious circumstance, new to me, may interest your readers, especially such of them as have a "home farm" besides the garden to look after. I was engaged at the usual time in getting in some Wheat which I had previously steeped in Goulding's Anti-Smut, or "Bunt" mixture, and then dried out on the barn floor with lime. Every one of those mixtures are poisonous, and so labelled, generally having copperas as a base. I took elaborate precautions to scare away the crows, or rooks, and jackdaws; but it was quite unnecessary, as not only would they not touch a grain of it, but they would not even alight where I had the seed strewn. This fact may interest in other ways. *W. J. Murphy.*

PLANTING DURING THE PRESENT SEASON.

THOSE who have any considerable amount of ground work in hand connected with planting, cannot fail to have noticed that the dry weather, so often looked upon as indispensable to the furtherance of such operations, has this season gone to such extremes as to make the work slow and difficult, and in some cases all but impracticable. In many places where draining and trenching have been required, the pick has had to do much of the work, so extremely dry has the under-surface become; nothing could be more deceptive than the partial surface moistening which the recent rains have effected over a large extent of the southern parts of the kingdom—the rain has not descended more than nine or ten inches, the under stratum below this for several feet being dust-dry. In many places at a depth of 4 feet the clay is full of cracks that will nearly admit the hand, and so hard and devoid of moisture that it is almost like cutting lead. In the matter of planting the difficulty has not ended with the preparation of the ground to be occupied, for where much has had to be done the taking up of shrubs and trees has been a difficult, and, in many cases, not very satisfactory operation. This kind of work is not usually better done than it needs be, as too many of the roots are too often left behind, and this season, unless the plants previous to taking up were well soaked—a slow process—there has been danger of their being removed comparatively rootless. The result of such work, in the case of evergreens, is that more than the usual percentage of deaths occur, and with those plants that live in place of making their wonted progress they remain in a stunted condition for two or three years. With deciduous kinds under such a state of matters the deaths that may be looked for are fewer, but with them there is a comparative absence of progress for a time. The presence of the deep cracks already spoken of will effectually prevent much water reaching the brooks and rivers for some time, and the outlook is beginning to be somewhat serious; the time when the greatest amount of rainfall usually takes place is fast going by with little beyond passing showers—wells and watercourses in most places have less in them than probably in the memory of any one living they were ever known to have at the close of the year. It is to be hoped that the weather prophets, who predict a hard winter, will turn out to be wrong, as a protracted frost means dry weather, and after such an unusually dry winter as in the southern counties the last was, succeeded by a still drier summer and autumn, unless we get an exceptionally heavy rainfall before spring, the prospect in the matter of water for the ensuing summer occasions misgivings. *T. Baines.*

Reports of Societies.

Royal Meteorological.—The usual monthly meeting of this Society was held on Wednesday evening, the 17th inst., at the Institution of Civil Engineers, Mr. R. H. Scott, F.R.S., President, in the chair. Mr. C. H. Cotton, Mr. S. A. Jolly, L.R.C.P., and Rev. C. J. Taylor, M.A., were elected Fellows of the Society. The following papers were read:—

(1.) "On the reduction of temperature means from short series of observations to the equivalents of longer periods," by Dr. Julius Hann, Hon. Mem. R.Met.Soc. The author has recently carried out an investigation into the climate of the alpine districts of Austria, and in doing so he has endeavoured to reduce the monthly and annual means of all the temperature observations from the districts in question during the interval from 1848 to 1880, and in some places to 1884, to the mean for the thirty years' period 1851 to 1880. In this paper Dr. Hann describes the methods he adopted to reduce observations at mountain stations for short periods to the equivalents of longer periods.

(2.) "The diversity of scales for registering the force of wind," by Charles Harding, F.R.Met.Soc. The object of this paper is to call attention to the confusion that exists in the systems in use by various countries for registering wind force, whether instrumentally or otherwise, and to show the need of action for improvement.

(3.) "Report on the phenological observations for the year 1884," by the Rev. T. A. Preston, M.A., F.R.Met.Soc. The salient features of the weather during the period embraced in this report, viz., October, 1883, to September, 1884, were—the mild winter; the cold April; the hot August; and the long period of drought, which at the end of September began to be seriously felt. The general effects on vegetation have been—the prolonged existence of many of the autumn species; the great loss of wall fruit; the failure of bush fruits; the plentiful supply of Strawberries as long as they lasted, but the time was short; the good hay harvest, although it was light in quantity; the good corn crop; the unusually plentiful Potato crop; and the great abundance of wild fruits.

Answers to Correspondents.

CATTLEYAS: *J. Waldie.* They are both varieties of C. autumnalis.

CHRYSANTHEMUMS: *H. J. Corfield.* Your flower came to hand in a collapsed state—it had been crushed flat, and had been put into an envelope by the Post-office officials. The sport is worth growing.

COLCHICUM AND CROCUS: *R. S. H.* Plant them in early autumn and onwards till winter. Colchicum will not always bloom the first year after planting.

COURT PENDU PLAT APPLE AT SOUTHAMPTON SHOW: *W. Crump.* While thanking our correspondent for his very fair remarks on the above subject we think no further good result can be attained by continuing the discussion.

DIMENSIONS OF CUCUMBER-HOUSE: *J. B. T.* It was apparent on the face of it that 9 feet by 11 feet must be the height and width, whilst the length was not given. It would be a simple impossibility to plant 125 Cucumber plants in a house whose superficial area is 9 by 11 feet, and grow them on for fruit.

PLATES OF PLANTS: *R. Furber.* Please send one or two for our inspection.

NAMES OF PLANTS: *A. O. W.* Veronica elliptica.

SCALE IN "HANDY-BOOK OF THE FLOWER GARDEN": *A Beginner* does not make out a clear case against the book. Scale divisions are always arbitrary, and if they are not decimals they are still of use. The English inch is variously divided into eighths and tenths, or smaller divisions of these, and so long as the metrical system is not in vogue amongst us we can take those subdivisions of the foot that suit our purpose the best.

WATERCRESS: *B. Culliman.* Mr. Shirley Hibberd published a book on this matter a few years ago, which you might obtain from the office of the *Gardeners' Magazine.*

WORMS IN LAWN: Water with clear lime-water, and sweep them up early in the morning, when they are lying on the surface.

THE NUT WEEVIL: *L.* The grubs you find in the Nut are those of a weevil, Balaninus nucum. The female deposits her eggs in the young green Nuts in summer boring a hole through the soft shell for that purpose

In due time the eggs are hatched, and the grubs find in the young Nut abundant nutriment, provided by the foresight or instinct of the parent. The pink



FIG. 143.—THE NUT WEEVIL.

powder in the Nut has nothing to do with insects, but is a fungus.

WINTER MOTH: *L.* The moth is called Cheimatobia brumata. The caterpillars, which are green, and of the form called "loopers," are exceedingly destructive to fruit trees in the spring. The caterpillars eat the leaves, and spin a sort of white silky web round the rolled up leaves. The moths appear in late autumn and through the winter, flying in the evening sometimes in such numbers as to give the appearance



FIG. 144.—THE WINTER MOTH.

of falling sleet. Tomtits and other birds feed on them with avidity, and others may be caught by smearing the trunk with tar or treacle.

CATALOGUES RECEIVED.

JAMES VEITCH & SONS, Chelsea—Garden and Flower Seeds.

LORENZ, Erfurt—Illustrated Seed List.

PAUL PAREY, Berlin—List of Gardening Books.

WAITE, NASH, HUGGINS & Co., 79, Southwark Street, London—Wholesale Price Current of Seeds.

WEBB & SONS, Wordsley, Stourbridge—Spring Catalogue of Potatos and Garden Seeds.

Messrs. HAYMAN & BENJAMIN, 3, 4, 5, and 6, Camomile Street, E.C.—Memorial Wreaths, Crosses, &c., and Nurserymen's Sundries.

COMMUNICATIONS RECEIVED:—C. Taylor.—T. L.—Warwickshire.—J. H. S.—E. J.—X. Y. Z.—A. O. W.—R. P.—J. S.—H. Cannell & Son.—A. B.—Jas. Carter & Co.—W. Roberts.—T. S. C. (shortly).—J. D.—J. S., Mentmore.—T. C.—H. W. W.—D. M.—W. E. G—J. R.—W. D.—G. C.—G. T. M.—S. M.—J. G. B.—O. T.—H. J. C.—G. D.—E. B., Paris (long anticipated)—H. Cannell & Sons.—E. M. H.—W. H. F.—D. T. F.—J. S—A. D. W.—A. O. W.—G. & D. W.—O. de K., Ghent.—G. C. C.—Sir T. L.—W. B.—G. W. R—T. C.—W. S.—W. P., Epping.—W. Bonny.—R. Irwin Lynch.—G. Woodman.—T Moore.—C. M. Owen, with thanks.—T. C.—G. McKenzie,—C.—Covent Garden Salesman.—A. D.—J. S.—Mr Wilkinson.—J. Hards.—B. S. W.—W. Edwards.—R. Furber.—C. P—Ed. R. C.—H. E.

Markets.

COVENT GARDEN, December 23.

BUSINESS more active; supplies good and plentiful. Canadian Apples heavy, prices still tending downwards. Grapes firm; Kent Cobs dull. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	24 0	Ferns, in variety, per dozen	4 0	18 0
Arbor-vitæ (golden), per dozen	6 0	18 0	Ficus elastica, each	1 6	7 0
— (common), dozen	6 0	12 0	Foliage Plants, various, each	2 0	10 0
Arum Lilies, dozen	9 0	15 0	Hyacinths, Roman, each	1 0	2 0
Begonias, per doz.	4 0	12 0	Marguerite Daisy, per dozen	8 0	15 0
Bouvardia, dozen	9 0	18 0	Myrtles, per doz.	6 0	12 0
Chrysanth., dozen	6 0	12 0	Palms in variety, each	2 6	21 0
Cyclamens, per doz.	9 0	24 0	Pelargoniums, scarlet, per dozen	4 0	6 0
Cyperus, per dozen	4 0	12 0	P inettia, per doz.	9 0	15 0
Dracæna terminalis. per dozen	30 0	60 0	Primula sinensis, per dozen	4 0	6 0
— viridis, per doz.	12 0	24 0	Solanums, dozen	9 0	12 0
Epiphyllum, doz	18 0	54 0	Tulips, dozen pots	8 0	10 0
Erica, various, doz.	9 0	18 0			
Euonymus, various, per dozen	6 0	18 0			
Evergreens, in var., per dozen	6 0	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilon, 12 bunches	2 0	4 0	Mignonette, 12 bun.	6 0	9 0
Arum Lilies, 12 blms.	6 0	9 0	Narcissus, Paper-white, 12 sprays	2 6	3 0
Azalea, 12 sprays	1 0	1 6	Pelargoniums, per 12 sprays	1 0	2 0
Bouvardias, per bun.	0 9	1 0	— scarlet, 12 sprays	0 6	0 9
Camellias, per doz.	3 0	8 0	Poinsettia, 12 blooms	3 0	9 0
Carnations, 12 blms.	1 0	2 0	Primula, double, bun.	1 0	1 6
Chrysanth., 12 bun.	4 0	12 0	— sinensis, 12 bun.	4 0	6 0
— large, 12 blooms	1 0	3 0	Roses (indoor), doz.	2 0	6 0
Cyclamen, 12 blooms	0 3	0 6	— French, per doz.	0 9	1 6
Epiphyllum, 12 blms.	0 6	0 9	Stokesia, 12 blooms	1 0	..
Eucharis, per doz.	4 0	8 0	Tropæolum, 12 bun.	1 0	2 0
Euphorbia jacquiniflora, 12 sprays	1 0	2 0	Tuberoses, per doz.	2 0	3 0
Gardenias, 12 blms.	9 0	18 0	Tulips, 12 blooms	1 0	1 6
Heliotropes, 12 sp.	0 6	1 0	Violets, 12 bun.	1 0	1 6
Hyacinths, Roman, 12 sprays	1 0	1 6	— French, bunch	1 6	2 0
Lapageria, white, 12 blooms	2 0	3 0	— Parme, French, per bunch	5 0	7 0
— red, 12 blooms	1 0	2 0	Wallflower, 12 bun.	4 0	6 0
Lily-of-Val., 12 sprays	2 0	5 0	White Jasmine, per bunch	0 6	1 0
Marguerites, 12 bun.	3 0	6 0			

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	4 0	Lemons, per case	12 0	18 0
— Nova Scotia and Canadian, barrel	10 0	18 0	Pine-apples, Eng., lb.	2 0	..
Cobs, per 100 lb.	60	..	— St. Michael, each	3 0	7 0
Grapes, per lb.	1 6	4 0	Pears, French, doz.	1 6	3 6

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, Globe, per doz.	4 0	6 0	Horse Radish, bun.	3 0	4 0
Asparagus, English, per bundle	12 0	..	Lettuces, Cab., doz.	1 6	..
— French, bundle	3 0	..	— French Cos, each	0 6	..
Beans, French, lb.	1 0	..	Mint, green, bunch	1 6	..
Beet, per doz.	1 0	..	Mushrooms, p. baskt.	1 0	2 0
Cabbages, per doz.	1 6	2 0	Onions, per bushel	4 0	..
Carrots, per bun.	0 6	..	— Spring, per bun.	0 6	..
Cauliflowers, English, dozen	1 0	2 6	Parsley, per bunch	0 4	..
Celeriac, per root	0 4	..	Radishes, per doz.	1 0	..
Celery, per bundle	1 6	2 6	Rhubarb, bundle	0 8	..
Cucumbers, each	1 0	2 6	Salsify, per bund.	1 0	..
Endive, English, per dozen	1 0	..	Seakale, per punnet	2 0	2 6
Garlic, per lb.	0 6	..	Small salading, per punnet	0 4	..
Herbs, per bunch	0 2	0 4	Spinach, per bushel	2 0	..
			Tomatos, per lb.	1 0	1 6
			Turnips, bun.	0 5	..

POTATOS.—Magnum Bonums, 40*s.* to 70*s.*; Regents, 70*s.* to 90*s.* Champions, 45*s.* to 60*s.* per ton. Markets have a downward tendency.

SEEDS.

LONDON: *Dec.* 22.—The seed markets are now thinly attended, and quite a holiday spirit has already come over them. With regard to Clover seeds, all business therein is for the present in abeyance, and, in consequence, there is no important change in values to be noted. Cable advices report the American markets weaker. For English samples the tendency is also downwards. For Canary and Hemp seed the sale is exceedingly slow. Blue Peas and Haricot Beans are also neglected. Feeding Linseed is dull. *John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.*

CORN.

The holiday influence tended to check demand at Mark Lane on Monday, and business was very quiet. The changes in prices were very slight, but they were rather favourable than otherwise. For English Wheat prices of good dry samples were steady for both white and red. Fine white foreign Wheats were firmer. Flour was dull without change in value. There was rather more Maize in, but prices were firm. Malting Barley was quiet, and unchanged in value; grinding sorts were firm, but with a slow sale. No change occurred in the value of either Beans or Peas. With rather full supply of common Russian Oats, these descriptions had a drooping tendency; but good corn showed steady value. —Average prices of corn for the week ending Dec. 20:—Wheat, 31*s.* 5*d.*; Barley, 31*s.* 3*d.*; Oats, 19*s.* 4*d.* For the corresponding period last year:—Wheat, 39*s.* 2*d.*; Barley, 31*s.* 8*d.*; Oats, 19*s.* 7*d.*

CATTLE.

At Copenhagen Fields on Monday there was a larger and better selection of cattle than usual on the last market before Christmas, which met a dull sale. The previous Monday's top quotations were not currently obtainable, even for primest. The sheep supplies were also in excess of demand, and, although quotations cannot be altered, less had in some cases to be taken. The calf trade was very dull and lower, and there was no inquiry in the pig trade. Quotations:—Beasts, 4*s.* 4*d.* to 5*s.* 4*d.*, and 5*s.* 6*d.* to 6*s.*; calves, 4*s.* 4*d.* to 5*s.* 10*d.*; sheep, 5*s.* to 5*s.* 8*d.*, and 5*s.* 10*d.* to 6*s* 6*d.*

HAY.

The Whitechapel Market report states that there was a rather short supply on sale. The demand was better, and prices were dearer for best hay. Quotations:—Clover, prime, 95*s.* to 107*s.*; inferior, 6*s.* to 90*s.*; prime meadow hay, 80*s.* to 90*s.*; inferior, 40*s.* to 80*s.*; and straw, 24*s.* to 36*s.* per load.

COALS.

The following are the prices current at market during the week:—Walls End—Harton, 15*s.*; Tyne (unscreened), 11*s.* 3*d.*; Hetton, 17*s.*; Hetton Lyons, 15*s.*; Lambton, 16*s.* 6*d.*; Wear, 15*s.*; Hartlepool, 16*s.*; Hulam, 15*s.* 3*d.*

Government Stock.—Consols closed on Monday at 99⅜ to 99½ for delivery, and 99⅜ to 99¾ for the account. Tuesday's closing prices were 99¾ to 99½ for delivery, and 99½ to 99⅝ for the account. These quotations are ex div.

CARTERS'
STERLING
NOVELTIES.

IMPORTANT FACTS.—It is generally admitted that the Vegetables and Floral Novelties introduced of late years by Messrs. CARTER possess sterling qualities to a degree that finds few competitors. J. C. & Co have only to refer to the splendid introductions Stratagem, Telephone, and Pride of the Market Peas, Leviathan Beans, Heartwell Cabbage, Model Cucumber, Dedham Favourite Tomato, &c., to confirm the statement, and it is a notable fact that Messrs. Carters' Novelties, unlike many others, do not fade from public favour, but are generally recognised as necessary in every Garden, whether for Exhibition or for the Table.

The Champion Peas of the World

	Per pint.	Post Free.
CARTERS STRATAGEM	2*s.* 6*d.*	3*s.* 0*d.*
CARTERS' TELEPHONE	2*s.* 0*d.*	2*s.* 6*d.*
CARTERS' PRIDE OF THE MARKET	2*s.* 0*d.*	2*s.* 6*d.*

Broad Bean—Carters' Leviathan.
Pods 21 inches long.
Per pint, 2*s.*; post-free, 2*s.* 6*d.*

Runner—Holborn Masterpiece.
The best White Runner.
Price, per pint, 2*s.*; post-free, 2*s.* 6*d.*

Kale—Carters' Welsh.
A distinct and superior variety.
In sealed packets, 1*s.* 6*d.*, post-free.

Broccoli—Carters' Pyramid.
The perfection of Sprouting Broccoli.
In sealed packets, 1*s.* 6*d.* and 2*s.* 6*d.*, post-free

Cabbage—Carters' Prizetaker.
A distinct variety with a white heart.
In sealed packets, 1*s.*, post-free.

Celery—White Plume.
A beautiful variegated variety.
In sealed packets, 1*s.* and 2*s.* 6*d.*, post-free.

Onion—Crimson Vesuvius.
A desirable addition to the exhibition group.
In sealed packets, 1*s.* 6*d* and 2*s.* 6*d.*, post-free.

Tomato—King Humbert.
A distinct and novel variety.
In sealed packets, 1*s* and 2*s.*, post-free.

Tomato—Carters' Perfection.
Was awarded 1st Prize Royal Horticultural Society, 1884.
In sealed packets, 2*s.* 6*d.*, post-free.

LILIUM AURATUM.

In addition to the usual importations from the Japanese Growers, JAMES CARTER & CO have received a limited consignment from another source, which have also arrived in splendid condition. They are in every respect equal to the finest English-grown Bulbs on offer elsewhere—measuring, on an average, 3½ to 4 inches in diameter, and firm as if only just taken up from the ground.

Price, 2s. each, 18s. per dozen, Carriage Free.

Price to the Trade, with sample doz., on application.

Carters

Seedsmen by Royal Warrant to His Royal Highness the PRINCE OF WALES,

237 238, High Holborn, London, W.C.

WHITE PAMPAS PLUMES,
subject to being unsold on receipt of price.
18 to 24 inches long, $35 per 1000.
24 to 30 inches long, $5 per 100.

BALES of TOBACCO STEMS,
weighing 500 lb., $20 per bale, 3 bales for $50.
Cash with order, or reference to
H. WATERER, 3809, Pewelton Avenue, Philadelphia, U.S.A.

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE,
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton, 26*s.* per ton, in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Free Price LIST.—**H. G. SMYTH**, 2*1*, Goldsmith's Street Drury Lane (lately called 17A, Coal Yard), W.C.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
PEAT, best brown fibrous .. 4*s* 6*d*. per sack; 5 sacks for 20*s*.
PEAT, best black fibrous .. 3*s*. 6*d*. ,, 5 sacks for 15*s*.
PEAT, extra selected Orchid 5*s*. 0*d*. ,,
LOAM, best yellow fibrous ..
PREPARED COMPOST, best
LEAF MOULD, best only ..
PEAT MOULD ,, .. } 1*s*. per bush. (sacks included).
SILVER SAND, coarse, 1*s*. 3*d*. per bush., 12*s*. half ton, 22*s*. ton
RAFFIA FIBRE, best only.. .. .. 8*d*. per lb.
TOBACCO CLOTH, finest imported .. 8*d*. lb., 28 lb. 18*s*.
TOBACCO PAPER ,, (Spécialité) 8*d*. lb., 28 lb. 18*s*.
MUSHROOM SPAWN, finest Milltrack.. 5*s*. per bushel.
SPHAGNUM MOSS, all selected 2*s*. per bush., 6*s*. per sack.
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s*. each; 10 sacks, 9*s*.; 15 sacks, 13*s*.; 20 sacks, 17*s*.; 30 sacks, 25*s*.; 40 sacks, 30*s*. Truck-load, loose, free on rail, 30*s*. Limited quantities of G., special quality, granulated, in sacks only, 2*s*. each. Terms, strictly Cash with order.

CHUBB, ROUND & CO.,
WEST FERRY ROAD, MILWALL, LONDON, E.

12-oz. Sample Packets, free by post, 12 stamps.
FIBROUS PEAT for ORCHIDS, &c.—BROWN FIBROUS PEAT, best quality for Orchids, Stove Plants, &c., £6 6*s*. per Truck. BLACK FIBROUS PEAT, for Rhododendrons, Azaleas, Heaths, American Plant Beds, 15*s*. per ton per Truck. Sample Bag, 5*s*.; 5 Bags, 22*s* 6*d*.; 10 Bags, 45*s*. Bags included. Fresh SPHAGNUM, 10*s* 6*d*. per Bag.
SILVER SAND, Coarse or Fine, 52*s*. per Truck of 4 tons.
WALKER AND CO., Farnborough Station, Hants.

THOMSON'S VINE and PLANT MANURE.

This is the Manure used to produce the magnificent crops of Grapes at Clovenfords, Galashiels, and it is equally good for all kinds of plants in pots, as well as for plants in the open ground.

Manufactured by THE LIVERPOOL HORTICULTURAL COMPANY (John Cowan), Limited, and sold by them and all Nurserymen and Seedsmen.

Circulars, with full particulars, on application to
THE LIVERPOOL HORTICULTURAL CO.
(JOHN COWAN), LIMITED,
THE VINEYARD and NURSERIES,
GARSTON, LIVERPOOL.

KEEL'S GARDENERS' FRIEND and BLIGHT DESTROYER.—Best winter dressing for Peach Trees, &c. No painting nor washing required. Syringe as directed with Keel's Insecticide. Wonderful results—destroys all Blight—imparts no flavour to Fruit—clean, healthy, and very cheap. Send orders early to W. G. KEEL, Newton St. Loe, near Bristol (late Keel & Hawes, Bath); or to Nurserymen. Empties to Bath Station.

GARDEN REQUISITES as supplied to the Royal Gardens.—Best Quality. Cocoa-Nut Fibre Refuse, 1*s*. per sack; 30 for 25*s*.—bags included. Trucks (containing 2 Tons) 25*s*., free on Rail. Best Brown Fibrous Kent Peat, 5*s*. per sack; 5 for 22*s*. 6*d*.; 10 for 35*s*. Black Fibrous Peat, 3*s*. 6*d*. per sack; 10 for 30*s*. Coarse Bedford Sand, 1*s*. 3*d*. per bushel; 12*s*. per ½-ton; 22*s*. per ton. Loam, Leaf-Mould, and Peat-Mould, 1*s*. per bushel. Guano, Crushed Bones, &c. Finest Tobacco Cloth, 8*d*. per lb.; 28 lb. for 18*s*. Specialité Tobacco Paper, 10*d*. per lb.; 28 lb. for 21*s*.; 70*s*. per cwt. Second quality, 7*d*. per lb.; 28 lb. for 16*s*. Archangel and Petersburgh Mats. Price LIST sent free. Special quotations to the Trade for cash.
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HOP EXCHANGE WAREHOUSES, SOUTHWARK STREET, S.E.
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EUREKA INSECTICIDE.—The only Insecticide worth using. Recommended by the Principal Gardeners in Scotland. The only Insecticide awarded Diploma, Forestry Exhibition, Edinburgh.—Wholesale Agents, CORRY, SOPER, FOWLER AND CO., Finsbury Street, London, E.C.

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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s*., 3*s*., and 10*s*. 6*d*.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d*. and 1*s*. from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

Oil Paint no Longer Necessary.
HILL AND SMITH'S BLACK VARNISH,
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This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thirds cheaper. It was introduced upwards of thirty years ago by the Advertisers, and its genuine good quality, notwithstanding a host of unprincipled imitators, is fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Nobility and Gentry, from whom the most flattering testimonials have been received.

Sold in Casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon carriage paid to any Station in the Kingdom.

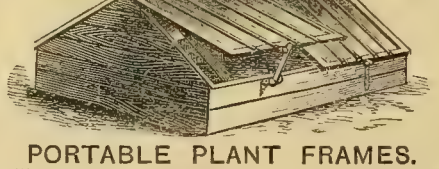
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"*Piercefield Park, June* 21, 1876.—Sirs.—I have this day forwarded from Chepstow to your address a black varnish cask, to be filled and returned with as good Varnish as the last we had, which I candidly admit was the best we every had. Address Varnish to Piercefield Park, Chepstow.—I am, Sirs, yours respectfully, WM. COX.

CAUTION.—HILL & SMITH would particularly warn their Customers against the various cheap Varnishes now so much advertised.

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6 feet long, 4 feet wide, packing cases free	£2	15	0
12 feet long, 4 feet wide, ,, ,, ,,	4	15	0
6 feet long, 5 feet wide, ,, ,, ,,	3	15	0
12 feet long, 5 feet wide, ,, ,, ,,	6	10	0

The glass is nailed and puttied in.

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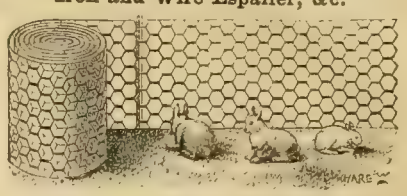
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COLLARS, Ladies' and Childrens' three-fold, 3*s*. 6*d* per doz; Gents' four-fold, 4*s*. 11*d*. to 5*s* 11*d*. per doz.

CUFFS, For Ladies, Gentlemen, and Children, 5*s* 11*d*. to 10*s* 9*d*. per doz.

Best Quality Longcloth Bodies, with four-fold all linen fronts and cuffs, 35*s*. 6*d*. the half dozen (to measure, 2*s*. extra). New designs in our Special Indiana Gauze and Printed Shirtings and Unshrinkable Flannels for the Season. **AND SHIRTS.**

IRISH Real Irish Linen Sheetings, fully bleached, 2 yards wide, 1*s*. 11*d*. per yard; 2½ yards wide, 2*s* 4½*d*. per yard (the most durable article made, and far superior to any Foreign manufactured goods). Roller Towelling, 18 inches wide, 3½*d*. per yard.

Surplice Linen, 8½*d*. per yard. **LINENS,** Linen Dusters, 3*s*. 3*d*; Glass Cloths, 4*s*. 6*d*. per doz. Fine Linens and Linen Diaper, 10*d*. per yard.

Fish Napkins, 2*s*. 11*d* per doz. Dinner Napkins, 5*s* 6*d*. per doz. Table Cloths, 2 yards square, 2*s* 11½*d*; 2½ yards by 3 yards, 5*s*. 11*d*. each. Kitchen Table Cloths, 11½*d* each Strong Huckaback Towels, 4*s*. 6*d*. per dozen. Monograms, Crests, Coats of Arms, Initials, &c., woven and embroidered. **AND DAMASKS.**

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Children's, Hemmed for use,			1*s*. 8*d*. per doz.
Ladies'	,,	,,	2*s*. 11*d*. ,,
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ALL PURE FLAX. **POCKET** HEMSTITCHED.

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Ladies'..	..	..	5*s*. 6*d*.
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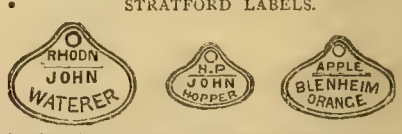
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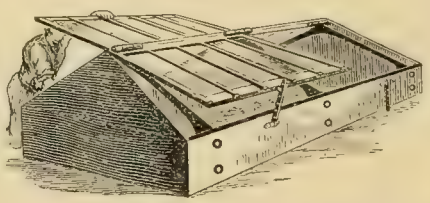
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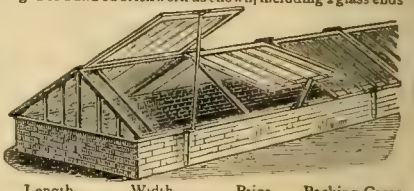
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CASH PRICES, including Packing Cases.

6 feet long, 3 feet wide, including one pair of ends							£2	2	0
12	,,	,,	3	,,	,,	,,	,,	3	12	0
6	,,	,,	4	,,	,,	,,	,,	2	14	6
12	,,	,,	4	,,	,,	,,	,,	4	12	6
12	,,	,,	5	,,	,,	,,	,,	6	0	6
12	,,	,,	6	,,	,,	,,	,,	7	12	6

No. 64.—Span-roof Plant Frame.

The Gardeners' favourite Frame, used for storing bedding plants in winter, and in summer for growing Melons, &c., arranged to build on brickwork as shown, including 2 glass ends

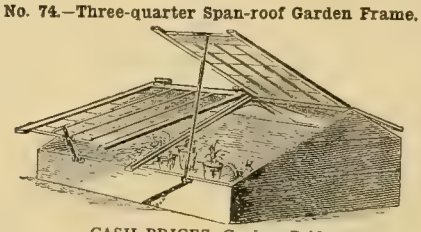


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18 ,,	..	5 ,,	..	7 5 6	..	6 0
24 ,,	..	5 ,,	..	9 2 6	..	7 6
30 ,,	..	5 ,,	..	11 2 6	..	9 0
12 ,,	..	6 ,,	..	6 10 0	..	5 0
18 ,,	..	6 ,,	..	9 0 0	..	6 6
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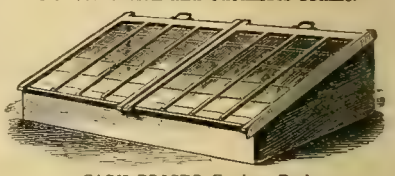


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Size.	Length.	Width.	Price.	Packing Cases.
No. 2 ..	8 feet ..	6 feet ..	£4 15 0 ..	5s. 6d.
No. 3 ..	12 ,, ..	6 ,, ..	6 10 0 ..	6 6
No. 4 ..	16 ,, ..	6 ,, ..	8 5 0 ..	8 0

Height in front, 11 inches, back 22 inches, centre 32 inches. Lights made to turn over. Set-opes for ventilating.

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No. 3 ..	12 ,, ..	6 ,, ..	4 17 6 ..	4 0
No. 4 ..	16 ,, ..	6 ,, ..	6 7 6 ..	4 6

Depth in front 13 inches, back 24 inches, lights 2 inches thick, strengthened with iron rod. One handle to each light. Lights only, 6 ft. × 4 ft., unglazed and unpainted, 6s. each. Glazed with 21-oz. sheet glass and painted 4 coats, 16s. each.

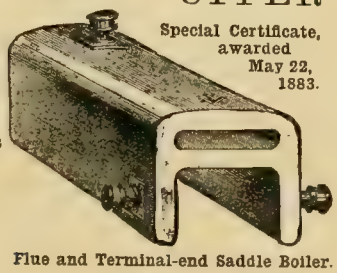
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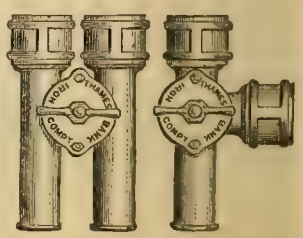
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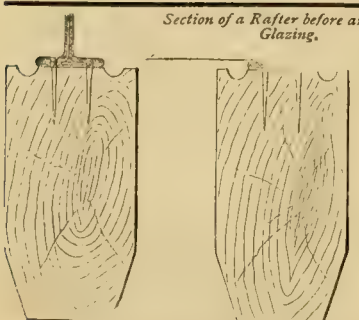
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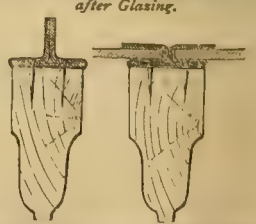
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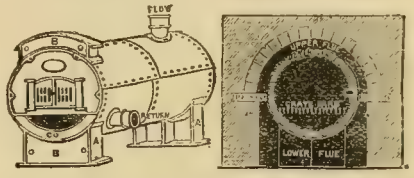
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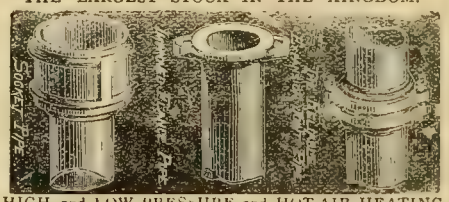
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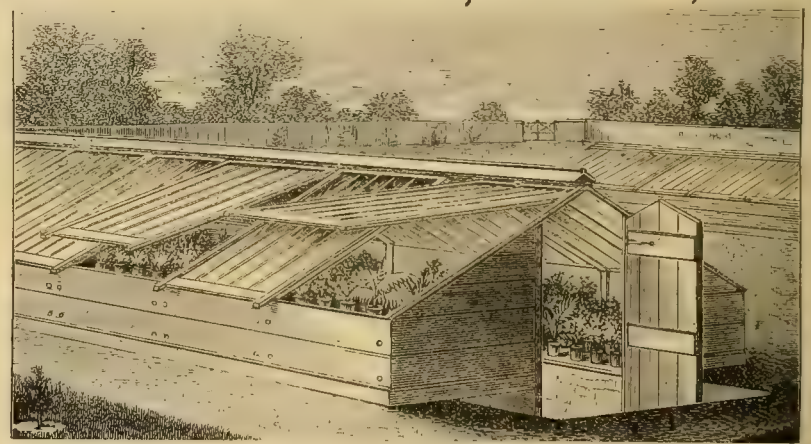
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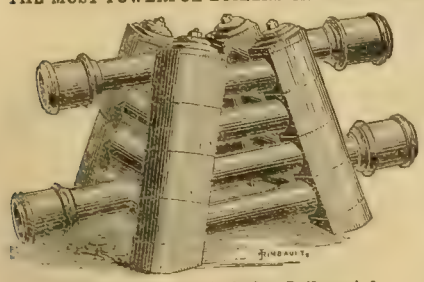
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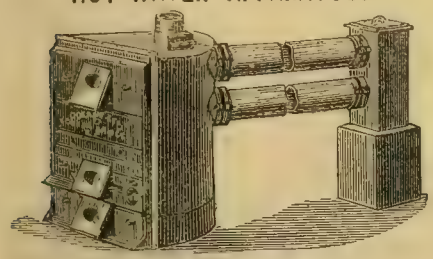
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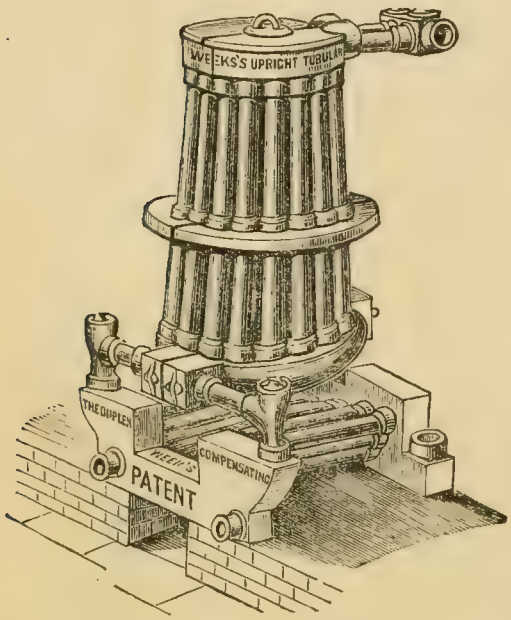
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